NHS Outcomes Framework

Domain 2
Enhancing quality of life for people with long-term conditions

Indicator specifications

Version: 1.27
Date: February 2020
Author: Clinical Indicators Team
# NHS Outcomes Framework: Domain 2 – Enhancing quality of life for people with long-term conditions

## Document Management

### Revision history

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<td>2.3.ii</td>
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<td>Contextual indicator (health related quality of life for all GP Patient Survey respondents) published</td>
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<td>2.3.i 2.3.ii</td>
<td>Data indirectly standardised to the 2012 mid-year population estimates</td>
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<td>Update of specification to refine HES filters and include an additional ADMIMETH filter (data unaffected)</td>
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<td>Survey response rates published for all data periods and relaxation of suppression rules</td>
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<td>Description</td>
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<tr>
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<td></td>
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<tr>
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<td>2.1</td>
<td>Updated questions for GPPS questionnaire</td>
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<tr>
<td>February 2019</td>
<td>2.3.i</td>
<td>Updated disclosure controls to include new HES suppression rules</td>
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<td>1.27</td>
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2 Health-related quality of life for people with long-term conditions

Indicator assurance

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<td>Methodology Review Group (MRG) recommended</td>
<td>July 2013, January 2014 (recommended based on direct standardisation methodology)</td>
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<td>Indicator Governance Board (IGB) assured</td>
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Overview

Indicator title
2 Health-related quality of life for people with long-term conditions

Indicator family name
NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions
Overarching indicator

Outcome sought
Improved health-related quality of life for people with long-term conditions.

Detailed Descriptor

Plain English description
This indicator measures health-related quality of life for people who identify themselves as having one or more long-standing health conditions. Health-related quality of life refers to the extent to which people:

- have problems walking about;
- have problems performing self-care activities (washing or dressing themselves);
- have problems performing their usual activities (work, study etc.);
- have pain or discomfort;
- feel anxious or depressed.
Technical description
The directly standardised average (mean) EQ-5D™ score for people self-reporting one or more long-term conditions.

Alignment with other Outcome Frameworks
Complementary to Adult Social Care Outcomes Framework Indicator 1A

Data sources
GP Patient Survey (GPPS) from Ipsos MORI (http://www.gp-patient.co.uk/) – Official Statistics
Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.
As of February 2018, further updates for this indicator are currently to be confirmed.

Construction
Calculation methodology
Introduction
Indicator 2 is the overarching indicator for domain 2 of the NHS Outcomes Framework.
The indicator is based on a large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years’ survey questionnaires are available from the link in the data sources section.
Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer before the questionnaire is received, and they are at least 18 years old six months before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for each survey are available in a technical annex from the link in the data sources section.

Data filters
Data are filtered based on questions from the GP Patient Survey, to isolate those who report one or more long-term conditions. Respondents are identified as having a long-term condition if they answer ‘Yes’ to the following question.

Do you have a long-standing health condition?
- Yes
- No
- Don’t know/can’t say
If respondents fail to acknowledge their long-term condition in this question (those who answer ‘No’ or ‘Don’t know/can’t say’) but tick a condition in the next question, they are also classed as having a long-standing health condition:

*Which, if any, of the following medical conditions do you have? Please x all the boxes that apply to you:*

- Alzheimer’s disease or dementia
- Angina or long-term heart problem
- Arthritis or long-term joint problem
- Asthma or long-term chest problem
- Blindness or severe visual impairment
- Cancer in the last 5 years
- Deafness or severe hearing impairment
- Diabetes
- Epilepsy
- High blood pressure
- Kidney or liver disease
- Long-term back problem
- Long-term mental health problem
- Long-term neurological problem
- Another long-term condition
- None of these conditions
- I would prefer not to say

*Note: Learning difficulty used to be presented as an option in the above list but was removed from the 2015/16 GPPS onwards as it is generally not considered a long-term condition.*

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

**Calculation**

**Denominator**
The denominator is the weighted count of responses from all people who identify themselves as having a long-term condition:

$$\Sigma_k(wt_{newk})$$
where $k = 1, \ldots, p$ are respondents with a long-term condition.

**Numerator**

Health-related quality of life is measured using the EQ-5D™ instrument which asks respondents to rate their health in five different areas. The ratings are collected through the following question in the survey:

*By placing an (×) in one box in each group below, please indicate which statements best describe your own health state today.*

The possible responses are:

**Mobility**
- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

**Self-Care**
- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself
- I am unable to wash or dress myself

**Usual Activities (e.g. work, study, housework, family or leisure activities)**
- I have no problems doing my usual activities
- I have slight problems doing my usual activities
- I have moderate problems doing my usual activities
- I have severe problems doing my usual activities
- I am unable to do my usual activities

**Pain / Discomfort**
- I have no pain or discomfort
- I have slight pain or discomfort
- I have moderate pain or discomfort
• I have severe pain or discomfort
• I have extreme pain or discomfort

Anxiety / Depression
• I am not anxious or depressed
• I am slightly anxious or depressed
• I am moderately anxious or depressed
• I am severely anxious or depressed
• I am extremely anxious or depressed

The answers to these questions are converted into an index by applying a formula that attaches values (also called weights) to each of the levels in each dimension. The weights are based on an empirical study, which asked people to quantify the extent to which they would sacrifice quantity of life in order to gain improvements in quality of life, at various states of health (see Dolan et al\(^1\) and Szende, Oppe and Devlin\(^2\) for details).

Individual EQ-5D™ index scores range between -0.594 and 1.000. The highest value is assigned to patients who report the best possible health state for each of the five domains. The numerator is the sum of the weighted EQ-5D™ index values for all responses from people who identify themselves as having a long-term condition.

This is calculated as: \[ \sum_i (EQ - 5D^TM \times wt_{new_i}) \]
where \( i = 1, \ldots, m \) are respondents who identify themselves as having a long-term condition.

2011/12 data are based on the EQ-5D-3L™ instrument, which provided respondents with three possible answers under each of the five domains. From 2012/13 onwards, the EQ-5D-3L™ was replaced with the EQ-5D-5L™ instrument which provides respondents with five possible answers under each domain as shown on the previous page.

Whilst preference weights for the new instrument are under development, a crosswalk to translate 3L index values into 5L index values has been devised. Details of the crosswalk methodology and results can be found on the EuroQol website:


EQ-5D™ is a registered trademark of EuroQol. Further details are available from http://www.euroqol.org.

EuroQol Group gave written permission to the Department of Health on 2 May 2011 to use the EQ-5D™ questions only in this format (without the visual analogue scale) for the GP Patient Survey and are happy for it to be referred to as EQ-5D™.

Weighting
A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (wt_new). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme is provided in the survey’s technical annex which can be found using the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

https://gp-patient.co.uk/weighted-data

Standardisation
The indicator values are directly standardised. The directly age and gender standardised mean EQ-5D™ score is the score a standard population would have if that population were to experience the age and gender specific scores of the subject population.

The directly standardised score (DSS) is given by:

$$DSS = \frac{1}{\sum w_i} \times \sum \frac{w_i O_i}{n_i}$$

where:

$O_i$ is the observed number of events in the local or subject population in age and gender group i (sum of weighted EQ-5D™ scores in the respective age and gender group for all respondents who identify themselves as having a long-term condition)

$n_i$ is the number of individuals in the local or subject denominator population in age and gender group i (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents who identify themselves as having a long-term condition)

$w_i$ is the number of individuals in the reference or standard population in age and gender group i (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents to the GPPS)
The standard population used for the direct standardisation method are all persons who responded to the GP Patient Survey in the respective financial year. The age groups used in the calculation are 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

**Contextual Information**

A contextual indicator showing the average health status score for all GP Patient Survey respondents at national level and for each of the breakdowns is calculated. This information aims to aid the interpretation by providing comparison of the health-related quality of life for people who identify themselves as having a long-term condition to the whole GP Patient Survey population.

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion, deprivation and number of long-term conditions as the number of surveys sent out cannot be determined at these levels.

**Health inequality (area deprivation)**

Once the underlying indicator values have been generated for each deprivation decile a set of summary measures describing the extent of health inequality is calculated.

The slope index of inequality (SII) is a measure of the social gradient in health related quality of life, i.e. how much this varies with deprivation. It takes account of health inequalities across the range of deprivation deciles and summarises this in a single number. This represents the range in health related quality of life across the social gradient from most to least deprived, based on a statistical analysis of the relationship between health related quality of life and deprivation across all deprivation deciles.

An SII value of 0.150 in the context of this indicator shows that the range in average health-related quality of life score for those with a long term condition across the social gradient from most to least deprived is 0.150. Reducing the SII value is desirable, a value of zero indicates equality.

The SII is calculated using population-weighted linear regression. To allow for differences in population size between deprivation deciles, each is given a rank score based on the midpoint of its range in the cumulative distribution of the population. The deciles are first ordered from most deprived to least deprived. If decile 1 contains 12% of the population, its rank score would be 12/2=6. If decile 2 includes 10% of the population, its rank score would be 12+(10/2)=17. The average EQ-5D™ score is plotted against this rank score and a population-weighted regression line is fitted to the data by the least squares method. The SII is the gradient of the resulting fitted line.

The calculation of the SII is performed using the inequalities calculation tool supplied by Public Health England.

Explicitly, the SII is calculated as:

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\[ SII = \frac{\sum wxy - (\sum wx \cdot \sum wy)}{\sum wx^2 - (\sum wx)^2} \]

Where:

- \( w \) is the percentage of the population in the deprivation group
- \( x \) is the cumulative proportion of the population at the mid-point of the deprivation group
- \( y \) is the indicator value of the deprivation group

The 95% confidence interval for the SII is given by

\[ CI = SII \pm t_{n-2}(0.975) \cdot \sigma_{SII} \]

Where

- \( n \) is the number of deprivation groups
- \( t_{n-2}(0.975) \) represents the inverse value of the t distribution with \( n-2 \) degrees of freedom for a probability of 0.975
- \( \sigma_{SII} \) is the standard error of the SII, given by

\[ \sigma_{SII} = \sqrt{\frac{1}{n-2} \cdot \frac{\sum w(y - \hat{y})^2}{\sum wx^2 - (\sum wx)^2}} \]

Where

- \( n \) is the number of deprivation groups
- \( w \) is the percentage of the population in the deprivation group
- \( x \) is the cumulative proportion of the population at the mid-point of the deprivation group
- \( y \) is the indicator value
- \( \hat{y} \) is the predicted \( y \) value calculated as

\[ \hat{y} = SII \cdot x + b \]

Where \( b \) is the intercept of the regression line, calculated as:

\[ b = \frac{(\sum wx^2 \cdot \sum wy) - (\sum wx \cdot \sum wxy)}{\sum wx^2 - (\sum wx)^2} \]

The SII measures the absolute extent of difference in health related quality of life for those with a long term condition between the most and least deprived deciles. The SII is related to the mean health score of the population. For example, if health scores for all deprivation deciles increased by 10 per cent, then the SII would increase by 10 per cent, i.e. the absolute difference between the most and least deprived decile has widened.

The Relative Index of Inequality (RII) provides a different perspective on the level of health inequality by considering how the level of health inequality compares with the overall level of the indicator.
In the example above, where all values increase by 10 per cent, the RII would remain constant, indicating that although there is a growing inequality it is the case that the extent of the inequality is stable when compared to the mean health score.

An increase in the RII value indicates that the extent of the inequality is increasing as a proportion of the overall indicator value. A reduction of the RII over time is therefore desirable. The relative index is calculated as the slope index divided by the mean weighted indicator value ($Y$):

$$RII = \frac{SII}{wY}$$

Where

- $w$ is the percentage of the population in the deprivation group
- $y$ is the indicator value

The confidence intervals of the RII are calculated from the SII confidence intervals as:

$$RII CI lower = \frac{CI lower}{wY}$$

$$RII CI upper = \frac{CI upper}{wY}$$

**Presentation**

**Breakdowns**

**Time periods**
Annual data from 2011/12

**Demographic**
10-year age bands from 18 - 24 to 85 and over
Gender (Males and females)
Ethnicity
Sexual orientation
Religion
Deprivation deciles (from 1 – most deprived to 10 – least deprived)
Number of long-term conditions (One to four plus)

**Geographic**
England
Lower tier local authority
Upper tier local authority
Region
Slope index of inequality
Relative index of inequality

**Disclosure control**

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Local authority</th>
<th>Age band</th>
<th>Gender</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Standard population</th>
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<td>X</td>
<td>18 to 24</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Female</td>
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<td>5.0</td>
<td>30,000</td>
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<tr>
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<td>X</td>
<td>35 to 44</td>
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<td>65 to 74</td>
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<td>0.0</td>
<td>30,000</td>
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<td>45 to 54</td>
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<td>40,000</td>
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<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Male</td>
<td>8.7</td>
<td>16.3</td>
<td>45,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>65 to 74</td>
<td>Male</td>
<td>4.0</td>
<td>8.7</td>
<td>35,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>75 to 84</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>85 or over</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>10,000</td>
</tr>
</tbody>
</table>

As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.
• Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.

• Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.

• When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.
Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Respective financial year</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>January to March for the respective financial year (July to March for years prior to 2016/17)</td>
</tr>
<tr>
<td>Breakdown</td>
<td>England, gender, age, ethnicity, sexual orientation, religion, deprivation decile, lower tier local authority, upper tier local authority, region, number of long-term conditions</td>
</tr>
<tr>
<td>Level</td>
<td>Level of breakdown</td>
</tr>
<tr>
<td>Level description</td>
<td>Description of level of breakdown</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Directly standardised mean health status score for individuals who are reporting that they have a long-term condition</td>
</tr>
<tr>
<td>Numerator</td>
<td>Sum of weighted EQ-5D™ value</td>
</tr>
<tr>
<td>Denominator</td>
<td>Sum of weighted response (wt_new)</td>
</tr>
<tr>
<td>Average health status score for all GP Patient Survey respondents</td>
<td>Directly standardised mean health status score for all GP Patient Survey respondents</td>
</tr>
<tr>
<td>Survey response rate</td>
<td>Unweighted percentage of surveys returned</td>
</tr>
<tr>
<td>SII</td>
<td>Slope Index of Inequality</td>
</tr>
<tr>
<td>CI Lower – SII</td>
<td>95% lower confidence interval of SII</td>
</tr>
<tr>
<td>CI Upper - SII</td>
<td>95% upper confidence interval of SII</td>
</tr>
<tr>
<td>RII</td>
<td>Relative Index of Inequality</td>
</tr>
<tr>
<td>CI Lower – RII</td>
<td>95% lower confidence interval of RII</td>
</tr>
<tr>
<td>CI Upper - RII</td>
<td>95% upper confidence interval of RII</td>
</tr>
</tbody>
</table>
2.1 Proportion of people feeling supported to manage their condition

Indicator assurance

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>July 2013, January 2014 (recommended based on direct standardisation methodology)</td>
</tr>
<tr>
<td>Indicator Governance Board (IGB) assured</td>
<td>April 2014</td>
</tr>
</tbody>
</table>

Overview

Indicator title
2.1 Proportion of people feeling supported to manage their long-term condition

Indicator family name
NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Ensuring people feel supported to manage their condition

Outcome sought
People with long-term conditions feel supported to manage their condition.

Detailed Descriptor

Plain English description
This indicator measures the degree to which people with health conditions that are expected to last for a significant period of time feel they have had sufficient support from relevant services and organisations to manage their condition. Patients are encouraged to consider all services and organisations, which support them in managing their condition, and not just health services.

Technical description
The directly standardised proportion of people with a long-term health condition who report having had enough support from local services or organisations to help manage their condition, in the last six months. Patients are asked to consider all services and organisations, not just health services. This is expressed as a percentage.
Data sources

GP Patient Survey (GPPS) from Ipsos MORI (http://www.gp-patient.co.uk) - Official Statistics

Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.

Data is available 3 to 4 months after the end of the financial year.

Construction

Calculation methodology

Introduction

Indicator 2.1 measures the percentage of people with long-term conditions who feel supported to manage their condition. The indicator is based on a very large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years’ survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number and they have been registered with a GP in England continuously for six months or longer. From 2018 the survey covers patients aged 16 and over. However, for the purpose of this indicator, only those aged 18 and over are included in line with previous years. Details regarding eligibility, participation and sampling for each survey are available in a technical annex from the link in the data sources section.

Data filters

Data are filtered based on questions from the GP Patient Survey, to isolate those who report one or more long-term conditions. These questions changed substantially in the 2017/18 survey, as did the list of health conditions, meaning that the results for 2017/18 are no longer comparable with previous years. Respondents are identified as having a long-term condition if they answer ‘Yes’ to the following question:

Do you have any long-term physical or mental health conditions, disabilities or illnesses?

- Yes
- No
- Don’t know/can’t say
- I would prefer not to say

If respondents fail to acknowledge their long-term condition in this question (those who answer ‘No’, ‘Don’t know/can’t say’ or ‘I would prefer not to say’) but tick a condition in the next question, they are also classed as having a long-standing health condition:

Which, if any, of the following long-term conditions do you have? Please put an x in all the boxes that apply to you

- Alzheimer’s disease or other cause of dementia
- Arthritis or ongoing problem with back or joints
NHS Outcomes Framework: 2.1 – Proportion of people feeling supported to manage their condition

- Blindness or partial sight
- A breathing condition such as asthma or COPD
- Cancer (diagnosis or treatment in the last 5 years)
- Deafness or hearing loss
- A developmental disability such as autism or ADHD
- Diabetes
- A heart condition such as angina or atrial fibrillation
- High blood pressure
- Kidney or liver disease
- A learning disability
- A mental health condition
- A neurological condition, such as epilepsy
- A stroke (which affects your day to day life)
- Another long-term condition or disability

Note: “Learning difficulty” used to be presented as an option in the above list but was removed from the 2015/16 GPPS onwards. “Learning disability” has been added to the list in 2017/18.

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Further only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

Calculation

Numerator

The numerator is based on answers to the following question from the GP Patient Survey:

In the last 12 months, have you had enough support from local services or organisations to help you to manage your long-term condition (or conditions)? Please think about all services and organisations, not just health services.

The possible responses to the question are:

- Yes, definitely
- Yes, to some extent
- No
- I haven’t needed support
- Don’t know/can’t say
Respondents who answer ‘Yes, to some extent’ are deemed to feel half as supported as respondents who answer ‘Yes, definitely’. Therefore, this group of responses is weighted by 0.5 when calculating the numerator.

Given the data filter above, the numerator is therefore calculated as:

$$\sum_{i} (wt_{new_i} \times 1) + \sum_{j} (wt_{new_j} \times 0.5)$$

where $i = 1, \ldots, m$ are respondents with a long-term condition who answer ‘Yes, definitely’; and $j = 1, \ldots, n$ are respondents with a long-term condition who answer ‘Yes, to some extent’.

**Denominator**

The denominator is the weighted count of respondents who answer ‘Yes, definitely’ OR ‘Yes, to some extent’ OR ‘No’ to the question in the numerator section:

$$\sum_{k} (wt_{new_k} \times 1)$$

where $k = 1, \ldots, p$ are respondents with a long-term condition who answer ‘Yes, definitely’ OR ‘Yes, to some extent’ OR ‘No’.

**Weighting**

A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias ($wt_{new}$). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme can be found in the survey’s technical annex from the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

https://gp-patient.co.uk/weighted-data

**Standardisation**

The indicator values are directly standardised. The directly age- and gender-standardised value is the value a standard population would have if that population were to experience the age- and gender specific values of the subject population.

The directly standardised percentage (DSP) is given by:

$$DSP = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i} \times 100$$
where:

\[ O_i \] is the observed number of events in the local or subject population in age and gender group \( i \)

\[ n_i \] is the number of individuals in the local or subject denominator population in age and gender group \( i \)

\[ w_i \] is the number of individuals in the reference or standard population in age and gender group \( i \)

The standard population used for the direct method are all persons who responded to the GP Patient Survey in the respective financial year. The age groups used in the calculation are derived from question 55 of the survey (2017/18): 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

**Contextual Information**

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion, deprivation and number of long-term conditions as the number of surveys sent out cannot be determined at these levels.

**Presentation**

**Breakdowns**

**Time periods**

Annual data from 2011/12

**Demographic**

10-year age bands from 18 - 24 to 85 and over

Gender (Males and females)

Ethnicity

Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)

Number of long-term conditions (One to four plus)

**Geographic**

England
Lower tier local authority
Upper tier local authority
Region

**Disclosure control**

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don’t have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Local authority</th>
<th>Age band</th>
<th>Gender</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Standard population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>X</td>
<td>18 to 24</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Female</td>
<td>2.5</td>
<td>5.0</td>
<td>30,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>35 to 44</td>
<td>Female</td>
<td>12.8</td>
<td>35.6</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>45 to 54</td>
<td>Female</td>
<td>15.7</td>
<td>38.5</td>
<td>40,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Female</td>
<td>14.7</td>
<td>40.1</td>
<td>45,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>65 to 74</td>
<td>Female</td>
<td>8.5</td>
<td>20.2</td>
<td>35,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>75 to 84</td>
<td>Female</td>
<td>2.3</td>
<td>8.9</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>85 or over</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>10,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>18 to 24</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>30,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>35 to 44</td>
<td>Male</td>
<td>15.6</td>
<td>34.7</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>45 to 54</td>
<td>Male</td>
<td>20.1</td>
<td>45.9</td>
<td>40,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Male</td>
<td>8.7</td>
<td>16.3</td>
<td>45,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>65 to 74</td>
<td>Male</td>
<td>4.0</td>
<td>8.7</td>
<td>35,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>75 to 84</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>85 or over</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>10,000</td>
</tr>
</tbody>
</table>

As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.
- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.

- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.

- When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

**Excel and CSV output**

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Respective financial year</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>January to March for the respective financial year (July to March for years prior to 2016/17)</td>
</tr>
<tr>
<td>Breakdown</td>
<td>England, gender, age, ethnicity, sexual orientation, religion, deprivation decile, lower tier local authority, upper tier local authority, region, number of long-term conditions</td>
</tr>
<tr>
<td>Level</td>
<td>Level of breakdown</td>
</tr>
<tr>
<td>Level description</td>
<td>Description of level of breakdown</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Weighted percentage of people who feel supported to manage their long-term condition</td>
</tr>
<tr>
<td>Numerator</td>
<td>Sum of weighted count of respondents with a long-term condition who answer “Yes, to some extent” to Q38 multiplied by 0.5 and sum of weighted count of respondents with a long-term condition who answer “Yes, definitely” to Q38 multiplied by 1</td>
</tr>
<tr>
<td>Denominator</td>
<td>Sum of weighted count of responses with a long-term condition who answer “Yes, definitely” or “Yes, to some extent” or “No” to Q38</td>
</tr>
<tr>
<td>Survey response rate</td>
<td>Unweighted percentage of surveys returned</td>
</tr>
</tbody>
</table>
2.2 Employment of people with long-term conditions

Indicator assurance

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>June 2011</td>
</tr>
<tr>
<td>Indicator Governance Board (IGB) assured</td>
<td>December 2011</td>
</tr>
</tbody>
</table>

Overview

Indicator title
2.2 Employment of people with long-term conditions

Indicator family name
NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions
Improvement area – Improving functional ability in people with long-term conditions

Outcome sought
Improved employment rates for people with long-term conditions.

Detailed Descriptor

Plain English description
The indicator measures the difference between:

a) the percentage of people in the general working age population who are in employment, and

b) the percentage of people of working age with a long-term condition who are in employment.

Technical description
The percentage point difference between the rate of employment in the general working age population (aged 16-64) and the rate of employment amongst those working age adults self-reporting a long-term condition. Both component employment rates are reported alongside the indicator.

Alignment with other Outcome Frameworks
Shared with Public Health Outcomes Framework Indicator 1.08i
Data sources

Labour Force Survey (LFS), published by the Office for National Statistics (ONS) - National Statistics

Data are released quarterly approximately three months after the end of the relevant quarter. The data are used in the ONS Labour Market statistical bulletins. The bulletin, data and methodology for the latest release can be found at the below link:

https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/previousReleases

Construction

Calculation methodology

Introduction

The indicator is given by the difference between the employment rate for all people of working age in England and the employment rate for people of working age who report a long-term condition. Three figures are reported:

1. The employment rate for all people;
2. The employment rate for people with a long-term condition;
3. The gap in employment rates between those with a long-term condition and the total population (1 - 2).

The indicator value is the last of these three figures.

Please note that the definition of each LFS variable used to construct indicator 2.2 is set out in appendix 1. For clarity, LFS variable names are written in upper case throughout.

All LFS data are weighted by person-level weights. The following table shows which weighting variables have been used for which data points.

<table>
<thead>
<tr>
<th>Data Points</th>
<th>Weighting Year</th>
<th>Weighting Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2006 - Q4 2010</td>
<td>2010</td>
<td>PWT10</td>
</tr>
<tr>
<td>Q1 2011 - Q2 2014</td>
<td>2011</td>
<td>PWT11</td>
</tr>
<tr>
<td>Q3 2014 - Q4 2015</td>
<td>2014</td>
<td>PWT14</td>
</tr>
<tr>
<td>Q1 2016 - Q4 2016</td>
<td>2016</td>
<td>PWT16</td>
</tr>
<tr>
<td>Q1 2017 - present</td>
<td>2017</td>
<td>PWT17</td>
</tr>
</tbody>
</table>

Data filters

Data are filtered out if the respondent’s country of residence is not England (COUNTRY≠1).
**Calculation**

**Employment rate for the general working age population**

**Denominator**

Number of people who are of working age:
- MF1664 = 1 (respondent is of working age)

**Numerator**

Number of people who are of working age:
- MF1664 = 1 (respondent is of working age)

AND
- INECAC05 = 1, 2, 3, or 4 (respondent is either employee (1), self-employed (2), government employment & training programmes (3), or unpaid family worker (4). This is the International Labour Organisation (ILO) definition of basic economic activity.

**Employment rate for people with a long-term condition**

**Denominator**

Number of people with a long-term condition of working age:
- LNGLST = 1 (the respondent has a health problem or disabilities that they expect will last for more than a year)

Note: LNGLIM was used prior to 2013 Q2

AND
- MF1664 = 1 (respondent is of working age)

**Numerator**

Number of people with a long-term condition in employment and of working age:
- LNGLST = 1 (the respondent has a health problem or disabilities that they expect will last for more than a year)

Note: LNGLIM was used prior to 2013 Q2

AND
- INECAC05 = 1, 2, 3, or 4 (respondent is either employee (1), self-employed (2), government employment & training programmes (3), or unpaid family worker (4). This is the ILO definition of basic economic activity.

AND
- MF1664 = 1 (respondent is of working age)

**Difference between the employment rate of the general working age population and employment rate of people with a long-term condition**

Employment rate of population - Employment rate of people with a long-term condition
Breakdown variables

The following LFS variables were used to disaggregate the England-level figures:

1. Breakdown Gender
   Field Name SEX

2. Breakdown Age (banded)
   Field Name AGE

3. Breakdown Ethnicity
   Field Name ETH01 to end 2010 and then replaced by ETH11EW.

4. Breakdown Region (formerly Government Office Regions)
   Field Name GOVTOF

5. Breakdown Unitary Authority / Local Area
   Field Name UALA

6. Breakdown NS-SEC category
   Field Name NSEC1M10

7. Breakdown Religion
   Field Name RELIG to end 2010 and then replaced by RELIGE

Presentation

Breakdowns

Time periods
Quarterly data (calendar years) from 2006 onwards.

Demographic

Gender: Male and female from 2006
Age: 16 to 19 then 5-year age band from 20 to 24 to 60 to 64 from 2006
Ethnicity: Ethnicity breakdown from 2006
NS-SEC category: NS-SEC category breakdown from 2006
Religion: Religion breakdown from 2006

Geographic

England: England level from 2006
Region: Region level breakdown from 2006
Unitary authority / local area: Unitary authority / local area level breakdown from 2006
Disclosure control

Statistical disclosure control is applied to the LFS data where small sample sizes are an issue by the data provider (ONS) before the data are received. Any estimates based on a sample size of 1 or 2 are suppressed and secondary suppression is carried out where only one value is suppressed within a group or if only one unitary authority / local area is suppressed within a region.

Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Year of coverage</td>
</tr>
<tr>
<td>Quarter</td>
<td>Quarter of coverage</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>Period of coverage</td>
</tr>
<tr>
<td>Person level weight used</td>
<td>Year of person level weights used to calculate employment rates</td>
</tr>
<tr>
<td>Breakdown</td>
<td>England, gender, age, ethnicity, region, unitary authority / local area, NS-SEC category, religion</td>
</tr>
<tr>
<td>Level</td>
<td>A further description of breakdown</td>
</tr>
<tr>
<td>Employment rate of people with long-term condition</td>
<td>See definition in calculation</td>
</tr>
<tr>
<td>Employment rate of population</td>
<td>See definition in calculation</td>
</tr>
<tr>
<td>Indicator value</td>
<td>The difference in employment rate between England population and people with a long-term condition</td>
</tr>
<tr>
<td>Long-term condition numerator</td>
<td>Number of people with long-term conditions in employment</td>
</tr>
<tr>
<td>Long-term condition denominator</td>
<td>Total number of people with long-term conditions</td>
</tr>
<tr>
<td>Population numerator</td>
<td>Total number of people in employment</td>
</tr>
<tr>
<td>Population denominator</td>
<td>Total number of people in the group</td>
</tr>
</tbody>
</table>
2.3.i Unplanned hospitalisation for chronic ambulatory care sensitive conditions

Overview

Indicator title
2.3.i Unplanned hospitalisation for chronic ambulatory care sensitive conditions

Indicator family name
NHS Outcomes Framework - Domain 2: Enhancing quality of life for people with long-term conditions
Improvement area – Reducing time spent in hospital by people with long-term conditions

Outcome sought
Improved health status for people with chronic ambulatory care sensitive conditions.

Detailed Descriptor
Plain English description
Indicator 2.3.i measures the number of times people with specific long-term conditions, which should not normally require hospitalisation, are admitted to hospital in an emergency. These conditions include, for example, diabetes, convulsions and epilepsy, and high blood pressure.

Technical description
The indirectly standardised rate, per 100,000 population, of emergency admissions for chronic ambulatory care sensitive conditions in the respective financial year or quarter of the financial year for people of all ages.

Data sources

Denominator
Numerator
Hospital Episode Statistics (HES) Admitted Patient Care (APC), provided by NHS Digital – National Statistics

Final annual and quarterly HES data are usually released in the November following the financial year-end.

Construction
Calculation methodology
Introduction
This indicator measures the rate of emergency hospital admissions per 100,000 population for patients with long-term ambulatory care sensitive conditions. The numerator is given by the number of finished and unfinished admission episodes, excluding transfers, for patients of all ages with an emergency method of admission and with a primary diagnosis of an ACS condition as detailed below. A data period of three months is used to produce each of the quarterly outputs. The rate is indirectly age and gender standardised to the reference year 2012/13.

Data filters
See appendix 2 for descriptions of the conditions included in indicator 2.3.i.

The data fields and filters that are used are as follows. Details of HES fields and classifications are available in the HES Data Dictionary (see https://digital.nhs.uk/data-services/hospital-episode-statistics/data-dictionary).

1. Field Name: DIAG_3_01, DIAG_4_01, DIAG_3_CONCAT
   Conditions: Any of (a) to (i) are true. Defined as follows:

   a) DIAG_4_01 is equal to either: B180, B181
      AND
      DIAG_3_CONCAT does not contain: D57
      [where DIAG_3_CONCAT is a concatenated field containing the values of all 20 diagnosis fields separated by commas. This condition excludes episodes with a subsequent diagnosis of D57 (Sickle-cell disorders)].

   b) DIAG_3_01 is equal to J45
      OR
      DIAG_4_01 is equal to J46X.

   c) (DIAG_4_01 is equal to any of: I110, J81X, I130
      OR
      DIAG_3_01 is equal to I50)
      AND
NHS Outcomes Framework: 2.3.i – Unplanned hospitalisation for chronic ambulatory care sensitive conditions

(OPERTN_3_CONCAT does not contain any of (K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71)

**OR** OPERTN_3_CONCAT is missing

[where OPERTN_3_CONCAT is a concatenated field containing the values of all 24 operation/procedure fields, separated by commas]

d) **DIAG_3_01** is equal to any of: E10, E11, E12, E13, E14.

e) **DIAG_3_01** is equal to any of: J41, J43, J44

**OR**

**DIAG_4_01** is equal to either of: J42X, J47X

**OR**

(DIAG_3_01 is equal to J20 **AND** DIAG_3_CONCAT contains (J41, J42, J43, J44, J47)

f) **DIAG_3_01** is equal to either of: I20, I25

**AND**

(OPERTN_3_CONCAT does not contain any of (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, V, W, X0, X1, X2, X4, X5)

**OR** OPERTN_3_CONCAT is missing)

g) **DIAG_3_01** is equal to either of: D51, D52

**OR**

**DIAG_4_01** is equal to any of: D501, D508, D509.

h) **DIAG_4_01** is equal to either of: I10X, I119

**AND**

(OPERTN_3_CONCAT does not contain any of (K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71)

**OR** OPERTN_3_CONCAT is missing)

i) **DIAG_3_01** is equal to any of: G40, G41, I48, F00, F01, F02, F03

**Rationale:** These fields give the primary diagnosis of the patient in the episode of interest.

2. **Field Name: STARTAGE**

**Conditions:** Is between (inclusive): 0 and 120

**OR**

Is between (inclusive): 7001 and 7007 (for babies)

**Rationale:** This field describes the age of the patient at the start of their episode of care. For this indicator all ages are considered.
3. **Field Name: ADMIMETH**
   **Conditions:** Is equal to any of: 21, 22, 23, 24, 25, 28, 2A, 2B, 2C or 2D
   (25, 2A, 2B, 2C and 2D are valid from April 2013 and replace 28)
   **Rationale:** This restricts the data to emergency admissions only.

4. **Field Name: EPISTAT**
   **Conditions:** Is equal to either of: 1 or 3
   **Rationale:** This includes both finished and unfinished hospital episodes.

5. **Field Name: ADMIDATE**
   **Conditions:** Limited to admissions within the current financial year split by quarter.
   Quarter 1: 1st April to 30th June;
   Quarter 2: 1st July to 30th September;
   Quarter 3: 1st October to 31st December;
   Quarter 4: 1st January to 31st March.
   **Rationale:** Data are presented quarterly with an admission date within the quarter of interest.

6. **Field Name: SEX**
   **Conditions:** Is equal to either of: 1 or 2
   **Rationale:** Data are shown for males and females separately. Data for persons represent the sum of males and females and exclude the small number of records where sex was unknown or unspecified.

7. **Field Name: EPIORDER**
   **Conditions:** Is equal to: 1
   **Rationale:** This restricts the data to the first episode in a hospital spell.

8. **Field Name: ADMISORC**
   **Conditions:** Is not equal to any of: 51, 52, 53
   **Rationale:** This excludes transfers.

9. **Field Name: EPITYPE**
   **Conditions:** Is equal to: 1
   **Rationale:** This restricts the data to general episodes (excludes birth, delivery and mental health episodes).

10. **Field Name: CLAPPAT**
Conditions: Is equal to: 1

Rationale: This restricts the data to ordinary admissions (excludes day case, regular day/night attenders and mothers/babies using only delivery facilities).

11. Field Name: RESLADST (2003/04 to 2010/11)
RESLADST_ONS (2011/12 onwards)

Conditions: Is equal to a valid English local authority or equal to ‘U’

Rationale: This restricts the data to patients resident in England. ‘U’ represents ‘England unspecified’.

Calculation
Denominator
ONS mid-year population estimates (based on the 2011 Census)

Numerator
The number of finished and unfinished admission episodes, excluding transfers, for patients with an emergency method of admission and with a primary diagnosis of a chronic ambulatory care sensitive condition as shown in appendix 2.

Standardised admission ratios (SARs)
Counts by category firstly need to be broken down into age and gender groups. The age groups used are 0-4, 5-9, 10-14, 15-18, 19-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85-89 and 90+.

The SARs can then be calculated by dividing the sum of the observed number of admissions by the sum of the expected number of admissions for each category and converted into a ratio by multiplying it by 100:

\[
SAR = \frac{\sum O_i}{\sum E_i} \times 100 = \frac{\sum O_i}{\sum n_i \lambda_i} \times 100
\]

where:

- \( O_i \) is the observed number of events in the subject population in age and gender group \( i \) (i.e. the number of admissions for that group in a given year or quarter)
- \( E_i \) is the expected number of events in the subject population in age and gender group \( i \), that is, the expected number of events in that age and gender group if the population in that year/quarter had the same distribution as the reference population. It is calculated by multiplying the population of that group \( n_i \) by the crude age and gender-specific rate in the reference population \( \lambda_i \). This figure is then multiplied by 100 (for presentational purposes)
• \(ni\) is the number of individuals in the subject population in age- and gender group \(i\) (i.e. the number of individuals in that group in a given year or quarter)

• \(\lambda_i\) is the crude age- and gender specific rate in the standard population in age-and gender group \(i\) (i.e. the crude age- and gender specific rate for that age- and gender group in 2012, which is the reference year)

**Indicator value**

The indicator value is the indirectly standardised rate (ISR) of admissions per 100,000 population. It is standardised by age and gender to the reference year. The ISR is calculated using the crude rate of admissions for England for the reference year, multiplied by the SAR for the category, and multiplied by 1,000 to get a rate per 100,000 population. (Note that the SAR is expressed as a ratio, therefore the raw rate has already been multiplied by 100).

**SAR Confidence Intervals**

When calculating 95% confidence intervals for indirectly standardised ratios, it is assumed that the standard rates come from a population sufficiently large as to assume their sampling variance is negligible, and that the observed number of events \(O\) follows a Poisson distribution. Where the number of observed events is less than 500, the exact upper and lower limits for \(O\) are found from a look-up table and used to calculate the respective limits of the ratio. Where the number of observed events is 500 or more, confidence intervals are calculated using the method described by Goldblatt and Jones\(^4\). The lower and upper confidence limits for the SAR are denoted by SAR\(_{LL}\) and SAR\(_{UL}\).

For \(O < 500\):

\[
\text{SAR}\_\text{LL} = \frac{O_{UL}}{E} \times 100 \quad \text{SAR}\_\text{UL} = \frac{O_{UL}}{E} \times 100
\]

where:

\(\text{OLL/UL}\) are the exact lower and upper 95% confidence limits from a standard Poisson distribution table for the total number of observed events \(O\) in the subject population.

\(E\) is the total expected number of events in the subject population.

For \(O \geq 500\) and <900:

\[
\text{SAR}\_\text{LL} = \frac{0.96 + O - 1.96\sqrt{(O + 0.11)}}{E} \times 100 \\
\text{SAR}\_\text{UL} = \frac{1.94 + O + 1.96\sqrt{O + 0.96}}{E} \times 100
\]

For \(O \geq 900\):

ISR Confidence Intervals

The indirectly standardised rate upper and lower confidence intervals are calculated by multiplying the SAR upper and lower limits by the crude rate for the reference year.

Deprivation breakdown

The deprivation breakdowns for this indicator has been derived using Index of Multiple Deprivation (IMD) 2015 and 2019 scores (year dependent) based on 2011 lower super output area (LSOA) boundaries. These are published by the Department for Communities and Local Government (DCLG):


Presentation

Breakdowns

Time periods
Quarterly and annual data from 2003/04 Q1 for all breakdowns

Demographic
Gender - male and female
Age – person (by 5-year age band)

Geographic
Lower tier local authority – person
Upper tier local authority – person
Region - person

Other
Deprivation decile - person
Condition – person

\[
SAR_{\text{LL}} = \frac{0.962 + O - 1.9602\sqrt{O}}{E} \times 100
\]

\[
SAR_{\text{UL}} = \frac{1.94 + O + 1.96\sqrt{O} + 0.96}{E} \times 100
\]
Disclosure control

This indicator is calculated using HES data, following the HES Analysis Guide on suppression of small numbers. For 2017/18 data, new HES disclosure rules have been applied. For the Lower and Upper Tier Local Authority and Region breakdowns values based on counts between 1 and 7 are suppressed. All other values in the ‘Observed’ column are rounded to the nearest 5. Secondary suppression is not necessary using this method. Between 2013/14 and 2016/17 for the same breakdowns values based on counts between 1 and 5 were suppressed. Secondary suppression is then applied so that at least two sets of quarterly values are suppressed for each year and so that two sets of values are suppressed in each upper tier or region, where necessary. Prior to 2013/14 the same primary suppression was applied as for 2013/14 to 2016/17. Secondary suppression was applied so that at least 2 quarterly values were suppressed in each year. If only one local authority in a region was suppressed the regional value was also suppressed.

ONS population data were used for the denominator; the values were rounded to the nearest 100. The rounding was carried out after the indicator value was calculated.

Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Financial year</td>
</tr>
<tr>
<td>Quarter</td>
<td>Annual, quarter</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>Actual time period the data covers</td>
</tr>
<tr>
<td>Breakdown</td>
<td>England, gender, age band, local authority (lower and upper tier), region, deprivation decile, condition</td>
</tr>
<tr>
<td>Level</td>
<td>Detailed breakdown of each split – breakdown code</td>
</tr>
<tr>
<td>Level description</td>
<td>Further description of level/breakdown</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Indirectly standardised rate (ISR) per 100,000 population</td>
</tr>
<tr>
<td>Lower CI</td>
<td>ISR lower 95% confidence interval</td>
</tr>
<tr>
<td>Upper CI</td>
<td>ISR upper 95% confidence interval</td>
</tr>
<tr>
<td>Standardised ratio</td>
<td>Standardised admission ratio</td>
</tr>
<tr>
<td>Standardised ratio lower CI</td>
<td>Standardised admission ratio lower confidence interval</td>
</tr>
<tr>
<td>Standardised ratio upper CI</td>
<td>Standardised admission ratio upper confidence interval</td>
</tr>
<tr>
<td>Observed</td>
<td>Number of observed events (numerator)</td>
</tr>
<tr>
<td>Population</td>
<td>Population count (denominator)</td>
</tr>
<tr>
<td>Expected</td>
<td>Number of expected events</td>
</tr>
<tr>
<td>Percent unclassified</td>
<td>The percentage of records where there is no LSOA or LA code recorded – displayed for lower and upper tier local authority, region and deprivation decile breakdowns</td>
</tr>
</tbody>
</table>
2.3.ii Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s

Indicator assurance

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>April 2012</td>
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<tr>
<td>Indicator Governance Board (IGB) assured</td>
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</tr>
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Overview

Indicator title
2.3.ii Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s

Indicator family name
NHS Outcomes Framework - Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Reducing time spent in hospital by people with long-term conditions

Outcome sought
Improving the health status of those aged 0 to 18 who have asthma, diabetes or epilepsy.

Detailed Descriptor

Plain English description
This indicator measures how many times young people (aged 0 to 18 inclusive) who have asthma, diabetes or epilepsy are admitted to hospital in an emergency.

Technical description
The indirectly standardised rate, per 100,000 population, of emergency hospital admissions for young people with a primary diagnosis of asthma, diabetes or epilepsy in the respective financial year or quarter of the financial year.

Data sources

Denominator
Numerator
Hospital Episode Statistics (HES) Admitted Patient Care (APC), provided by NHS Digital – National Statistics

Final annual and quarterly HES data are usually released in the November following the financial year-end.

Construction
Calculation methodology

Introduction
This indicator measures the rate of emergency hospital admissions per 100,000 population for patients with asthma, diabetes and epilepsy. The numerator is given by the number of finished and unfinished admission episodes, excluding transfers, for patients under 19 years old with an emergency method of admission and with a primary diagnosis of asthma, diabetes or epilepsy as shown below. A data period of three months is used to produce each of the quarterly outputs. The rate is indirectly age and gender standardised to the reference year 2012/13.

Data filters
See appendix 3 for descriptions of the conditions included in indicator 2.3.ii.

The data fields and filters that are used are as follows. Details of HES fields and classifications are available in the HES Data Dictionary (see https://digital.nhs.uk/data-services/hospital-episode-statistics/data-dictionary).

1. Field Name: DIAG_3_01
   Conditions: Is equal to any of: J45, J46, E10, G40, G41
   Rationale: This gives the primary diagnosis of the patient.

2. Field Name: STARTAGE
   Conditions: Is between (inclusive): 0 and 18
   OR
   Is between (inclusive): 7001 and 7007 (for babies)
   Rationale: This field describes the age of the patient at the start of their episode of care. For this indicator only patients under the age of 19 are considered.

3. Field Name: ADMIMETH
   Conditions: Is equal to any of: 21, 22, 23, 24, 25, 28, 2A, 2B, 2C or 2D
   (25, 2A, 2B, 2C and 2D are valid from April 2013 and replace 28)
   Rationale: This restricts the data to emergency admissions only.
4. Field Name: EPISTAT
   Conditions: Is equal to either of: 1 or 3
   Rationale: This includes both finished and unfinished hospital episodes.

5. Field Name: ADMIDATE
   Conditions: Limited to admissions within the current financial year split by quarter.
   Quarter 1: 1st April to 30th June;
   Quarter 2: 1st July to 30th September;
   Quarter 3: 1st October to 31st December;
   Quarter 4: 1st January to 31st March.
   Rationale: Data are presented quarterly with an admission date within the quarter of interest.

6. Field Name: SEX
   Conditions: Is equal to either of: 1 or 2
   Rationale: Data are shown for males and females separately. Data for persons are the sum of males and females and exclude the small number of records where sex was unknown or unspecified.

7. Field Name: EPIORDER
   Conditions: Is equal to: 1
   Rationale: This restricts the data to the first episode in a hospital spell.

8. Field Name: ADMISORC
   Conditions: Is not equal to any of: 51, 52, 53
   Rationale: This excludes transfers.

9. Field Name: EPITYPE
   Conditions: Is equal to: 1
   Rationale: This restricts the data to general episodes (excludes birth, delivery and mental health episodes).

10. Field Name: CLASSPAT
    Conditions: Is equal to: 1
Rationale: This restricts the data to ordinary admissions (excludes day case, regular day/night attenders and mothers/babies using only delivery facilities).

11. Field Name: RESLADST (2003/04 to 2010/11)
RESLADST_ONS (2011/12 onwards)

Conditions: Is equal to a valid English local authority or equal to 'U'

Rationale: This restricts the data to patients resident in England. 'U' represents 'England unspecified'.

Calculation
Denominator
Resident population in England aged 0 to 18 inclusive, based on ONS mid-year population estimates (based on the 2011 Census).

Numerator
The number of finished and unfinished admission episodes, excluding transfers, for patients aged under 19 with an emergency method of admission and where asthma, diabetes or epilepsy was the primary diagnosis.

Standardised admission ratios (SARs)
Counts by category firstly need to be broken down into age and gender groups. The age groups used for this indicator are single years of age 0 to 18.

The SARs can then be calculated by dividing the sum of the observed number of admissions by the sum of the expected number of admissions for each category and converted into a ratio by multiplying it by 100:

\[
SAR = \frac{O}{E} \times 100 = \frac{\sum O_i}{\sum E_i} \times 100 = \frac{\sum O_i}{\sum n_i \lambda_i} \times 100
\]

where:

- \(O_i\) is the observed number of events in the subject population in age and gender group \(i\) (i.e. the number of admissions for that group in a given year or quarter)

- \(E_i\) is the expected number of events in the subject population in age and gender group \(i\), that is, the expected number of events in that age and gender group if the population in that year/quarter had the same distribution as the reference population. It is calculated by multiplying the number of individuals in that group \(n_i\) by the crude age-and gender-specific rate in the reference population \(\lambda_i\). This figure is then multiplied by 100 (for presentational purposes)
• \( n_i \) is the number of individuals in the subject population in age- and gender group \( i \) (i.e. the number of individuals in that group in a given year or quarter)

• \( \lambda_i \) is the crude age- and gender specific rate in the standard population in age-and gender group \( i \) (i.e. the crude age- and gender specific rate for that age- and gender group in 2012, which is the reference year)

**Indicator value**

The indicator value is the indirectly standardised rate (ISR) of admissions per 100,000 population. It is standardised by age and gender to the reference year. The ISR is calculated using the crude rate of admissions for England for the reference year, multiplied by the SAR for the category, and multiplied by 1,000 to get a rate per 100,000 population. (Note that the SAR is expressed as a ratio, therefore the raw rate has already been multiplied by 100).

**SAR Confidence Intervals**

When calculating 95% confidence intervals for indirectly standardised ratios, it is assumed that the standard rates come from a population sufficiently large as to assume their sampling variance is negligible, and that the observed number of events \( O \) follows a Poisson distribution. Where the number of observed events is less than 500, the exact upper and lower limits for \( O \) are found from a look-up table and used to calculate the respective limits of the ratio. Where the number of observed events is 500 or more, confidence intervals are calculated using the method described by Goldblatt and Jones\(^5\). The lower and upper confidence limits for the SAR are denoted by SAR\(_{LL}\) and SAR\(_{UL}\).

For \( O < 500 \):

\[
\text{SAR}_{LL} = \frac{O_{UL}}{E} \times 100 \\
\text{SAR}_{UL} = \frac{O_{UL}}{E} \times 100
\]

where:

\( O_{LL/UL} \) are the exact lower and upper 95% confidence limits from a standard Poisson distribution table for the total number of observed events \( O \) in the subject population.

\( E \) is the total expected number of events in the subject population.

For \( O \geq 500 \) and \( < 900 \):

\[
\text{SAR}_{LL} = \frac{0.96 + O - 1.96\sqrt{O + 0.11}}{E} \times 100 \\
\text{SAR}_{UL} = \frac{1.94 + O + 1.96\sqrt{O + 0.96}}{E} \times 100
\]

For \( O \geq 900 \):

ISR Confidence Intervals
The indirectly standardised rate upper and lower confidence intervals are calculated by multiplying the SAR upper and lower limits by the crude rate for the reference year.

Deprivation breakdown
The deprivation breakdowns for this indicator has been derived using Index of Multiple Deprivation (IMD) 2015 and 2019 scores (year dependent) based on 2011 lower super output area (LSOA) boundaries. These are published by the Department for Communities and Local Government (DCLG):


Presentation

Breakdowns

Time periods
Quarterly and annual data from 2003/04 Q1 for all breakdowns

Demographic
Gender - male and female
Age – person (by single year of age)

Geographic
Lower tier local authority – person
Upper tier local authority – person
Region - person

Other
Deprivation decile - person
Condition – person

\[
\begin{align*}
SAR_{LL} &= \frac{0.962 + O - 1.9602\sqrt{O}}{E} \times 100 \\
SAR_{UL} &= \frac{1.94 + O + 1.96\sqrt{O} + 0.96}{E} \times 100
\end{align*}
\]
Disclosure control

This indicator is calculated using HES data, following the HES Analysis Guide on suppression of small numbers. For 2017/18 data, new HES disclosure rules have been applied. For the Lower and Upper Tier Local Authority and Region breakdowns values based on counts between 1 and 7 are suppressed. All other values in the ‘Observed’ column are rounded to the nearest 5. Secondary suppression is not necessary using this method. Between 2013/14 and 2016/17 for the same breakdowns values based on counts between 1 and 5 were suppressed. Secondary suppression is then applied so that at least two sets of quarterly values are suppressed for each year and so that two sets of values are suppressed in each upper tier or region, where necessary. Prior to 2013/14 the same primary suppression was applied as for 2013/14 to 2016/17. Secondary suppression was applied so that at least 2 quarterly values were suppressed in each year. If only one local authority in a region was suppressed the regional value was also suppressed.

ONS population data were used for the denominator; the values were rounded to the nearest 100. The rounding was carried out after the indicator value was calculated.

Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Financial year</td>
</tr>
<tr>
<td>Quarter</td>
<td>Annual, quarter</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>Actual time period the data covers</td>
</tr>
<tr>
<td>Breakdown</td>
<td>England, gender, age band, local authority (lower and upper tier), region, deprivation decile, condition</td>
</tr>
<tr>
<td>Level</td>
<td>Detailed breakdown of each split – breakdown code</td>
</tr>
<tr>
<td>Level description</td>
<td>Further description of level/breakdown</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Indirectly standardised rate (ISR) per 100,000 population</td>
</tr>
<tr>
<td>Lower CI</td>
<td>ISR lower 95% confidence interval</td>
</tr>
<tr>
<td>Upper CI</td>
<td>ISR upper 95% confidence interval</td>
</tr>
<tr>
<td>Standardised ratio</td>
<td>Standardised admission ratio</td>
</tr>
<tr>
<td>Standardised ratio lower CI</td>
<td>Standardised admission ratio lower confidence interval</td>
</tr>
<tr>
<td>Standardised ratio upper CI</td>
<td>Standardised admission ratio upper confidence interval</td>
</tr>
<tr>
<td>Observed</td>
<td>Number of observed events (numerator)</td>
</tr>
<tr>
<td>Population</td>
<td>Population count (denominator)</td>
</tr>
<tr>
<td>Expected</td>
<td>Number of expected events</td>
</tr>
<tr>
<td>Percent unclassified</td>
<td>The percentage of records where there is no LSOA or LA code recorded – displayed for lower and upper tier local authority, region and deprivation decile breakdowns</td>
</tr>
</tbody>
</table>
2.4 Health-related quality of life for carers

Indicator assurance

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>July 2013, January 2014 (recommended based on direct standardisation methodology)</td>
</tr>
<tr>
<td>Indicator Governance Board (IGB) assured</td>
<td>November 2014</td>
</tr>
</tbody>
</table>

Overview

Indicator title
2.4 Health-related quality of life for carers

Indicator family name
NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions
Improvement area – Enhancing quality of life for carers

Outcome sought
Improved health-related quality of life of life for carers.

Detailed Descriptor
Plain English description
This indicator measures health-related quality of life for people who identify themselves as helping or supporting family members, friends, neighbours or others with their long-term physical or mental ill health/disability or because of problems related to old age. By health-related quality of life, we mean the extent to which people:

- have problems walking about;
- have problems performing self-care activities (washing or dressing themselves);
- have problems performing their usual activities (work, study etc.);
- have pain or discomfort; and
- feel anxious or depressed.

Technical description
The directly standardised average (mean) EQ-5D™ score for individuals reporting that they are carers, measured based on responses to the GP Patient Survey.
Alignment with other Outcomes Frameworks
Complementary to Adult Social Care Outcomes Framework Indicator 1D

Data sources
GP Patient Survey (GPPS) from Ipsos MORI (http://www.gp-patient.co.uk) – Official Statistics
Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.
As of February 2018, further updates for this indicator are currently to be confirmed.

Construction
Calculation methodology

Introduction
Indicator 2.4 measures health-related quality of life for people reporting that they are carers. The indicator is based on a very large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years’ survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for the survey are available in a technical annex from the link in the data sources section.

Data filters
Data are filtered based on the following question from the GP Patient Survey, to isolate those who identify themselves as a carer:

Do you look after, or give any help or support to family members, friends, neighbours or others because of either:
- long-term physical or mental health/disability, or
- problems related to old age?
Do not count anything you do as part of your paid employment

The possible responses are:
- No
- Yes, 1-9 hours a week
- Yes, 10-19 hours a week
- Yes, 20-34 hours a week
- Yes, 35-49 hours a week
• Yes, 50+ hours a week

People who answer ‘Yes …’ are assumed a carer, regardless of how many hours of care they provide. Those who answer otherwise are not considered in the calculation.

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Further only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

**Calculation**

**Denominator**
The denominator is the weighted count of responses from people who identify themselves as carers.

\[ \sum_{k} (wt_{new_{k}}) \]

where \( k = 1, \ldots, p \) are respondents who identify themselves as carers in the GP Patient Survey.

**Numerator**
Health-related quality of life for people who identify themselves as carers is measured using the EQ-5D™ instrument which asks respondents to rate their health in five different areas. The ratings are collected through the following question in the survey:

*By placing an (×) in one box in each group below, please indicate which statements best describe your own health state today.*

*The possible responses are:*

**Mobility**
- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

**Self-Care**
- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself
• I am unable to wash or dress myself

**Usual Activities (e.g. work, study, housework, family or leisure activities)**
• I have no problems doing my usual activities
• I have slight problems doing my usual activities
• I have moderate problems doing my usual activities
• I have severe problems doing my usual activities
• I am unable to do my usual activities

**Pain / Discomfort**
• I have no pain or discomfort
• I have slight pain or discomfort
• I have moderate pain or discomfort
• I have severe pain or discomfort
• I have extreme pain or discomfort

**Anxiety / Depression**
• I am not anxious or depressed
• I am slightly anxious or depressed
• I am moderately anxious or depressed
• I am severely anxious or depressed
• I am extremely anxious or depressed

The answers to these questions are converted into an index by applying a formula that attaches values (also called weights) to each of the levels in each dimension. The weights are based on an empirical study, which asked people to quantify the extent to which they would sacrifice quantity of life in order to gain improvements in quality of life, at various states of health (see Dolan et al\(^6\) and Szende, Oppe and Devlin\(^7\) for details).

Individual EQ-5D™ index scores range between -0.594 and 1.000. The highest value is assigned to patients who report the best possible health state for each of the five domains.

The numerator is the sum of the weighted EQ-5D™ index values for all responses from people who identify themselves as carers.


This is calculated as: \[ \sum_{i = 1}^{m} (EQ - 5D \times wt_{new_i}) \]

where \(i = 1, \ldots, m\) are respondents who identify themselves as carers.

2011/12 data are based on the EQ-5D-3L™ instrument, which provided respondents with three possible answers under each of the five domains. From 2012/13 onwards, the EQ-5D-3L™ was replaced with the EQ-5D-5L™ instrument which provides respondents with five possible answers under each domain as shown on the previous page.

Whilst preference weights for the new instrument are under development, a crosswalk to translate 3L index values into 5L index values has been devised. Details of the crosswalk methodology and results can be found on the EuroQol website:


EQ-5D™ is a registered trademark of EuroQol. Further details are available from http://www.euroqol.org.

EuroQol Group gave written permission to the Department of Health on 2 May 2011 to use the EQ-5D™ questions only in this format (without the visual analogue scale) for the GP Patient Survey and are happy for it to be referred to as EQ-5D™.

**Weighting**

A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (\(wt_{new}\)). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme can be found in the survey’s technical annex which is available from the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

https://gp-patient.co.uk/weighted-data

**Standardisation**

The indicator values are directly standardised. The directly age- and gender-standardised mean EQ-5D™ score is the score a standard population would have if that population were to experience the age- and gender specific scores of the subject population.
The directly standardised score (DSS) is given by:

\[
DSS = \frac{1}{\sum_i w_i} \times \sum_i w_i O_i / n_i
\]

where:

- \(O_i\) is the observed number of events in the local or subject population in age and gender group \(i\) (Sum of weighted EQ-5D™ scores in the respective age and gender group for all respondents who identify themselves as carers)
- \(n_i\) is the number of individuals in the local or subject denominator population in age and gender group \(i\) (Sum of all weighted responses (wt_new) in the respective age and gender group for all respondents who identify themselves as carers)
- \(w_i\) is the number of individuals in the reference or standard population in age and gender group \(i\) (Sum of all weighted responses (wt_new) in the respective age and gender group for all respondents to the GP patient survey)

The standard population used for the direct method are all persons who responded to the GP Patient survey in the respective financial year. The age groups used in the calculation are: 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

**Contextual Information**

A contextual indicator showing the average health status score for all GP Patient Survey respondents at national level and for each of the breakdowns is calculated. This information aims to aid the interpretation by providing comparison of the health-related quality of life for people who identify themselves as carers to the whole GP Patient Survey population.

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion, deprivation and number of long-term conditions as the number of surveys sent out cannot be determined at these levels.

Additionally the distribution of carers by age and gender and the number of hours cared are shown for each of the survey periods where data are available.

**Presentation**

**Breakdowns**

**Time periods**

Annual data from 2011/12

**Demographic**

- Age bands (18 to 24 then 10-year bands from 25 to 85+)
- Gender (Male, female)
- Ethnicity
Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)

**Geographic**

England

Lower tier local authority

Upper tier local authority

Region

**Disclosure control**

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Local authority</th>
<th>Age band</th>
<th>Gender</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Standard population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>X</td>
<td>18 to 24</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Female</td>
<td>2.5</td>
<td>5.0</td>
<td>30,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>35 to 44</td>
<td>Female</td>
<td>12.8</td>
<td>35.6</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>45 to 54</td>
<td>Female</td>
<td>15.7</td>
<td>38.5</td>
<td>40,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Female</td>
<td>14.7</td>
<td>40.1</td>
<td>45,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>65 to 74</td>
<td>Female</td>
<td>8.5</td>
<td>20.2</td>
<td>35,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>75 to 84</td>
<td>Female</td>
<td>2.3</td>
<td>8.9</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>85 or over</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>10,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>18 to 24</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>30,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>35 to 44</td>
<td>Male</td>
<td>15.6</td>
<td>34.7</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>45 to 54</td>
<td>Male</td>
<td>20.1</td>
<td>45.9</td>
<td>40,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Male</td>
<td>8.7</td>
<td>16.3</td>
<td>45,000</td>
</tr>
</tbody>
</table>
As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.

- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.

- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.

- When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Respective financial year</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>July to September of previous year and January to March of following year for the respective financial year</td>
</tr>
<tr>
<td>Breakdown</td>
<td>January to March for the respective financial year (July to March for years prior to 2016/17)</td>
</tr>
<tr>
<td>Level</td>
<td>Level of breakdown</td>
</tr>
<tr>
<td>Level description</td>
<td>Description of level of breakdown</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Weighted average health status score for individuals who are reporting that they are carers</td>
</tr>
<tr>
<td>Numerator</td>
<td>Sum of weighted EQ-5D™ values</td>
</tr>
<tr>
<td>Denominator</td>
<td>Sum of weighted responses (wt_new)</td>
</tr>
<tr>
<td>Average health status</td>
<td>Weighted average health status score for all GP Patient Survey</td>
</tr>
<tr>
<td>Score for all GP Patient Survey respondents</td>
<td>respondents</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Survey response rate</td>
<td>Unweighted percentage of surveys returned</td>
</tr>
</tbody>
</table>
2.5.i Employment of people with mental illness (formerly indicator 2.5)

Indicator assurance

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>June 2011</td>
</tr>
<tr>
<td>Indicator Governance Board (IGB) assured</td>
<td>December 2011</td>
</tr>
</tbody>
</table>

Overview

Indicator title
2.5.i Employment of people with mental illness

Indicator family name
NHS Outcomes Framework - Domain 2: Enhancing quality of life for people with long-term conditions
Improvement area – Enhancing quality of life for people with mental illness

Outcome sought
Improved employment rates for people with mental illness.

Detailed Descriptor

Plain English description
The indicator measures the difference between:

a) the percentage of people in the general working age population who are in employment, and

b) the percentage of people of working age with a mental illness who are in employment.

Technical description
The percentage point difference between the rate of employment in the general working age population (aged 16-64) and the rate of employment amongst those working age adults self-reporting a mental illness. Both component employment rates are reported alongside the indicator.

Alignment with other Outcomes Frameworks
Complementary to Adult Social Care Outcomes Framework Indicator 1E and 1F
Complementary to Public Health Outcomes Framework Indicator 1.08.ii and iii
Data sources

Labour Force Survey (LFS), published by the Office for National Statistics (ONS) - National Statistics

Data are released quarterly approximately three months after the end of the relevant quarter. The data are used in the ONS Labour Market statistical bulletins. The bulletin, data and methodology for the latest release can be found at the below link:

https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/previousReleases

Construction

Calculation methodology

Introduction

The indicator is given by the difference between the employment rate for all people of working age in England and the employment rate for people of working age who report a mental illness. Three figures will be reported:

1. The employment rate for all people in England;
2. The employment rate for people with mental illness in England;
3. The gap in employment rates between those with mental illness and the total population (1 – 2).

Indicator 2.5.i is the last of these three figures.

Please note that the definition of each LFS variable used to construct indicator 2.5.i is set out in appendix 1. For clarity, LFS variable names are written in upper case throughout.

All LFS data are weighted by person-level weights. The following table shows which weighting variables have been used for which data points.

<table>
<thead>
<tr>
<th>Data Points</th>
<th>Weighting Year</th>
<th>Weighting Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2006 - Q4 2010</td>
<td>2010</td>
<td>PWT10</td>
</tr>
<tr>
<td>Q1 2011 - Q2 2014</td>
<td>2011</td>
<td>PWT11</td>
</tr>
<tr>
<td>Q3 2014 - Q4 2015</td>
<td>2014</td>
<td>PWT14</td>
</tr>
<tr>
<td>Q1 2016 - Q4 2016</td>
<td>2016</td>
<td>PWT16</td>
</tr>
<tr>
<td>Q1 2017 - present</td>
<td>2017</td>
<td>PWT17</td>
</tr>
</tbody>
</table>

Data filters

Data are filtered out if the respondent’s country of residence is not England (COUNTRY≠1).
Calculation

Employment rate for the general working age population

Denominator

Number of people who are of working age. An LFS respondent is included in the denominator if:

- $MF1664 = 1$ (respondent is of working age)

Numerator

Number of people of working age who are in employment. An LFS respondent is included in the numerator if:

- $INECAC05 = 1, 2, 3$ or $4$ (Respondent is either employee (1), self-employed (2), government employment & training programmes (3), or unpaid family worker (4). This is the ILO definition of basic economic activity.

  AND

- $MF1664 = 1$ (respondent is of working age)

Employment rate for people with mental illness

Denominator

Number of people with a mental illness of working age. An LFS respondent is included in the denominator if:

- $LNGLST = 1$ (the respondent has a health problem or disabilities that they expect will last for more than a year)

  Note: $LNGLIM$ was used prior to 2013 Q2

  AND

- $HEAL = 12, 14$ or $15$ (the respondent has depression, bad nerves or anxiety (12), severe or specific learning difficulties (mental handicap) (14) or mental illness or suffers from phobia, panics or other nervous disorders (15))

  AND

- $MF1664 = 1$ (respondent is of working age)

Numerator

Number of people with a mental illness in employment and of working age. An LFS respondent is included in the numerator if:

- $LNGLST = 1$ (the respondent has a health problem or disabilities that they expect will last for more than a year)

  Note: $LNGLIM$ was used prior to 2013.

  AND
• HEAL = 12, 14 or 15 (the respondent has depression, bad nerves or anxiety (12), severe or specific learning difficulties (mental handicap) (14) or mental illness or suffer from phobia, panics or other nervous disorders (15))
  AND
• INECA05 = 1, 2, 3 or 4 (respondent is either an employee (1), self-employed (2), in government employment & training programmes (3), or an unpaid family worker (4). This is the ILO definition of basic economic activity.
  AND
• MF1664 = 1 (respondent is of working age)

**Difference between employment rate of the general working age population and employment rate of people with mental illness**

Employment rate of population - Employment rate of people with mental illness

**Breakdown variables**

The following LFS variables were used to disaggregate the England-level figures:

1. Breakdown Gender  
   Field Name SEX
2. Breakdown Age (banded)  
   Field Name AGE
3. Breakdown Ethnicity  
   Field Name ETH01 to end 2010 and then replaced by ETH11EW.
4. Breakdown Region (formerly Government Office Regions)  
   Field Name GOVTOF
5. Breakdown Unitary Authority/Local Area  
   Field Name UALA
6. Breakdown NS-SEC category  
   Field Name NSECM10
7. Breakdown Religion  
   Field Name RELIG to end 2010 and then replaced by RELIGE
8. Breakdown Condition  
   Field Name Learning difficulty / disability: HEAL = 14 (Severe or specific learning difficulties (mental handicap))
   Mental illness: HEAL = 12 or 15 (the respondent has depression, bad nerves or anxiety (12) or mental illness, or suffer from phobia, panics or other nervous disorders (15))
**Presentation**

**Breakdowns**

**Time periods**
Quarterly data from 2006 for England

**Demographic**
Gender: Male and female from 2006
Age: 16 to 19 then 5-year age bands from 20 to 24 to 60 to 64 from 2006
Ethnicity: Ethnicity breakdown from 2006
NS-SEC category: NS-SEC category breakdown from 2006
Religion: Religion breakdown from 2006

**Geographic**
England: England level from 2006
Region: Region level breakdown from 2006
Unitary authority/local area: Unitary authority/local area level breakdown from 2006

**Other**
Breakdown by condition (learning disability and mental illness)

**Disclosure control**
Statistical disclosure control is applied to the LFS data where small sample sizes are an issue by the data provider (ONS) before the data are received. Any estimates based on a sample size of 1 or 2 are suppressed and secondary suppression is carried out where only one value is suppressed within a group or if only one unitary authority/local area is suppressed within a region.

**Excel and CSV output**

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Year of coverage</td>
</tr>
<tr>
<td>Quarter</td>
<td>Quarter of coverage</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>Period of coverage</td>
</tr>
<tr>
<td>Person level weight used</td>
<td>Year of person level weights used to calculate employment rates</td>
</tr>
</tbody>
</table>
## NHS Outcomes Framework: 2.5.i – Employment of people with mental illness

<table>
<thead>
<tr>
<th>Breakdown</th>
<th>England, gender, age, ethnicity, region, unitary authority/local area, NS-SEC category, religion, condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>A further description of breakdown</td>
</tr>
<tr>
<td>Employment rate of people with mental illness</td>
<td>See definition in calculation</td>
</tr>
<tr>
<td>Employment rate of population</td>
<td>See definition in calculation</td>
</tr>
<tr>
<td>Indicator value</td>
<td>The difference in employment rate between England population and people with a mental illness</td>
</tr>
<tr>
<td>Mental illness numerator</td>
<td>Number of people with a mental illness in employment and of working age</td>
</tr>
<tr>
<td>Mental illness denominator</td>
<td>Total number of people with a mental illness and of working age</td>
</tr>
<tr>
<td>Population numerator</td>
<td>Total number of people in employment and of working age</td>
</tr>
<tr>
<td>Population denominator</td>
<td>Total number of people who are of working age</td>
</tr>
</tbody>
</table>
2.6.i Estimated diagnosis rate for people with dementia

Indicator assurance

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>August 2012</td>
</tr>
<tr>
<td>Indicator Governance Board (IGB) assured</td>
<td>Not yet assured</td>
</tr>
</tbody>
</table>

Overview

Indicator title
2.6.i Estimated diagnosis rate for people with dementia

Indicator family name
NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions
Improvement area – Enhancing quality of life for people with dementia

Outcome sought
Enhancing quality of life for people with dementia.

Detailed Descriptor

Plain English description
Not all people who have dementia are diagnosed with the condition. This indicator measures the number of people that have been diagnosed with dementia as a percentage of the number who are estimated to have the condition.

Technical description
Estimated diagnosis rate for dementia. The estimate of the number of people with dementia is based on published research.

Alignment with other Outcomes Frameworks
Shared with Public Health Outcomes Framework Indicator 4.16
Data sources

Denominator:

1. Dementia prevalence rates
   Estimated person-level prevalence rates for dementia from the age of 40 by 5-year age groups are sourced from the Dementia UK report 2007 (pages 13 and 16).

   The prevalence rates are (listed below) are based on published research and are not updated regularly.

2. England population estimates
   1. Annual England population estimates for the very elderly (90+) by single year of age (unrounded data) provided by the Office for National Statistics (ONS) – National Statistics. Provided as a bespoke file from ONS.

      As a consequence of the methodology used to produce the mid-year populations for the very elderly previous years’ estimates for the 90-94 and 95+ age groups are revised every year when the latest figures are produced. However, the sum of the very elderly estimates by single year of age for all adults aged 90+ will always match the England mid-year population figure for all adults aged 90+.

   2. Annual England mid-year population estimates up to age 89 provided by ONS - National Statistics, usually released in June each year.

      https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/previousReleases

Numerator:

QOF prevalence data

The number of people diagnosed with dementia is sourced from the NHS Digital Quality and Outcomes Framework (QOF) dataset - Official Statistics:

http://content.digital.nhs.uk/qof

QOF prevalence data are available annually.

Construction

Calculation methodology

Introduction

Not everyone with dementia has a clinical diagnosis. This indicator measures the number of people with a diagnosis of dementia as a percentage of the number estimated to have the condition.

Denominator

The denominator is based on estimated prevalence rates for dementia, published by the Alzheimer’s Society in 2007, and ONS population estimates. Estimated prevalence rates are based on a Delphi consensus exercise, and are viewed as the most authoritative to date (see the Dementia UK report). The person-level prevalence rates from the age of 40 to 95+
are applied to England population figures by 5-year age-band to derive an estimate of the total number of people with dementia in England. Although prevalence rates for age groups 30-34 and 35-39 are available these are excluded from the calculation of the indicator values. This is based on the original calculation proposal as presented to the Methodology Review Group (MRG) in August 2012.

The person-level prevalence rates used are set out in the following table:

<table>
<thead>
<tr>
<th>Age</th>
<th>Population Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-44</td>
<td>0.0140</td>
</tr>
<tr>
<td>45-49</td>
<td>0.0304</td>
</tr>
<tr>
<td>50-54</td>
<td>0.0583</td>
</tr>
<tr>
<td>55-59</td>
<td>0.1368</td>
</tr>
<tr>
<td>60-64</td>
<td>0.1557</td>
</tr>
<tr>
<td>65-69</td>
<td>1.3</td>
</tr>
<tr>
<td>70-74</td>
<td>2.9</td>
</tr>
<tr>
<td>75-79</td>
<td>5.9</td>
</tr>
<tr>
<td>80-84</td>
<td>12.2</td>
</tr>
<tr>
<td>85-89</td>
<td>20.3</td>
</tr>
<tr>
<td>90-94</td>
<td>28.6</td>
</tr>
<tr>
<td>95+</td>
<td>32.5</td>
</tr>
</tbody>
</table>

Recent and on-going research into dementia prevalence (for example, findings from the CFAS II study8) will be analysed, and where a more authoritative estimate is identified, prevalence rates will be updated in due course.

**Numerator**

The numerator is given by the number of people who are on their GP Practice’s dementia register, as recorded in QOF. People are likely to enter the dementia register after a secondary care episode or as a result of their GP’s clinical judgement. It is possible, however, that a patient has a clinical diagnosis of dementia but this has not been captured in the condition register. The following table shows the number of people diagnosed with dementia, based on QOF data:

---

Calculation

Denominator

\[ \Sigma_j \left( \% \text{Prevalence rate}_j \times \text{Population estimate}_j \right) \]

Where \( j = 40-44, 45-49, 50-54, \ldots, 90-94, 95+ \) is the age group

Numerator

\[ \Sigma_i \left( \text{Number of entries on dementia register}_i \right) \]

Where \( i = 1, \ldots, 8245 \) is the GP Practice

Presentation

Breakdowns

Time periods

Annual data from 2007/08 for England
## Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Year of coverage</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>The exact dates of coverage</td>
</tr>
<tr>
<td>Breakdown</td>
<td>National level only</td>
</tr>
<tr>
<td>Level</td>
<td>Further description of breakdown (currently not applicable as national level only)</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Estimated diagnosis rate (number of people diagnosed/estimated prevalence)</td>
</tr>
<tr>
<td>Notes</td>
<td>Where applicable</td>
</tr>
</tbody>
</table>
2.7 Health-related quality of life for people with three or more long-term conditions

Indicator assurance

This indicator uses the same methodology as indicator 2 (Health-related quality of life for people with long-term conditions), therefore its assurance is assessed through the indicator 2 applications.

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology Review Group (MRG) recommended</td>
<td>July 2013, January 2014 (recommended based on direct standardisation methodology)</td>
</tr>
<tr>
<td>Indicator Governance Board (IGB) assured</td>
<td>April 2014</td>
</tr>
</tbody>
</table>

Overview

Indicator title

2.7 Health-related quality of life for people with three or more long-term conditions.

Improvement area – Improving quality of life for people with multiple long-term conditions

Indicator family name

NHS Outcomes Framework – Domain 2: Improving quality of life for people with multiple long-term conditions

Outcome sought

Improved health-related quality of life for people with multiple long-term conditions.

Detailed Descriptor

Plain English description

This indicator measures health-related quality of life for people who identify themselves as having three or more long-standing health conditions. Health-related quality of life refers to the extent to which people:

- have problems walking about;
- have problems performing self-care activities (washing or dressing themselves);
- have problems performing their usual activities (work, study etc.);
- have pain or discomfort;
- feel anxious or depressed.
Technical description
The directly standardised average (mean) EQ-5D™ score for people self-reporting three or more long-term conditions.

Alignment with other Outcome Frameworks
Complementary to Adult Social Care Outcomes Framework Indicator 1A

Data sources
GP Patient Survey (GPPS) from Ipsos MORI (http://www.gp-patient.co.uk/) – Official Statistics

Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.

As of February 2018, further updates for this indicator are currently to be confirmed.

Construction

Calculation methodology
Introduction
This indicator is based on a large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years’ survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer before the questionnaire is received, and they are at least 18 years old six months before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for the survey are available in a technical annex from the link in the data sources section.

Data filters
Data are filtered based on questions from the GP Patient Survey, to isolate those who report one or more long-term conditions. Respondents are identified as having a long-term condition if they answer ‘Yes’ to the following question.

Do you have a long-standing health condition?
- Yes
- No
- Don’t know/can’t say
If respondents fail to acknowledge their long-term condition in this question (those who answer ‘No’ or ‘Don’t know/can’t say’) but tick a condition in the next question, they are considered to have a long-standing health condition:

Which, if any, of the following medical conditions do you have? Please x all the boxes that apply to you:

- Alzheimer’s disease or dementia
- Angina or long-term heart problem
- Arthritis or long-term joint problem
- Asthma or long-term chest problem
- Blindness or severe visual impairment
- Cancer in the last 5 years
- Deafness or severe hearing impairment
- Diabetes
- Epilepsy
- High blood pressure
- Kidney or liver disease
- Long-term back problem
- Long-term mental health problem
- Long-term neurological problem
- Another long-term condition
- None of these conditions
- I would prefer not to say

Note: Learning difficulty used to be presented as an option in the above list but was removed from the 2015/16 GPPS onwards as it is generally not considered a long-term condition.

A count of conditions is derived from the number of illnesses selected. Only respondents ticking three or more illnesses have been selected for inclusion into this indicator.

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

**Calculation**

**Denominator**

The denominator is the weighted count of responses from all people who identify themselves as having three or more long-term conditions:
$\Sigma_k(wt_{new,k})$

where $k = 1, \ldots, p$ are respondents with three or more long-term conditions.

**Numerator**

Health-related quality of life is measured using the EQ-5D™ instrument which asks respondents to rate their health in five different areas. The ratings are collected through the following question in the survey:

*By placing an (×) in one box in each group below, please indicate which statements best describe your own health state today.*

The possible responses are:

**Mobility**
- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

**Self-Care**
- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself
- I am unable to wash or dress myself

**Usual Activities (e.g. work, study, housework, family or leisure activities)**
- I have no problems doing my usual activities
- I have slight problems doing my usual activities
- I have moderate problems doing my usual activities
- I have severe problems doing my usual activities
- I am unable to do my usual activities
NHS Outcomes Framework: 2.7 - Health-related quality of life for people with three or more long-term conditions

Pain / Discomfort
- I have no pain or discomfort
- I have slight pain or discomfort
- I have moderate pain or discomfort
- I have severe pain or discomfort
- I have extreme pain or discomfort

Anxiety / Depression
- I am not anxious or depressed
- I am slightly anxious or depressed
- I am moderately anxious or depressed
- I am severely anxious or depressed
- I am extremely anxious or depressed

The answers to these questions are converted into an index by applying a formula that attaches values (also called weights) to each of the levels in each dimension. The weights are based on an empirical study, which asked people to quantify the extent to which they would sacrifice quantity of life in order to gain improvements in quality of life, at various states of health (see Dolan et al\textsuperscript{9} and Szende, Oppe and Devlin\textsuperscript{10} for details).

Individual EQ-5D™ index scores range between -0.594 and 1.000. The highest value is assigned to patients who report the best possible health state for each of the five domains.

The numerator is the sum of the weighted EQ-5D™ index values for all responses from people who identify themselves as having three or more long-term conditions.

This is calculated as: \[ \sum_i (EQ - 5D^\text{TM} \times wt_{\text{new}_i}) \]

where \( i = 1, \ldots, m \) are respondents who identify themselves as having three or more long-term conditions.

2011/12 data are based on the EQ-5D-3L™ instrument, which provided respondents with three possible answers under each of the five domains. From 2012/13 onwards, the EQ-5D-3L™ was replaced with the EQ-5D-5L™ instrument which provides respondents with five possible answers under each domain as shown on the previous page.


Whilst preference weights for the new instrument are under development, a crosswalk to translate 3L index values into 5L index values has been devised. Details of the crosswalk methodology and results can be found on the EuroQol website: http://www.euroqol.org/fileadmin/user_upload/Documenten/PDF/Crosswalk_5L/EQ-5D™-5L_Crosswalk_model_and__methodology.pdf.

EQ-5D™ is a registered trademark of EuroQol. Further details are available from http://www.euroqol.org.

EuroQol Group gave written permission to the Department of Health on 2 May 2011 to use the EQ-5D™ questions only in this format (without the visual analogue scale) for the GP Patient Survey and are happy for it to be referred to as EQ-5D™.

Weighting
A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (wt_new). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme can be found in the survey’s technical annex, available from the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:
https://gp-patient.co.uk/weighted-data

Standardisation
The indicator values are directly standardised. The directly age and gender standardised mean EQ-5D™ score is the score a standard population would have if that population were to experience the age and gender specific scores of the subject population.

The directly standardised score (DSS) is given by:

\[
DSS = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i}
\]

where:
**Oi** is the observed number of events in the local or subject population in age and gender group i (sum of weighted EQ-5D™ scores in the respective age and gender group for all respondents who identify themselves as having three or more long-term conditions)

**ni** is the number of individuals in the local or subject denominator population in age and gender group i (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents who identify themselves as having three or more long-term conditions)

**wi** is the number of individuals in the reference or standard population in age and gender group i (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents to the GPPS)

The standard population used for the direct standardisation method are all persons who responded to the GP Patient Survey in the respective financial year. The age groups used in the calculation are: 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

**Contextual Information**

A contextual indicator showing the average health status score for all GP Patient Survey respondents at national level and for each of the breakdowns is calculated. This information aims to aid the interpretation by providing comparison of the health-related quality of life for people who identify themselves as having three or more long-term conditions to the whole GP Patient Survey population.

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion and deprivation as the number of surveys sent out cannot be determined at these levels.

**Presentation**

**Breakdowns**

**Time periods**

Annual data from 2011/12

**Demographic**

10-year age bands from 18 - 24 to 85 and over

Gender (Males and females)

Ethnicity

Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)
**Disclosure control**

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Local authority</th>
<th>Age band</th>
<th>Gender</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Standard population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>X</td>
<td>18 to 24</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Female</td>
<td>2.5</td>
<td>5.0</td>
<td>30,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>35 to 44</td>
<td>Female</td>
<td>12.8</td>
<td>35.6</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>45 to 54</td>
<td>Female</td>
<td>15.7</td>
<td>38.5</td>
<td>40,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Female</td>
<td>14.7</td>
<td>40.1</td>
<td>45,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>65 to 74</td>
<td>Female</td>
<td>8.5</td>
<td>20.2</td>
<td>35,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>75 to 84</td>
<td>Female</td>
<td>2.3</td>
<td>8.9</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>85 or over</td>
<td>Female</td>
<td>0.0</td>
<td>0.0</td>
<td>10,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>18 to 24</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>20,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>25 to 34</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>30,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>35 to 44</td>
<td>Male</td>
<td>15.6</td>
<td>34.7</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>45 to 54</td>
<td>Male</td>
<td>20.1</td>
<td>45.9</td>
<td>40,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>55 to 64</td>
<td>Male</td>
<td>8.7</td>
<td>16.3</td>
<td>45,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>65 to 74</td>
<td>Male</td>
<td>4.0</td>
<td>8.7</td>
<td>35,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>75 to 84</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>25,000</td>
</tr>
<tr>
<td>2013/14</td>
<td>X</td>
<td>85 or over</td>
<td>Male</td>
<td>0.0</td>
<td>0.0</td>
<td>10,000</td>
</tr>
</tbody>
</table>
As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.

- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.

- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.

When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

### Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Respective financial year</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>January to March for the respective financial year (July to March for years prior to 2016/17)</td>
</tr>
<tr>
<td>Breakdown</td>
<td>England, gender, age, ethnicity, sexual orientation, religion, deprivation decile, lower tier local authority, upper tier local authority, region</td>
</tr>
<tr>
<td>Level</td>
<td>Level of breakdown</td>
</tr>
<tr>
<td>Level description</td>
<td>Description of level of breakdown</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Directly standardised mean health status score for individuals who have three or more long-term conditions</td>
</tr>
<tr>
<td>Numerator</td>
<td>Sum of weighted EQ-5D™ value</td>
</tr>
<tr>
<td>Denominator</td>
<td>Sum of weighted response (wt_new)</td>
</tr>
<tr>
<td>Average health status score for all GP Patient Survey respondents</td>
<td>Directly standardised mean health status score for all GP Patient Survey respondents</td>
</tr>
<tr>
<td>Survey response rate</td>
<td>Unweighted percentage of surveys returned</td>
</tr>
</tbody>
</table>
## Domain 2 Appendices

### Appendix 1 - Definition of each LFS variable used to construct indicators 2.2 and 2.5.i

<table>
<thead>
<tr>
<th>LFS Variable Name</th>
<th>LFS Variable Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>COUNTRY</td>
<td>Residential details – country within UK</td>
</tr>
<tr>
<td>MF1664</td>
<td>Males and females aged 16-64</td>
</tr>
<tr>
<td>INECAC05</td>
<td>Basic economic activity (ILO definition) (reported)</td>
</tr>
<tr>
<td>LNGLST (LNGLIM prior to Q2 2013)</td>
<td>Whether health problem lasting more than 12 months</td>
</tr>
<tr>
<td>HEAL</td>
<td>Lists the respondent’s health problems</td>
</tr>
<tr>
<td>AGE</td>
<td>Age of respondent</td>
</tr>
<tr>
<td>SEX</td>
<td>Sex of respondent</td>
</tr>
<tr>
<td>UALA</td>
<td>Unitary authority/local area</td>
</tr>
<tr>
<td>GOVTOF</td>
<td>Government Office Regions – Summary</td>
</tr>
<tr>
<td>ETH11EW (ETH01 prior to 2011)</td>
<td>Ethnic group</td>
</tr>
<tr>
<td>NSSECM10</td>
<td>NS-SEC category</td>
</tr>
<tr>
<td>RELIGE (RELIG prior to 2011)</td>
<td>Religion</td>
</tr>
<tr>
<td>PWT17 (Q1 2017 – present)</td>
<td>Person weight</td>
</tr>
<tr>
<td>PWT16 (Q1 2016 - Q4 2016)</td>
<td>Person weight</td>
</tr>
<tr>
<td>PWT14 (Q3 2014 – Q4 2015)</td>
<td>Person weight</td>
</tr>
<tr>
<td>PWT 11 (2011 – Q2 2014)</td>
<td>Person weight</td>
</tr>
<tr>
<td>PWT10 (prior to 2011)</td>
<td>Person weight</td>
</tr>
</tbody>
</table>
## Appendix 2 - Primary diagnoses for chronic ambulatory care sensitive conditions for indicator 2.3.i

<table>
<thead>
<tr>
<th>ICD–10 codes</th>
<th>Condition group and cause</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infections</strong></td>
<td></td>
</tr>
<tr>
<td>B180, B181</td>
<td>Chronic viral hepatitis B: Chronic viral hepatitis B with delta-agent (B180). Chronic viral hepatitis B without delta-agent (B181) (excludes people with a secondary diagnosis of D57 sickle-cell disorders)</td>
</tr>
<tr>
<td><strong>Nutritional, endocrine and metabolic</strong></td>
<td></td>
</tr>
<tr>
<td>E10, E11, E12, E13, E14</td>
<td>Diabetes: Insulin-dependent diabetes mellitus (E10), Non-insulin-dependent diabetes mellitus (E11), Malnutrition-related diabetes mellitus (E12), Other specified diabetes mellitus (E13), Unspecified diabetes mellitus (E14)</td>
</tr>
<tr>
<td><strong>Diseases of the blood</strong></td>
<td></td>
</tr>
<tr>
<td>D501, D508, D509, D51, D52</td>
<td>Iron deficiency anaemia: Sideropenic dysphagia (D501), Other iron deficiency anaemias (D508), Iron deficiency anaemia, unspecified (D509); Vitamin B12 deficiency anaemia (D51), Folate deficiency anaemia (D52)</td>
</tr>
<tr>
<td><strong>Mental and behavioural disorders</strong></td>
<td></td>
</tr>
<tr>
<td>F00, F01, F02, F03</td>
<td>Dementia: Dementia in Alzheimer disease (F00), Vascular dementia (F01), Dementia in other diseases classified elsewhere (F02), Unspecified dementia (F03)</td>
</tr>
<tr>
<td><strong>Neurological disorders</strong></td>
<td></td>
</tr>
<tr>
<td>G40, G41</td>
<td>Convulsions and Epilepsy: Epilepsy (G40), Status epilepticus (G41)</td>
</tr>
<tr>
<td><strong>Cardiovascular diseases</strong></td>
<td></td>
</tr>
<tr>
<td>I110, I50, J81X, I130 (excluding OPCS4 codes: K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71).</td>
<td>Congestive heart failure: Hypertensive heart disease with (congestive) heart failure (I110), Heart failure (I50), Pulmonary oedema (J81X), Hypertensive heart and renal disease with (congestive) heart failure (I130)</td>
</tr>
<tr>
<td>ICD–10 codes</td>
<td>Condition group and cause</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>I10X, I119.</td>
<td>Hypertension: Essential (primary) hypertension (I10X), Hypertensive heart disease without (congestive) heart failure (I119)</td>
</tr>
<tr>
<td></td>
<td>OPCS4 codes excluded: K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71</td>
</tr>
<tr>
<td>I48</td>
<td>Atrial fibrillation and flutter</td>
</tr>
</tbody>
</table>

**Respiratory diseases**

| J20, J41, J42X, J43, J44, J47X | Chronic obstructive pulmonary disease: Acute bronchitis (J20), Simple and mucopurulent chronic bronchitis (J41), Unspecified chronic bronchitis (J42X), Emphysema (J43), Other chronic obstructive pulmonary disease (J44), Bronchiectasis (J47) |
| J45, J46X          | Asthma (J45). Status asthmaticus (J46) |
## Appendix 3 – ICD-10 codes for indicator 2.3.ii

<table>
<thead>
<tr>
<th>ICD–10 codes</th>
<th>Condition group and cause</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nutritional, endocrine and metabolic</strong></td>
<td></td>
</tr>
<tr>
<td>E10</td>
<td>Diabetes</td>
</tr>
<tr>
<td><strong>Neurological disorders</strong></td>
<td></td>
</tr>
<tr>
<td>G40, G41</td>
<td>Epilepsy</td>
</tr>
<tr>
<td><strong>Respiratory diseases</strong></td>
<td></td>
</tr>
<tr>
<td>J45, J46X</td>
<td>Asthma</td>
</tr>
</tbody>
</table>