Indicator 13.17 – Age standardised hospital episode rate for angiography procedures, all ages

Rationale
Circulatory disease accounts for nearly 40% of all deaths among men and women in England every year and coronary heart disease (CHD) is one of the biggest killers. Many people are living with CHD: more than 1.4 million suffer with angina and 300,000 have heart attacks every year. The effects of heart disease are not evenly distributed across different strata of society.

The National Service Framework for Coronary Heart Disease states that there is good evidence that many people with atheromatous plaques and narrowed coronary arteries can have their symptoms relieved and / or their risks of dying reduced by restoring blood flow through blocked coronary arteries – revascularisation. To determine the need for any such procedure, the framework suggests that an angiography takes place. Since the heart’s arteries are not visible on x-ray, a special dye is injected into them through a catheter so the extent of any narrowing can be assessed and a future course of action decided (the angiography procedure).

The Department of Health’s National Service Framework for Coronary Heart Disease states that “NHS Trusts should put in place hospital-wide systems of care so that patients with suspected or confirmed coronary heart disease receive timely and appropriate investigation and treatment to relieve their symptoms and reduce their risk of subsequent coronary events”. The appropriate investigation and intervention pathway is described as:

- Angiography for those with evidence of continuing extensive ischaemia and / or angina that persists despite optimal therapy and lifestyle advice.
- Quantitative assessment of urgency / risk / priority using a published stratification system for patients accepting an offer of revascularisation to inform the judgement about the balance of risks and benefits and to help determine each patient’s relative priority for treatment.
- Revascularisation – either a coronary artery bypass graft (CABG) or a percutaneous transluminal coronary angioplasty (PTCA) with or without stenting.
- Effective secondary prevention and rehabilitation.

Indicator definition
Directly standardised rate of hospital episodes for angiography per 100,000 population.

Numerator definition
The number of hospital episodes for angiography procedures. Episodes were included in this indicator set if they had the OPCS code of K63-K65.
Selection Criteria: OPCS4 (K63-K65).

**Source of numerator**
Hospital Episode Statistics (HES). HES is an annual snapshot of a subset of the data submitted by NHS Trusts to the Nationwide Clearing Service. It provides information on admitted patient care delivered by NHS hospitals.

**Denominator definition**
ONS mid-year population estimates of local authority populations. For example, indicator data for 2008/09 uses ONS 2008 mid-year population estimates.

**Source of denominator**
Population data was taken from the ONS website.

**Geographic coverage**
This indicator is collected and published at Local Authority level. Values for England are also provided.

**Dimensions on inequality**
Data on gender, ethnicity, age and ward of residence are also included in the HES database. These are not presented here as there is potential for a large number of small observations leading to an increased probability that the data might be suppressed due to data protection issues. Small numbers of observations may also lead to wide confidence intervals, making it harder to identify between actual differences and random variation.

**Timeliness**
HES data is available annually.

**Accuracy & completeness**
95% confidence intervals are presented to give an indication of the level of uncertainty of the calculation of the quantity being measured. Uncertainties usually arise because these quantities are based on a random sample of finite size from a population of interest. Confidence intervals are used to assess what would happen if we were to repeat the same study, over and over, using different samples each time. The precise statistical definition of
the 95% confidence interval states that on repeated sampling, 95 times out of 100 the true population value would be within the calculated confidence interval range and 5 times the true value would be either higher or lower than the range.

However, the information presented here is not based on a sample and is therefore not subject to sampling error. They are however subject to random fluctuations over time or between local authorities. In this case, the 95% confidence interval is a way of conveying the stability of the rates. The smaller the confidence interval, the more stable the rate. More events lead to a smaller interval, so as the number of hospital episodes for angiography is small the intervals are quite wide and the rates fairly unstable.

With regard to the use of HES data, the Department of Health warns that variations between areas may exist in terms of the completeness of hospital electronic records, the accuracy of diagnoses, the application and criteria used for certain diagnostic categories, and the quality of the coding of the data.

Disclosure

Guidance from the Department of Health states that where the observed number of hospital episodes is less than 6, the number is suppressed.

Further Information

- National Service Framework for Coronary Heart Disease
- Progress report on NSF for Coronary Heart Disease

Health and Social Care Information Centre

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