

# Indicator Specification:

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## CCG OIS 2.6 (NHS OF 2.3.i)

**Unplanned hospitalisation for chronic ambulatory care sensitive conditions**

**Indicator Reference: I00757**

**Version: 1.5**

**Date: September 2014**

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# Document Management

## Revision history

| Version | Date           | Summary of Changes  |
|---------|----------------|---|
| 0.1     | October 2012   | Draft for internal review   |
| 0.2     | December 2012  | To be published on the HSCIC Portal   |
| 1.0     | March 2013     | Published on the HSCIC Portal   |
| 1.2     | December 2013  | Updated with new data period  |
| 1.3     | March 2014     | Revision to Data Filter 'ADMIMETH' following HES change.                                |
| 1.4     | June 2014      | Revision to CCG mapping methodology   |
| 1.5     | September 2014 | Revision to Data Filter 'ADMIMETH' following addition of new emergency admission codes. |

## Indicator assurance

|                            | Status  | Date              |
|----------------------------|---------|-------------------|
| Methodology Review Group   | Assured | 13 July 2012      |
| Indicator Governance Board | Assured | 20 September 2012 |

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## Overview

### Indicator title

CCG 2.6 Unplanned hospitalisation for chronic ambulatory care sensitive conditions

### Indicator family name

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

### Condition / Topic area

Chronic ambulatory care sensitive conditions.

### Health and Social Care Information Centre Indicator Portal code

I00757

### Detailed Descriptor

#### Plain English description

CCG OIS 2.6 measures how many 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, epilepsy and high blood pressure.

#### Technical description

Directly age and sex standardised rate of unplanned hospital admissions for chronic ambulatory care sensitive conditions, per 100,000 GP registered patients.

## Data Sources

### Denominator

Unconstrained GP registered patient counts by single year of age and sex from the NHAIS (Exeter) Systems; extracted annually on 1 April for the forthcoming financial year.

### Numerator

Hospital Episode Statistics (HES) Admitted Patient Care (APC), provided by the Health and Social Care Information Centre (HSCIC).

### Standard population

Office for National Statistics (ONS) mid-year England population estimates for the respective calendar years. If estimates are not available for a specific calendar year, the most recently available estimates are used.

## Construction

### Calculation Methodology

#### Introduction

This indicator reports the proportion of individuals with chronic ambulatory care sensitive conditions admitted to hospital as an emergency admission in the respective financial year.

A data period of 12 months is used to produce an annual output.

Data are shown for all persons, directly standardised by age and sex.

#### Data Fields

For this indicator the numerator is derived from HES APC final data with the use of HES APC provisional data where the data has not yet been finalised. Finalised annual data are usually available in the November following the year end. For the denominator, GP patient counts are supplied annually on 1 April.

The data fields and filters that are used are as follows. Details of HES fields and classifications are available in the [HES Data Dictionary](#).

DIAG\_3\_01

DIAG\_4\_01

DIAG\_3\_CONCAT

OPERTN\_4\_CONCAT

STARTAGE

ADMIMETH

EPISTAT

ADMIDATE  
SEX  
EPIORDER  
ADMISORC  
EPITYPE  
CLASSPAT  
CCG\_RESPONSIBILITY

## Data Filters

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: B18.0, B18.1  
**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\_3\_01 is equal to I50  
**OR**  
DIAG\_4\_01 is equal to any of: I11.0, J81X, I13.0)  
**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)  
[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: J20, 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
- g) DIAG\_3\_01 is equal to either of: D51, D52  
**OR**  
DIAG\_4\_01 is equal to any of: D50.1, D50.8, D50.9
- h) DIAG\_4\_01 is equal to either of: I10X, I11.9  
**AND**  
OPERTN\_3\_CONCAT does not contain: K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71
- i) DIAG\_3\_01 is equal to any of: G40, G41, F00, F01, F02, F03  
**OR**  
DIAG\_4\_01 is equal to: I48X

Rationale: This gives the primary diagnosis of the patient in the episode when the patient was admitted to hospital.

2. Field Name STARTAGE

Conditions Is between (inclusive): 0 and 120  
**OR**  
is between (inclusive): 7001 and 7007

Rationale This field describes the age of the patient at the start of their spell in hospital. For children under the age of one year, codes 7001 to 7007 may be used instead of 0 to describe their age in days. This is why the further classification relating to 7000 is needed.

3. Field Name ADMIMETH

Conditions Is equal to the following: 21, 22, 23, 24, 25, 28, 2A, 2B, 2C, 2D

Rationale This restricts the data to emergency admissions only. 25, 2A, 2B, 2C and 2D are valid for data from 1<sup>st</sup> April 2013 and replace 28.

4. Field Name EPISTAT

Conditions Is equal to the following: 1 or 3

Rationale This includes both finished and unfinished hospital episodes.
5. Field Name ADMIDATE

Conditions Limited to admissions within the current rolling quarter year.

Rationale Data is presented annually with an admission date within the year of interest.
6. Field Name SEX

Conditions Is equal to the following: 1 or 2

Rationale Data is shown for males and females separately. Data for persons is the sum of males and females and excludes 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: 51, 52 or 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 and babies using only delivery facilities).
11. Field Name CCG\_RESPONSIBILITY
- Conditions CCGs in England only.
- Rationale Excludes those patients who are registered with GPs outside England. Reference file provided at:  
<http://www.hscic.gov.uk/ccgois>

### Calculation

This indicator is a rate directly standardised by age and sex per 100,000 registered patients. For age groups used in the standardisation see Appendix 1.

### Denominator

CCG level count of patients registered with the constituent GP Practices, extracted from NHAIS (Exeter) Systems.

### Numerator

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

### Direct Standardisation

The directly age-standardised rate (DSR) is the rate of events that would occur in a standard population if that population were to experience the age-specific rates of the subject population. The age-specific rates of the subject population are applied to the age structure of the standard population.

$$DSR = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i}$$

where:

$O_i$  is the observed number of events in the local or subject population in age group  $i$ ;

$n_i$  is the number of individuals in the local or subject denominator population in age group  $i$ , or the population x period at risk (e.g. 'person-years');

$w_i$  is the number (or proportion) of individuals in the reference or standard population in age group  $i$ .

The standard population used for the direct method is the England population in the appropriate ONS mid-year population estimates. The age groups used are: 0-4, 5-9, 10-14, 15-18, 19-24, 25-29...80-84, 85+.

### Confidence Intervals

95% confidence intervals are calculated using Dobson's<sup>1</sup> and Byar's<sup>2</sup> methods. Byar's method is recommended for larger counts and the exact method based on the Poisson distribution for small counts; where Byar's method is not quite as accurate. As follows.

$$DSR_{lower} = DSR + \sqrt{\frac{Var(DSR)}{Var(O)}} \left( O \left( 1 - \frac{1}{9O} - \frac{1.96}{3\sqrt{O}} \right)^3 - O \right)$$

$$DSR_{upper} = DSR + \sqrt{\frac{Var(DSR)}{Var(O)}} \left( (O + 1) \left( 1 - \frac{1}{9(O + 1)} + \frac{1.96}{3\sqrt{O + 1}} \right)^3 - O \right)$$

where:

$O$  is the total number of observed deaths in the subject population

$$Var(DSR) = \frac{\sum_i \frac{w_i^2 O_i}{n_i^2}}{(\sum_i w_i)^2}$$

$$Var(O) = \sum_i O_i$$

<sup>1</sup> Dobson A et al. Confidence intervals for weighted sums of Poisson parameters. Stat Med 1991;10:457-62

<sup>2</sup> Breslow NE, Day NE. Statistical methods in cancer research, volume II: The design and analysis of cohort studies. Lyon: International Agency for Research on Cancer, World Health Organization; 1987: 69.

## Presentation

### Breakdowns

#### Time periods

Financial year data from 2010/11 onwards, with rolling quarters available from 2012/13 onwards

#### Demographic

Gender

#### Geographic

All registered patients in England

CCG

Area Team

### Disclosure control

The indicator is calculated following the HES Analysis guide on suppression of small numbers. Where the indicator is calculated from a numerator of between one and five (inclusive), the value is suppressed and replaced with a '\*'. This is in order to protect against the potential for disclosing the identity of an individual.

Secondary suppression is carried out where only one rate is suppressed for a certain breakdown and time period and this value could be calculated by differencing. This is to reduce the risk of one suppressed number being identifiable in isolation.

[http://www.hscic.gov.uk/media/1592/HES-analysis-guide/pdf/HES\\_Analysis\\_Guide\\_Jan\\_2014.pdf](http://www.hscic.gov.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_Jan_2014.pdf)

Rates are rounded to one decimal place before publication.

## Excel and CSV output

| Column name         | Output  |
|---------------------|---|
| Period              | Period of coverage (years/rolling quarters)   |
| Breakdown           | National (All registered patients in England), CCG, Area Team                             |
| Level               | Detailed breakdown of each split - breakdown code   |
| Level description   | Further description of level/breakdown  |
| Gender              | Person, Female, Male  |
| DSR                 | Directly standardised rate (DSR) per 100,000 registered patients                          |
| CI lower            | DSR lower 95% confidence interval   |
| CI Upper            | DSR upper 95% confidence interval   |
| Registered patients | The count of registered patients (denominator)  |
| Observed            | The number of unplanned hospitalisations for chronic ambulatory care sensitive conditions |

## Appendices

### Appendix 1 – England standard population age bands

Table 1. Age bands used for the England standard population.

Separate populations were used for males and females.

| Age group |
|-----------|
| 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+       |

## Appendix 2 – List of conditions in CCG OIS 2.6

|   |   |
|---|---|
| <b>Infections</b>                           |   |
| B18.0, B18.1                                | Chronic viral hepatitis B without delta-agent   |
| B18.1                                       | Chronic viral hepatitis B with delta-agent      |
| <b>Nutritional, endocrine and metabolic</b> |   |
| E10   | Insulin-dependent diabetes mellitus             |
| E11   | Non-insulin-dependent diabetes mellitus         |
| E12   | Malnutrition-related diabetes mellitus          |
| E13   | Other specified diabetes mellitus               |
| E14   | Unspecified diabetes mellitus                   |
| <b>Diseases of the blood</b>                |   |
| D50.1                                       | Sideropenic dysphagia                           |
| D50.8                                       | Other iron deficiency anaemias                  |
| D50.9                                       | Iron deficiency anaemia, unspecified            |
| D51   | Vitamin B12 deficiency anaemia                  |
| D52   | Folate deficiency anaemia                       |
| <b>Mental and behavioural disorders</b>     |   |
| F00   | Dementia in Alzheimer disease                   |
| F01   | Vascular dementia                               |
| F02   | Dementia in other diseases classified elsewhere |
| F03   | Unspecified dementia                            |
| <b>Neurological disorders</b>               |   |
| G40   | Epilepsy  |
| G41   | Status epilepticus                              |
| <b>Cardiovascular diseases</b>              |   |
| I10X  | Essential (primary) hypertension                |

|                             |  |
|-----------------------------|--|
| I11.0                       | Hypertensive heart disease with (congestive) heart failure           |
| I11.9                       | Hypertensive heart disease without (congestive) heart failure        |
| I13.0                       | Hypertensive heart and renal disease with (congestive) heart failure |
| I20                         | Angina pectoris  |
| I25                         | Chronic ischaemic heart disease                                      |
| I50                         | Heart failure  |
| I48X                        | Atrial fibrillation and flutter                                      |
| J81X                        | Pulmonary oedema   |
| <b>Respiratory diseases</b> |  |
| J20                         | Acute bronchitis   |
| J41                         | Simple and mucopurulent chronic bronchitis                           |
| J42X                        | Unspecified chronic bronchitis                                       |
| J43                         | Emphysema  |
| J44                         | Other chronic obstructive pulmonary disease                          |
| J45                         | Asthma   |
| J46X                        | Status asthmaticus   |
| J47X                        | Bronchiectasis   |