	Data and Bus	siness Rules – D	ementia	Indicator S	et
Author	DoH – Primary Ca	Version No are	36.0 NI	Version Date	07/08/2018

New GMS Contract QOFImplementation

Dataset and Business Rules

Dementia Indicator Set (DEM)

Northern Ireland

Amendment History:

Version	Date	Amendment History
25.0NI	13-May-2013	V25 Department of Health QOF ruleset (28/03/13) used as a base and adapted to reflect the NI 2013/13 agreement - NI indicators IDs updated; 15 mth rules accepted; indicator wording checked
26.0NI	13-Sept-2013	April 2013 Read Code Release following review
27.0NI	12-Nov-2013	November 2013 Read Code Release
28.0NI	17-Apr-2014	2014/15 Business rules update
	14-May-2014	DRAFT – Reformatting and rule check
28.1NI	18-Jun-2014	Version change to bring in line with other rulesets. Minor formatting
28.2NI	27-Jun-2014	New cluster BLOODEXC_COD requested. Removal of FLU text
29.0NI	24-Oct-2014	April 2014 Read Code Updates
30.0NI	24-Oct-2014	October 2014 Read Code Updates
32.0NI	30-June-2015	April 2015 Read Code Updates
32.1NI	28-Sep-2015	Post review changes 2015/16
33.0NI	07-Jan -2016	October Read Code Updates and V32.1 fixes
34.0NI	06-Sep-2016	Read code changes.
35.0NI	19 Oct 2017	Business rules update
		DEM003 timeframe change: Time of new diagnosis changed from 6 months before entering the register to 12 months Qualifying criteria updated
36.0NI	07 Aug 2018	Business rules updated for 2018/2019

New GMS contract Q&O framework implementation

Dataset and business rules - Dementia 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 2015 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).

The version number starts at 7.1 in order to coincide with existing datasets and business rules.

- 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.
 - 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 forthat 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, unless the operator "ALL" is used.

The "ALL" statement is used within the Qualifying Criteria for the Clinical data extraction criteria. Typically the selection for a READCODE_COD cluster field is based on a date of "LATEST" or "EARLIEST". The "ALL" statement is used to select all occurrences of any of the codes within the READCODE_COD cluster. It selects an array of instances, of which there may be more than one for each patient.

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)
 - b) < (less than)
 - c) = (equal to)
 - d) \neq (not equal to)

- e) AND
- f) OR
- g) NOT

7) Where date criteria are specified with intervals of multiples of months or years these should be interpreted as calendar months or calendar years.

DatasetSpecification

1) Patient selection criteria:

a) Registration status

Current registration status	<u>Qualifyingcriteria</u>	
Currently registered for GMS	Most recent registration date < (REF_DAT)	
	Any sequential pairing of registration date and deregistration date where both of the following conditions	
Previously registered for	are met:	
GMS	registration date < (REF_DAT); and deregistration date >= (REF_DAT)	

b) Diagnostic code status

Codecriteria	Qualifying diagnostic codes		Time criteria
Included	Read codes v2 Eu02.% E00% Eu01.% E02y1 E012.% Eu00.%	X002w% Xa1GB%(excluding X003E%, X001T) Eu02.% XE1Xt E00z.	Earliest < (REF_DAT)
	E041. Eu041 F110. – F112. F116. F118. F21y2 A410. A411.%	E02y1 X003G	
	(Dementia codes)		

2) Clinical data extraction criteria

Field <u>Number</u>	Field name	<u>Data item</u>		Qualifying criteria
1	PAT_ID	Patient ID) number	Unconditional
2	REG_DAT	Date of patient registration		Latest < (REF_DAT)
		Read codes v2	CTV3	
3	DEMEXC_COD	9hD0. 9hD1.	XaLFo XaLFp	Latest < (REF_DAT)
		(Dementia exception	reporting codes)	
4	DEMEXC_DAT	Date of DEM	MEXC_COD	Chosen record
5	DEM_COD	Read codes v2 Eu02.% E00% Eu01.% E02y1 E012.% Eu00.% Eu041. Eu041 F110. – F112. F116. F118. F21y2 A410. A411.%	X002w% Xa1GB% (excluding X003E%, X001T) Eu02.% XE1Xt E00z. E02y1 X003G	Earliest < (REF_DAT)
		(Codes for Dementia)		
6	DEM_DAT	Date of DEM_COD		Chosen record

			1		
		Read codes v2	CTV3		
7	DEMR_COD	6AB	XaMG	Latest < (REF_DAT)	
		(Code for Demen	tia health review)		
8	DEMR_DAT	Date of DE	MR_COD	Chosen record	
		Read codes v2	CTV	Earliest ((>=	
9	FBC_COD	423 426 42A 42H	Xa96 V 426 42A	DEM_DAT -12 months) AND (<= DEM_DAT +6 months) AND	
		(Full blood coun	t test recording)	<(REF_DAT))	
10	FBC_DAT	Date of Fi	BC_COD	Chosen record	
		Read codes v2	CTV3		
11	CALC_COD	44h4. 44l8. 44h7. 44IE. 44ID. 44IC. 44h9. 44hD. 4Q721 44h90 44IC0 (Calcium tes	XaDv d XE2q 3 XaIR k Xald R XaIU 0 44IC	Earliest ((>= DEM_DAT-12 months) AND (<= DEM_DAT + 6 months) AND <(REF_DAT))	
12	CALC_DAT	Date of CALC_COD		Chosen record	
13	GLUC_COD	Read codes v2 44TM. 44f%	CTV XaJmX X772z% (excluding Xa974%, XE2mr,	Earliest ((>= DEM_DAT-12 months)	
		44g%	XE2ms, XE2mt, XaXcx, XaXdZ, XaXda,	AND (<= DEM_DAT	

Dementia ruleset v36.0 NI Version Date: 07/08/2018 44T1.-44T3. XaXdX, XaXdW, XaXdY, XaXee, XaXcf, +6 months) AND 44TA. XaaFu, XaaFo, XaaFq, XaaFn, XaaFs, <(REF DAT)) 44TE. - 44TK. (Excluding 44TJ0, 44TJ1, XaaFp. 44TJ2, 44TJ3, 44TJ4, 44TJ5, 44TJ6, Xabmv, Xabmw) 44TJ7. 44TJ9, 44f..% 44TJA) XM0lv% 44U..% (Excluding 44Uz.) 44T10 44V.. – 44V3. 44T11 44V6. 44T12 44U8. R102. 44U9. R10D. XE25Z R1057 44V1. 7P172 44V2. 44V3. XaMLQ R102. XaFxf XS7Nb (Glucose testrecording) GLUC DAT Date of GLUC COD Chosen record 14 Read codes v2 CTV3 Earliest ((>= 44J9. XM0lt DEM DÀT-44JA. XaDvl <u>1</u>2 15 RENAL COD 44J3. XE2q5 months) 44JF. **XaETQ** AND (<= DEM DAT 44JC. **XaERX** +6 months) AND 44JD. XaERc <(REF DAT)) (Renal test recording) Chosen record RENAL DAT Date of RENAL COD 16

17	LIVER_COD	Read codes v2 44GA. 44GB. 44E 44EC. 44E9. 44G7. 44G9. (Liver test rec	CTV3 XaLJx XaIRi 44E XaERu XaETf XaES4 XaES3 cording)	Earliest ((>= DEM_DAT-12 months) AND (<= DEM_DAT + 6 months) AND <(REF_DAT))
18	LIVER_DAT	Date of LIVER	R_COD	Chosen record
19	DEMTFT_COD	Read codes v2 442A. 442W. 442X. (Thyroid function tests for o	CTV3 XaELV XaELW XE2wy dementia screening)	Earliest ((>= DEM_DAT-12 months) AND (<= DEM_DAT + 6 months) AND <(REF_DAT))
20	DEMTFT_DAT	Date of DEMTF	T_COD	Chosen record
21	VITB12_COD	Read codes v2 42T 44Le. (B12 level t	CTV3 XE2pf XaJ27 rests)	Earliest ((>= DEM_DAT-12 months) AND (<= DEM_DAT + 6 months) AND <(REF_DAT))
22	VITB12_DAT	Date of VITB12_COD		Chosen record
23	FOL_COD	Read codes v2 42U5. 42U4. 42UE.	CTV3 42U5. 42U4. X76tC	Earliest ((>= DEM_DAT-12 months) AND (<= DEM_DAT + 6 months)

		(Folate le	AND < (REF_DAT))	
24	FOL_DAT	Date of Fo	OL_COD	Chosen record
		Read codes v2	CTV3	Earliest ((>=
25	IFCCHBA_COD	42W5.	XaPbt	DEM_DAT -12 months) AND (<= DEM_DAT +6 months) AND
		(IFCC HbA	A1c codes)	<(REF_DAT))
26	IFCCHBA_DAT	Date of IFCC	CHBA_COD	Chosen record
		Read codes v2	CTV3	
27	GLUCEXC_COD	8IEG.	XaYH6	Latest < (REF_DAT)
		(Glucose test ex	(Glucose test exception codes)	
28	GLUCEXC_DAT	Date of GLU	CEXC_COD	Chosen record
		Read codes v2	CTV3	
29	BLOODEXC_COD	41M	XaZOq	Latest < (REF_DAT)
		(Codes for blood test declined)		
30	BLOODEXC_DAT	Date of BLOODEXC_COD		Chosen record

Indicator rulesets

<u>IndicatorDEM001</u>: The contractor establishes and maintains a register of patients diagnosed with dementia.

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.

Page 13 of 21

<u>Indicator DEM002</u>: The percentage of patients diagnosed with dementia whose care has been reviewed in a face-to-face review in the preceding 15 months.

a) Denominatorruleset

Rule number	<u>Rule</u>	<u>Actioniftrue</u>	Action iffalse
1	If <u>DEMR_DAT</u> >= (<u>REF_DAT</u> – 15 months) AND If <u>DEMR_DAT</u> >= <u>DEM_DAT</u>	Select	Next rule
2	If $\underline{REG}\ \underline{DAT} >= (\underline{REF}\ \underline{DAT} - 3months)$	Reject	Next rule
3	If \overline{DEMEXC} $\overline{DAT} >= (\overline{REF}$ $\overline{DAT} - 15$ months)	Reject	Next rule
4	If $\overline{DEM} \overline{DAT} >= (\overline{REF} \overline{DAT} - 3 \text{ months})$	Reject	Select

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

Rule number	<u>Rule</u>	<u>Actioniftrue</u>	Action iffalse
1	If <u>DEMR_DAT</u> >= (<u>REF_DAT</u> – 15 months) AND If DEMR_DAT>= DEM_DAT	Select	Reject

<u>Indicator DEM003</u>: The percentage of patients with a new diagnosis of dementia recorded in the preceding 1 April to 31 March with a record of FBC, calcium, glucose, renal and liver function, thyroid function tests, serum vitamin B12 and folate levels recorded between 12 months before and 6 months after entering on to the register.

Overview

This indicator has been developed to measure the effectiveness of the provision of a clinical care component for patients with dementia. The aspect that is being measured is that relating to the provision of a complete set of screening tests.

Disease register

The disease register is made up of patients who are eligible to receive the required care component. In this case, patients who have a diagnosis of dementia (i.e. there is evidence in the patients electronic health record of a dementia diagnosis code).

Numerator and Denominator

The success criteria for this indicator (numerator) are achieved for those patients in the denominator who have all of the tests recorded (not necessarily on the same day) between 6 months before and 6 months after entering on to the register.

The patients that make up the denominator for this indicator are those patients where it is appropriate for the care component to be carried out. This is the relevant disease register adjusted for exclusions and exceptions.

Exclusions

For this indicator there are three exclusions.

- The indicator is specifically looking at newly diagnosed patients within the QOF period. However, as the tests can be carried out 6 months before diagnosis any patient with a dementia diagnosis in the preceding 18 months needs to be checked. If a patient has a dementia diagnosis which falls outside this time span they will be excluded.
- Consideration has to be made for those patients diagnosed with dementia within 6 months of the end of the QOF period i.e. the 6 month "window" for the tests would then span 2 years. If at least one of the tests has not been carried then it would be unreasonable for the patient to be considered unsuccessful until the full 6 months are checked which can only be done in the next QOF period. Such patients are excluded for this year.
- Consideration has to be made for those patients who have been diagnosed with dementia in the previous QOF financial year AND have successful recordings for all the tests in the previous QOF Financial Year because practices will have been rewarded for the indicator in that earlier year. This rule is in place to prevent duplicate payments.

Exceptions

Patients that don't achieve the success criteria of the indicator are checked for valid exceptions.

For this indicator the exceptions are:

- Any patient that has a relevant glucose test exception code recorded in the preceding 15 months.
- Any patient that has a relevant blood test exception code recorded in the preceding 15 months.
- Any patient who has been registered within the last 3 months of the qualifying year (new patient). New patients may be regarded as exceptions if they fulfil the criteria of the indicator but have not yet had all of the tests - maybe because there hasn't been an opportunity in the qualifying year to arrange them.

 Any patient that has a relevant dementia exception code recorded within the preceding 15 months.

Any patient that has been diagnosed with dementia within the last 3 months of the
year (new diagnosis of dementia). Newly diagnosed patients may be regarded as
exceptions if they fulfil the criteria of the indicator but have not yet had the tests maybe because there hasn't been an opportunity in the qualifying year to arrange
them.

Note: For the "new" dementia patient exception, this is only applicable for the first "ever" diagnosis of dementia for the patient. For a subsequent diagnosis, this exception rule is not considered.

Indicator DEM003: The percentage of patients with a new diagnosis of dementia recorded in the preceding 1 April to 31 March with a record of FBC, calcium, glucose, renal and liver function, thyroid function tests, serum vitamin B12 and folate levels recorded between 12 months before and 6 months after entering on to the register.

a) Denominatorruleset

Rule number	<u>Rule</u>	Actioniftrue	Action iffalse
1	If <u>DEM_DAT_</u> <(<u>REF_DAT</u> 18 months)	Reject	Next rule
	If <u>DEM_DAT</u> >= (<u>REF_DAT</u> - 6 months) AND (If <u>FBC_DAT</u> = Null OR <u>CALC_DAT</u> = Null OR (<u>GLUC_DAT</u> = Null AND <u>FCCHBA_DAT</u> = Null)		
2	OR RENAL_DAT = Null OR LIVER DAT = Null OR DEMTFT DAT = Null OR VITB12 DAT Null OR FOL DAT = Null)	Reject	Next Rule
	If FBC_DAT < (REF_DAT - 12months) AND CALC_DAT < (REF_DAT - 12months) AND (GLUC_DAT < (REF_DAT - 12months) OR IFCCHBA_DAT < (REF_DAT - 12months)) AND RENAL_DAT < (REF_DAT - 12months) AND LIVER_DAT < (REF_DAT - 12months) AND DEMTFT_DAT < (REF_DAT - 12months) AND VITB12_DAT < (REF_DAT - 12months) AND FOL_DAT < (REF_DAT - 12months) AND FOL_DAT < (REF_DAT - 12months) AND DEM_DAT < (REF_DAT - 12months) AND DEM_DAT < (REF_DAT - 12months)	Reject	Next rule

4	If <u>FBC_DAT</u> ≠Null AND CALC_DAT ≠ Null AND (GLUC_DAT ≠ Null OR <u>IFCCHBA_DAT</u> ≠Null) AND RENAL_DAT ≠ Null AND LIVER_DAT ≠ Null AND DEMTFT_DAT ≠ Null	Select	Next rule
	AND VITB12 DAT ≠ Null AND FOL_DAT ≠ Null		
	If <u>FBC_DAT</u> ≠Null AND <u>CALC_DAT</u> ≠Null AND		
5	GLUCEXC DAT >= (REF DAT – 12 months) AND RENAL DAT ≠ Null AND	Reject	Next rule
	LIVER DAT≠Null AND <u>DEMTFT DAT</u> ≠Null		
	AND <u>VITB12_DAT</u> ≠Null AND <u>FOL_DAT</u> ≠Null		
6	If <u>BLOODEXC_DAT</u> >(<u>REF_DAT</u> -12 months)	Reject	Next rule
7	If $\underline{REG}\ \underline{DAT} >= (\underline{REF}\ \underline{DAT} - 3months)$	Reject	Next rule
8	If <u>DEMEXC_DAT</u> >= (<u>REF_DAT</u> -12months)	Reject	Next rule
9	If <u>DEM_DAT</u> >= (<u>REF_DAT</u> – 3 months)	Reject	Select

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

Rule number	<u>Rule</u>	Actionif true	Action if false
1	If FBC DAT ≠ Null AND CALC DAT ≠ Null AND (GLUC DAT ≠ Null OR IFCCHBA DAT ≠ Null) AND RENAL DAT ≠ Null AND LIVER DAT ≠ Null AND DEMTFT DAT ≠ Null AND VITB12 DAT ≠ Null AND FOL DAT ≠ Null	Select	Reject

Additional Notes:

Denominator

Exclusions

Rule 1: This indicator is looking at patients who are newly diagnosed with dementia in the preceding 18 months. So the objective of this rule is to exclude patients from the register whose first diagnosis was before this. If the patient is newly diagnosed within this 18 month time period they are passed on to the next rule.

Rule 2: The objective of this rule is to check that patients who have not achieved the full success criteria, but were diagnosed in the last 6 months of the QOF period, are not included in the denominator (or numerator). Subsequent rules ensure that this patient would be "checked" in the following QOF period to ensure whether or not the full set of tests were carried out.

If the patient has not been newly diagnosed in the last 6 months of the period they are passed on to the next rule.

If a patient has been newly diagnosed in the last 6 months of the period and all the tests have been carried out as intended they are also passed on to the next rule.

Rule 3: The objective of this rule is to identify patients who have a dementia diagnosis in the previous QOF Financial Year and have successful recordings for all the tests in the previous QOF Financial Year.

If the patient was diagnosed with dementia in the previous QOF Financial Year, has recordings of all the tests (FBC, calcium test, glucose test, renal test, liver test, thyroid function test, serum vitamin B12, folate levels test) in the previous QOF financial year and they are all within the appropriate timeframe from diagnosis they are rejected from the denominator. The practice will have been rewarded for this indicator in the previous QOF financial year. If not they are passed on to the nextrule.

Success

Rule 4: The objective of this rule is to identify patients who have successful recordings for all the tests. The patient must have recordings of all the tests (FBC, calcium test, glucose test, renal test, liver test, thyroid function test, serum vitamin B12, folate levels test) within 6 months before a diagnosis or up to 6 months after a diagnosis.

If the patient does not have all tests recorded within the appropriate time frame (<u>asspecifiedin</u> theclinicaldataextractioncriteria) they are passed on to the next rule.

Exceptions

It is worth remembering at this point that if a patient has a recording of all the tests within 6 months before a diagnosis or up to 6 months after a diagnosis then they will already have been selected into the denominator in Rule 4.

Rule 5: The aim of this rule is to identify any patient with a successful recording for the FBC, calcium test, renal test, liver test, thyroid function test, serum vitamin B12 and folate levels tests but with a relevant glucose test exception code also recorded. If this glucose test exception code has been recorded in the preceding 15 months, the patient can be excepted and is not included in the denominator. Otherwise they are passed on to the next rule.

Rule 6: The aim of this rule is to identify any patient that has a valid blood test exception code recorded. If this has been recorded in the preceding 15 months, the patient can be excepted and is not included in the denominator. Otherwise they are passed on to the nextrule.

Rule 7: The aim of this rule is to identify any patient that has "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. If the patient was not registered in the last 3 months they are passed on to the next rule.

Rule 8: The aim of this rule is to identify any patient that has a valid dementia exception code recorded. If this has been recorded in the preceding 15 months, the patient can be excepted and is not included in the denominator. Otherwise they are passed on to the next rule.

Rule 9: The aim of this rule is to identify any patient that has been "recently diagnosed" as a dementia patient. If the patient has been diagnosed with dementia in the last 3 months, the patient can be excepted and is not included in the denominator. Otherwise the patient is selected into the denominator.

Numerator

The success criterion for this indicator is as per Denominator Rule 4.