**NHS Digital**

**Indicator Supporting Documentation**

**IAP00017 Under 75 mortality from cardiovascular disease (NHSOF)**

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| IAP Code | IAP00017 |
| Title | Under 75 Mortality Rate from Cardiovascular disease |
| Published by | Department of Health and Social Care |
| Reporting period | Annually |
| Geographical Coverage | England |
| Reporting level(s) | National |
| Based on data from | Office for National Statistics |
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| Rating | Assured |
| Assurance date | 01.05.2011 |
| Review date | 01.05.2014 |
| Indicator set | NHS Outcomes Framework |
| Brief Description | Age-standardised rate of mortality from all cardiovascular diseases in persons less than 75 years per 100,000 population |
| Purpose | The objective of this domain is to capture how successfully the NHS is playing its part in reducing the number of avoidable deaths, recognising that the NHS Commissioning Board can be accountable only for the NHS contribution to this goal. Not all deaths can be prevented through healthcare; indeed, the major impact on reducing mortality will be by preventing people becoming ill in the first place. |
| Definition | Age-standardised rate of mortality from all cardiovascular diseases in persons less than 75 years per 100,000 population |
| Data Source | Office for National Statistics (ONS). Mortality and population statistics. |
| Numerator | Number of deaths under 75 years from cardiovascular disease |
| Denominator | Resident population under 75 years |
| Calculation | Directly age-standardised rates.  The directly age-standardised rate 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. Explicitly:  (expressed per 100,000 population)  where:  *wi* is the number, or proportion, of individuals in the standard population in age group *i*.  *ri* is the crude age-specific rate in the subject population in age group *i*, given by:  where:  *Oi* is the observed number of events in the subject population in age group *i*.  *ni* is the number of individuals in the subject population in age group *i*. Confidence intervals for directly standardised rates 95% confidence intervals for the age-standardised rates were calculated using a normal approximation. Standard errors are obtained using the method described by Breslow and Day,[[1]](#endnote-1) but modified to use the binomial variance for a proportion to estimate the variances of the crude age-specific rates.[[2]](#endnote-2) This method is likely to be unreliable when there are fewer than 50 cases in an area, hence confidence intervals for rates based on less than 50 cases should be viewed with caution. The lower and upper limits for the rates are denoted by DSRLL and DSRUL respectively.    (expressed per 100,000 population)  where:  *wi* is the number, or proportion, of individuals in the standard population in age group *i*.  *rij* is the crude age-specific rate in the subject population in age group i, in year *j*.  *nij* is the number of individuals in the subject population in age group i, in year *j*. |
| Interpretation Guidelines | See ‘The NHS Outcomes Framework 2011-12’ document. |
| Caveats | None. |

##### Application form

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| **Set or domain** | 1.1 NHS Outcomes Framework – Domain 1 – Preventing people from dying prematurely  Improvement area – Reducing premature mortality from the major causes of death |
| **Topic area** | Premature mortality |
| **Definition** | A measure of the likelihood of dying of heart disease under the age of 75, which allows for comparisons between populations with different age profiles and over time.  Reported as a directly age-standardised mortality rate per 100,000 population from cardiovascular disease for people aged under 75 for all breakdowns except age group (including 95% confidence intervals).  Age group indicator values are crude rates and not directly standardised. Direct standardisation to the European Standard Population is not possible at this level  This indicator is calculated using Office for National Statistics (ONS) mortality data and mid-year population estimate data and is reported for calendar years. This indicator includes the following geographic and other socio-economic breakdowns: England Lower tier local authority Region  Deprivation decile Gender Age bands (5 years: 0-74) |
| **Indicator owner & contact details** | **Department of Health**  Andrew Parker  Principal Operational Research Analyst  Outcomes Analysis Team  Department of Health  [Andrew.Parker@dh.gsi.gov.uk](mailto:Andrew.Parker@dh.gsi.gov.uk) |
| **Publication status** | Currently in publication |
| **RATIONALE** |  |
| **Purpose** | Cardiovascular disease (CVD) is one of the major causes of death in under-75s in England. There have been huge gains over the past decades in terms of better treatment for CVD and improvements in lifestyle, but to ensure that there continues to be a reduction in the rate of premature mortality from CVD, there needs to be concerted action in both prevention and treatment.  As part of the NHS Outcomes Framework, the indicator is used by DH to hold NHS England to account in reducing premature mortality as set out in the NHS Mandate. This indicator is also used to monitor inequalities in the provision of healthcare. |
| **Sponsor** | Lucy Witter  NHS Mandate, Outcomes Framework & NHS England sponsorship team  Department of Health  Tel: 020 7210 4368  [lucy.witter@dh.gsi.gov.uk](mailto:lucy.witter@dh.gsi.gov.uk) |
| **Endorsement** | ONS Statistical contacts associated with Mortality  Olugbenga Olatunde  Life Events and Population Sources  Office for National Statistics  Tel: 01633 456491  [mortality@ons.gsi.gov.uk](mailto:mortality@ons.gsi.gov.uk)  Andrew Tooley  ONS  [andrew.tooley@ons.gsi.gov.uk](mailto:andrew.tooley@ons.gsi.gov.uk)  +44 (0)1633 455397  ONS statistical contact associated with Population Estimates:  Pete Large  Population Estimates Unit  [pop.info@ons.gsi.gov.uk](mailto:pop.info@ons.gsi.gov.uk)  Telephone: +44 (0)1329 444661 |
| **Evidence and Policy base**  Including related national incentives, critical business question, NICE quality standard and set or domain rationale, if appropriate | This has been selected as an improvement area for Domain 1 (Preventing people from dying prematurely) of the NHS Outcomes Framework.  Cardiovascular disease is one of the major causes of death and disability in England . The Government wants to maintain a focus on tackling premature mortality and so it is important that it has indicators across the five major killers which allows it to track progress and be able to compare performance with other countries. The data derived from this indicator also enables inequalities to be identified and at local level it is used to help understand where those inequalities are and develop bespoke programmes to address them.  In March 2013 the Department of Health published a policy document: Cardiovascular Disease Outcomes Strategy – ‘Improving outcomes for people with or at risk of cardiovascular disease’, can be found at: (https://www.gov.uk/government/uploads/system/uploads/attachment\_data/file/214895/9387-2900853-CVD-Outcomes\_web1.pdf)  This highlights how to help local authorities as well as NHS commissioners and providers to identify where there is scope to make most impact by identifying ten key actions that will deliver improvements in patient outcomes, some of which will also save money.  In April 2014 the Department of Health published the ‘Living Well for Longer’ policy document as part of the ‘Reducing premature mortality programme’, can be found at: (<https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307703/LW4L.pdf>)  This highlights the aim to match the best countries in Europe in preventing early and avoidable deaths on an unprecedented scale – equivalent to an additional 30,000 lives saved per year by the year 2020.  It also highlights how to help local authorities as well as NHS commissioners and providers to identify where there is scope to make most impact by identifying ten key actions that will deliver improvements in patient outcomes, some of which will also save money.  This indicator enables CCGs and LAs monitor their progress is how well they are delivering these polices and to compare performance with each other through the CVD profiles produced by the National Cardiovascular Intelligence Network (NCVIN). |
| **DATA** |  |
| **Data source** | Denominator:  Office for National Statistics (ONS) mid-year population estimates of the relevant age group and gender based on the 2011 Census  Numerator:  Mortality data by cause, published annually by the ONS  Standard population:  2013 based European Standard Population (ESP), published by the ONS (originating from Eurostat). |
| **Justification of source and others considered** | ONS is the official source of mortality and population statistics in England and Wales. They receive up to date and accurate registers of deaths from registrars across England.  As ONS mid-year population estimates are the official source of the estimate’s population in England, no other data sources were considered for this indicator.  The European Standard Population is methodological standard of population distribution which is adopted across Europe to make international comparisons of mortality rates. |
| **Data availability** | Numerator:  ONS mortality data[[3]](#footnote-1) is published online annually by calendar year and is available around August / September after year-end. Record level mortality data are not publicly available. The HSCIC receives record level mortality data from ONS based on a data sharing agreement.  Denominator:  ONS mid-year population estimates[[4]](#footnote-2) are published (publicly) online annually by calendar year and are available the summer after year-end (available about 12 months after the reference date of 30 June).  The mid-year population estimates for Lower Super Output Areas (LSOAs), which are used to calculate the deprivation breakdown for this indicator, are available in autumn after year-end.  Standard population:  The European Standard Population[[5]](#footnote-3) methodology was updated in 2013 (1976 prior model version) to reflect an ageing population distribution across Europe. The 2013 per 100,000 population will remain static for a number of years or even decades. |

**Data (continued)**

**Data quality**

Numerator:

Daily extracts of death registrations from the Registration Online system are received by ONS then pass through a series of automatic validation processes which highlight any inconsistencies. The Mortality Metadata provides detailed information on the collection, processing and quality of mortality data for England and Wales.

Internal consistency checks are then conducted to eliminate any errors made during the recording of deaths, and to ensure the annual dataset is complete. Before becoming usable for analysis, the data pass through more validation checks and processes, these include running frequency counts on a range of variables, checking the plausibility of combinations of fields, and checking inconsistencies. Suspect records are referred back to register offices. Any concerns relating to cause of death are referred to a Medical Advisor/Medical Epidemiologist. The Mortality Metadata provides more detail on all these checks.

Mortality statistics are produced based on the deaths registered in a particular reference period, rather than deaths occurring in a particular period. This allows for more timely publication of complete statistics but means that annual figures include some deaths that occurred in years prior to the reference year (approximately 4.5%). Legislation in England and Wales means that when a coroner’s inquest takes place, the death cannot be registered until the inquest is complete. Since ONS has no information about the death until it is registered, there can be a delay between the date the death occurred and when the death is added to the ONS mortality database. The only exception is when a coroner adjourns the inquest and carries out an “accelerated registration”, while awaiting the outcome of criminal proceedings. More information of the impact of registration delays each year by specific causes is included in the appropriate statistical bulletin.

Although mortality statistics based on registrations are not entirely comparable to those based on occurrences, the differences are relatively small, since in most cases deaths occur and are registered in the same calendar year. For example, the number of death registrations in 2013 involving deaths occurring in 2013 was 482,658 while the number of 2013 death occurrences was 502,670 (a difference of 4.1%). There will always be a number of late death registrations for previous years that will be included in the annual extract of death registrations.

For the majority of deaths (around 80%) ONS codes the underlying cause of death using automated cause coding software. The remainder are coded manually by experienced coders. Manual coding is necessary for deaths involving a coroner’s inquest. Using an automated coding tool improves the international and temporal comparability of mortality statistics. Periodical reports on persistent coding problems are referred to a Medical Epidemiologist and to international forums.

Where the underlying cause of death is assigned to an external cause (for example, a transport accident), at least 1 code is assigned to define the nature of the injury. If multiple injuries are recorded, 1 will be selected as the secondary cause code. Again, how this selection is done is based on rules assigned by WHO to ensure accuracy and comparability of statistics.

The Coroners and Justice Act 2009 will reform the process of death certification by introducing a single unified system. The introduction of medical examiners and the scrutiny they provide is expected to improve the quality (precision and completeness) of the cause of death recorded on the MCCD and, consequently, will have an impact on cause of death statistics.

The consistency of manual cause of death coding for narrative verdicts has previously been assessed by ONS (Hill & Cook, 2011). A total of 7,914 deaths were re-coded by 8 experienced ONS cause coders and comparisons made between the original underlying cause of death assigned in each case and the new underlying cause of death. The research showed that although in some cases the coders assigned a different underlying cause of death, overall they applied the ICD classification rules consistently. A total of 78% of cases matched to the fourth digit level of the ICD-10 cause of death code and 90% matched at ICD-10 chapter level.

A quality and methodology information report for the ONS mortality data can be found here: <http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/social-statistics/sqr-mortality-statistics.pdf>

Denominator:

Population estimates are produced using a well-established demographic approach called the cohort component method. This involves combining information from a number of data sources including the previous census, survey data and administrative registers. The data sources used are the best that are available on a nationally consistent basis down to local authority level, but the estimates are subject to the coverage and error associated with these sources. Information from administrative registers such as the numbers of births and deaths are considered to be very reliable.

Several products providing information on the likely accuracy of the estimates are planned or already available:

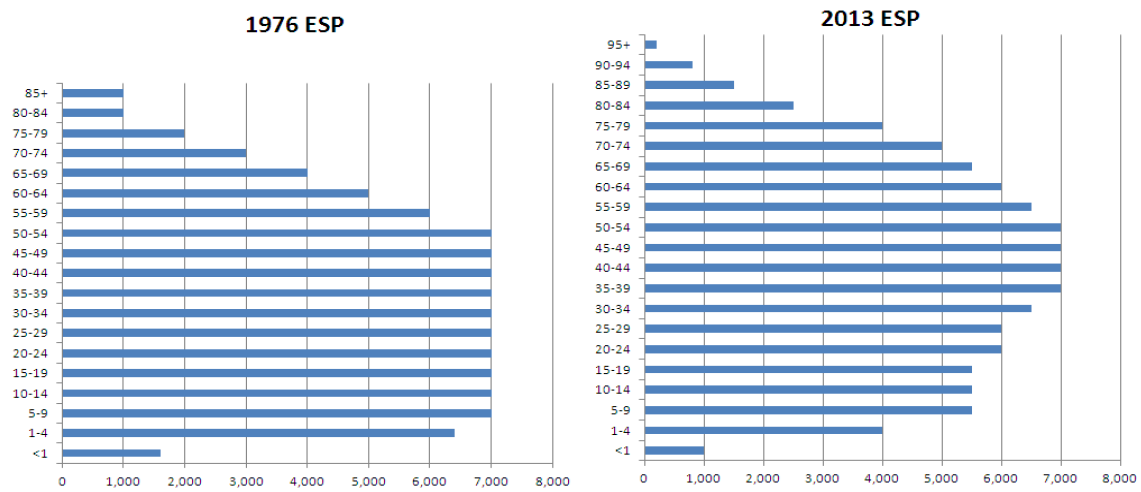
* a set of Quality Indicators which provide a high level indication of the likely reliability of the estimates for each Local Authority are published alongside each release (from the estimates for 2013 onwards)
* a Data Comparator tool, allowing easy comparison of the population estimates with counts from administrative sources, is also published alongside each release (again from the estimates for 2013 onwards)
* statistical measures of the reliability of the 2011 Census estimates - on which the population estimates are based - are published in the Confidence Intervals for the 2011 Census report
* further products are being developed for publication to help users understand the reliability of the estimates
* information is also available, as described below, on the likely accuracy of the migration estimates which are used in updating the population estimates each year

One source of potential inaccuracy in the estimates is the use of sample surveys in the derivation of the 2011 Census estimates (where the Census Coverage Survey is used to adjust for estimated non-response) used as the base population, and the IPS-based estimates of international migration. Sampling error from those sources allows the derivation of an estimated confidence interval of +/- 0.2%. This means that if the Census and IPS were repeated many times, with a new sample for the related surveys selected each time, we would expect the true value to be within 0.2% of the estimated value 95% of the time.

A quality and methodology information report for the ONS mid-year population estimates can be found here:<http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/population/quality-and-methodology-information-for-annual-mid-year-population-estimates.pdf>

Standard population:

From 2014/15 the majority of ONS mortality outputs will be based on new methods for age-standardisation, from Eurostat. 2013 European standard population (2013 ESP) will replace the previous ‘1976 ESP’ methodological standard in health statistics. The age distribution of the population continues to show a progressive shift towards older ages. A comparison between the two population structures (per 100,000 population) is shown below.



To ensure consistency and comparability with the 10 year dataset, all previous years prior to 2013 will be recalculated using the 2013 ESP.

The impact of calculating mortality rates using the 2013 European Standard Population on causes of death report, from the ONS can be found here: <http://www.ons.gov.uk/ons/guide-method/user-guidance/health-and-life-events/revised-european-standard-population-2013--2013-esp-/rpt-2013-esp-mortality-rates.pdf> . The summary of impacts from this change are:

* For both sexes, mortality rates for all causes of death registered in 2012 were significantly higher when calculated using the 2013 ESP compared with the 1976 ESP, as deaths predominantly occur at older ages
* the 2013 ESP had a slightly greater effect on females than males in terms of the percentage increase in ASRs
* Rates for ICD-10 chapters containing conditions such as dementia, Alzheimer’s, pneumonia and **cerebrovascular and heart diseases**, for example, were approximately twice as high under the new ESP compared with the old ESP.

For more information on the ESP can be found at: <http://www.ons.gov.uk/ons/rel/subnational-health2/european-standard-population/effect-on-uk-official-statistics/sty-revision-of-esp.html>

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| **Data (continued)** |  |
| **Quality assurance** | Mortality data passes through a number of processes before becoming usable for analysis. Simple validations include examination of dates to ensure that they are likely. More complicated validations include checks for consistency between dates of birth, death and registration, or between age and marital status.  More information on the data validation processes and routine checks carried out by ONS is available here: <http://www.ons.gov.uk/ons/guide-method/user-guidance/health-and-life-events/mortality-metadata.pdf>  As part of the production process for this indicator, the national figures reported are checked against published figures from ONS. In addition, as further years of data are published they will be checked to determine whether the change is in line with changes seen previously. Investigation into the source of any issues will be conducted where necessary. |
| **Quality improvement plan**  If appropriate | N/A |
| **Data linkage** | No data linkage is carried out. |
| **Quality of data linkage** | N/A |
| **Data fields** | The data fields used within the ONS mortality data are as follows:  CALCULATED\_AGE\_UNIT  CALCULATED\_AGE  SEX  DATE\_OF\_REGISTRATION  LSOA\_OF\_RESIDENCE\_CODE  UNDERLYING\_CAUSE\_OF\_DEATH |

**Data filters**

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| 1. Field Name | **CALCULATED\_AGE\_UNIT** |
| Conditions | When CALCULATED\_AGE\_UNIT equals 2, 3 or  4 recode age to zero years |
| Rationale: | The calculated age unit is used to specify whether  the CALCULATED\_AGE field refers to years (1),  months (2), weeks (3) or days (4) of life. |
| 2. Field Name | **CALCULATED\_AGE** |
| Conditions | Is between (inclusive): 0 and 74 |
| Rationale | Combined with the recoded zero ages from CALCULATED\_AGE\_UNIT selects only those  aged under 75 years at the time of death |
| 3. Field Name | **DATE\_OF\_REGISTRATION** |
| Conditions | Is between 1 January and 31 December of the  respective calendar year inclusive. |
| Rationale | Selects only those deaths registered during the  relevant calendar year. |
| 4. Field Name | **SEX** |
| Conditions | Is equal to 1 or 2 |
| Rationale | A valid sex field is required when directly  standardising by age and sex. |
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| 5. Field Name | **LSOA\_OF\_RESIDENCE\_CODE** |
| Conditions | Is equal to a valid English Lower Super Output  Area (LSOA). |
| Rationale | This restricts data to patient’s resident in England.  A valid English LSOA starts with the letter ‘E’. |
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| 6. Field Name | **UNDERLYING\_CAUSE\_OF\_DEATH** |
| Conditions | ICD-10 codes I00-I99.  See specification document for domain 1 of the NHS Outcomes Framework |
| Rationale | Selects those whose underlying cause of death  was coded on the death certificate as  cardiovascular disease. |
| **Justifications of inclusions and exclusions**  and how these adhere to standard definitions | The standard definition of Cardiovascular disease with regards to reporting is all ICD10 – codes in chapter IX (I00 to I99) which include all diseases of the circulatory system. This is the definition used by this indicator.  Cardiovascular disease (CVD) includes all the diseases of the heart and circulation including coronary heart disease, angina, heart attack, congenital heart disease and stroke (British Heart Foundation) <https://www.bhf.org.uk/heart-health/conditions/cardiovascular-disease>  Cardiovascular diseases are a group of disorders of the heart and blood vessels (WHO) <http://www.euro.who.int/en/health-topics/noncommunicable-diseases/cardiovascular-diseases/cardiovascular-diseases2/definition-of-cardiovascular-diseases>  Persons 75 and over are excluded from the methodology to remove bias from causes of death associated with higher older age and the increasing older age population profile. |
| **Data processing** | The numerator data (mortality extract) are provided to HSCIC by ONS at record level. This is aggregated by age, gender and local authority to populate the age-standardisation model.  The denominator data (mid-year population estimates) are publicly available and published by ONS. Data are published at aggregate level by age, gender and local authority.  The European Standard Population data are publicly available and published by ONS.  The mortality rate at national, local authority and for all possible breakdowns is calculated by HSCIC using the calculation presented in section 4.3. |
| **CONSTRUCTION** |  |
| **Numerator** | Number of deaths for which cardiovascular disease is given as the underlying cause of death (ICD-10: I00 to I99), registered in the respective calendar year(s), published by ONS. |
| **Denominator** | ONS mid-year population estimates of the population under 75 years of age. |
| **Computation** | Age-Standardised Rates (ASRs)  The directly age-standardised rate 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. Explicitly:  (expressed per 100,000 population)  where:  ***wi*** is the number, or proportion, of individuals in the standard population in age group *i*; - **The European Standard Population value by age group.**  ***ri*** is the crude age-specific rate in the subject population in age group *i*, given by:  where:  ***Oi*** is the observed number of events in the subject population in age group *i*; - **Number of recorded deaths by CVD**  ***ni*** is the number of individuals in the subject population in age group *i*. – **The ONS Mid-year population estimate values by age and sex.**  Deprivation breakdown  The deprivation breakdown for this indicator has been derived using Public Health England (PHE) reference data which include adjusted Index of Multiple Deprivation (IMD) 2010 scores based on 2011 Lower Super Output Area (LSOA) boundaries. IMD 2010 scores, which were originally published by the Department for Communities and Local Government (DCLG) in 2011 for all LSOAs in England, are based on boundaries defined in 2001. In 2011, these LSOA boundaries were updated, meaning that the LSOAs no longer aligned with the IMD scores in some areas. Adjustments have therefore been made to scores in affected areas to enable their continued use with the latest LSOA boundaries. The adjusted IMD scores for 2011 LSOAs and further information regarding the methodology for the adjustments can be found at:  <http://www.apho.org.uk/resource/view.aspx?RID=125886>  The adjusted IMD scores have been used for this indicator as the mid-year population estimates used in the denominator have been re-based using data from the 2011 Census. These adjusted IMD 2010 scores do not replace DCLG's official 2010 English Indices of Deprivation, which are based on 2001 LSOA boundaries. The adjusted scores have also been used to directly assign 2011 LSOAs to deprivation deciles within England as a whole and also within English regions, counties and local authorities.  For the purpose of calculating this indicator, the reference table provided by PHE (see link above) has been used to calculate deprivation deciles in the numerator and denominator.  The numerator data sourced from the ONS mortality extract were available at postcode level for calendar years 2003 to 2012. In order to assign the IMD score to the data, 2011 LSOAs have been assigned to each record using the postcode of residence. This has been done using a postcode-to-2011 LSOA look up table that was originally sourced from ONS’s open geography portal. The deprivation deciles have then been assigned to the 2011 LSOAs using the adjusted scores reference table provided by PHE. For the 2013 calendar year 2011 LSOAs have been included in the source data. Therefore, it was not necessary to derive these using the postcode of residence. Deprivation deciles for 2013 have been directly assigned to the 2011 LSOAs already included in the data. |
| **Risk adjustment or standardisation type and methodology** | **Direct Standardisation**  *Variables and methodology:* Age  The standard population used for the direct standardisation method is the 2013 European Standard Population (ESP). The age groups (15 groups in total) used are: 0-4, 5-9,…, 70-74 (for this indicator ages 75 and above are not needed).  The same standard population is used for males, females and persons. This means that rates can be compared across gender but also that rates for persons are standardised for age only, and not for sex.  Age group indicator values are crude rates and not directly standardised. Direct standardisation to the European Standard Population is not possible at this disaggregation (age group). |
| **Justification of risk adjustment type and variables**  or why risk adjustment is not used | Where direct standardisation of an indicator is possible, when the populations involved are large enough, it is the preferred method of standardisation as it allows for comparison across breakdowns and time as differences in age have been accounted for.  Age was chosen as risk adjustment variable to account for the differences in the population by age group to ensure that comparisons can be made across geographic areas with differing population distributions. Although other variables such as gender, deprivation and ethnicity could be used to standardise, there is no reliable data source at a European level.  The European Standard Population was chosen to enable international comparison of mortality rates with other European countries. The ESP changed in 2013 from the 1976 model, to adjust for an ageing population distribution, see section 3.4. |
| **Confidence interval / control limit use and methodology** | Confidence Intervals  *Methodology:* For indicator values with a disaggregation by England, geography and deprivation for total persons the confidence intervals (at a 95% limit) are calculated using Dobson's[[6]](#footnote-4) and Byar's[[7]](#footnote-5) methods. Byar’s method is recommended for larger counts, whereas for smaller numerators (less than 389) a more exact method based on Dobson’s Poisson distribution method is used.    where:  ***O*** is the total number of observed deaths in the subject population  *Olower* and *Oupper* are the lower and upper confidence limits for the observed number of events;  When ***O*** < 389 then (Dobson),  where:  *2lower* is the 97.5th percentile value from the *2* distribution with 2*O* degrees of freedom;  *2upper* is the 2.5th percentile value from the *2* distribution with 2*O*+2 degrees of freedom.  When ***O*** >= 389 then (Byar),  where:  ***z*** is the 97.5th percentile value from the Standard Normal distribution.  **Confidence Intervals for Crude Rates**  Where the indicator values are broken down by age and gender direct standardisation is not possible and crude rates are calculated instead. Although still based on the Dobson’s and Byar’s method, in these cases 95% confidence intervals are calculated using a different methodology:  where:  ***r*** is the crude rate and and are the lower and upper confidence limits for the crude rate;  ***O*** is the total number of observed deaths in the subject population and and are the lower and upper confidence limits for the total number of observed deaths;  ***n*** is the number of individuals in the subject population.  The confidence intervals for the total number of observed deaths are given by the following formulae.  When ***O*** < 389 then,  where:  ***2lower*** is the 97.5th percentile value from the *2* distribution with 2*O* degrees of freedom;  ***2upper***is the 2.5th percentile value from the *2* distribution with 2*O*+2 degrees of freedom.  When ***O*** >= 389 then,    where:  ***z*** is the 97.5th percentile value from the Standard Normal distribution. |
| **Justification of confidence intervals / control limits used** |  |

**Presentation and Interpretation**

The indicator is published on the HSCIC Indicator Portal (<https://indicators.ic.nhs.uk/webview/>) and includes an Excel and CSV file, a domain specification document including information on this indicator and an indicator quality statement. Data output fields include:

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| Year | Calendar year |
| Period of coverage | 1/1 to 31/12 of respective calendar year |
| Breakdown | England, lower tier local authority, region, deprivation decile |
| Level | More detailed breakdown (e.g. LA code) |
| Level description | Description of more detailed breakdown |
| Gender | Person, male, female |
| Age | 5-year age group (0-74 years) |
| **Indicator value** | **Directly standardised rate as defined under ‘Direct standardisation’** |
| Lower CI | Lower limit of 95% confidence interval |
| Upper CI | Upper limit of 95% confidence interval |
| Numerator | Numerator value |
| Denominator | Denominator value |

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| **Presentation of indicator** | Link to the indicator landing page on the indicator portal: <http://indicators.ic.nhs.uk/webview/index.jsp?v=2&submode=ddi&study=http%3A%2F%2F172.16.9.26%3A80%2Fobj%2FfStudy%2FP01730&mode=documentation&top=yes>  Link to indicator data (xls): <https://indicators.ic.nhs.uk/download/Outcomes%20Framework/Data/NHSOF_1.1_I00656_D.xls>  Link to domain 1 specification document: <https://indicators.ic.nhs.uk/download/Outcomes%20Framework/Specification/NHSOF_Domain_1_S.pdf>  Link to the indicator quality statement: <https://indicators.ic.nhs.uk/download/Outcomes%20Framework/Specification/NHSOF_1.1_I00656_Q.pdf> |
| **Contextual information provided alongside indicator**  with justification | No contextual information is provided alongside the indicator value. Only the lower and upper confidence limits, the numerator (number of deaths from CVD) and the denominator are shown in the data file. |
| **Calculation and data source of contextual information** | N/A |
| **Use of bandings, benchmarks or targets**  with justification | None |
| **Banding, benchmark or target methodology**  if appropriate | The NHS Outcomes Framework does not employ bandings or benchmarks as it is not part of the purpose of the framework.  Values can be compared over time and against the England rate to see how a Local Authority is performing against its region, nationally and its neighbours. Values can also be used to review performance over time. |
| **Interpretation guidelines** | The “Indicator value” represents how many people per 100,000 have died for that particular time period and breakdown, standardised to provide a value as if the breakdown had the same age profile as the European Standard Population. This allows the value to be measured against other European countries, as well as against other breakdowns and over time.  A high under 75 mortality rate from CVD indicates a larger proportion of people are dying from cardiovascular diseases. A low under 75 mortality rate from CVD indicates a smaller proportion of people are dying from cardiovascular diseases.  A desirable outcome would be a reduction of the under 75 mortality rate for cardiovascular disease over time.  In terms of equality it would be desirable to reduce the gap in the under 75 mortality rate from cardiovascular disease between the most and least deprived areas.  Change in mortality rates  The numerator and denominator should be used in conjunction with the mortality rate when assessing rate changes to provide more contextual information, as the mortality rate should not be viewed in isolation. An increasing ‘younger’ population (denominator) can reduce morality rates or even out rate increases from the causes of death (numerator).  Changes in geographical boundaries can also have an impact on mortality rates, if for example two combining smaller geographies have different mortality rates for their underlying populations, when combined the rates become harmonised as an average for the larger area.  Direct comparison with mortality rates for periods that cover 2011 and 2014 is not advisable. There was a decrease in the number of deaths with an underlying cause coded to ‘Cardiovascular Disease’ in 2011. However, a large proportion of this decrease is caused by a correction to the coding of vascular dementia, which was coded as underlying cause CVD (I67.9) until 2010 and is now coded as underlying cause in ‘Mental Health’ deaths (F01). Further details can be found at: http://www.ons.gov.uk/ons/rel/subnational-health3/results-of-the-icd-10-v2010-bridge-coding-study--england-and-wales--2009/2009/index.html  On 8 August 2014, the ONS published ‘Impact of the Implementation of IRIS Software for ICD-10 Cause of Death Coding on Mortality Statistics, England and Wales’: <http://www.ons.gov.uk/ons/dcp171778_373602.pdf> This report details the impact of the change of coding brought about by the introduction of new coding software ICD-10 v2013 (IRIS) on the underlying causes of death condition groups or chapters. |
| **Limitations and potential bias** | Persons 75 and over are excluded from the methodology to remove bias from causes of death associated with higher older age and the increasing older age population profile.  Coding changes  Direct comparison with previous year’s mortality, prior to 2011, is not advisable. Along with the recalculation of the indicator values there have also been changes in death coding practices. Prior to 2011 vascular dementia was coded as cerebrovascular disease. (I67.9). From 2011 onwards vascular dementia is captured in mental health deaths (F01). There has been a decrease in the number of deaths with an underlying cause coded to cardiovascular disease, of which a large proportion is due to the correction to the coding of vascular dementia.  Further details can be found in the results of the ICD-10 v2010 bridge coding study from ONS at: <http://www.ons.gov.uk/ons/rel/subnational-health3/results-of-the-icd-10-v2010-bridge-coding-study--england-and-wales--2009/2009/index.html>  European Standard Population  The European Standard Population (per 100,000) methodology changed in 2013 to reflect an ageing population distribution across Europe from the 1976 base used in previous methods. This has significantly increased the mortality rates, typically doubling rates across many common causes of death including cardiovascular disease on the previous years. Indicator values were revised across the whole 10 year time series using the ESP 2013 distribution, to make previous years data comparable and to ensure consistency with other European nations.  Cause of death registration  Mortality statistics are produced based on the deaths **registered** in a particular reference period, rather than deaths occurring in a particular period. This allows for more timely publication of complete statistics (6 months after the end of the data year) and ensures full quality assurance has been conducted by ONS. But means that annual figures include some ‘late’ death registrations that occurred in years prior to the reference year (approximately 4.5%).  Mortality statistics based on the year of **occurrence** would be much less timely, as they are not available until later (autumn). There will always be a number of late death registrations for previous years that will be included in the annual extract of death registrations.  Registrations are not entirely comparable to occurrences; however the differences are relatively minor and figures are broadly comparable for most causes. Death registrations continue to be used as the primary source for mortality rates in health statistics. |
| **Improvement actions** | This indicator requires careful interpretation and should not be viewed in isolation, but instead be considered alongside information from other indicators and alternative sources.  It is expected that the Department of Health and NHS England will use this indicator to identify how improvements in care are being delivered, including the desire to reduce mortality rates in cardiovascular disease. Improving the health of the population would lead to fewer deaths from cardiovascular disease.  Department of Health would like to reduce the amount of cardiovascular disease and may consider policy responses that are in accordance with NICE Quality Standards 2, 9, 10, 28, 29, 68, 93, 99, 100 (stroke, heart failure, COPD, VTE, Hypertension, coronary syndromes, myocardial infarction, cardiovascular risk assessment).  More people could live longer and with a better quality of life if they were supported to adopt healthy lifestyles – particularly quitting smoking, eating more healthily and being more physically active. Evidence shows that these risks factors are clustered in the more disadvantaged groups of the population. Making progress in tackling these issues and reducing health inequalities will be part of local authorities’ (LAs) public health responsibilities from April 2013.[[8]](#footnote-6) The NHS Health Check Programme[[9]](#footnote-7) has the potential to identify those at risk of CVD based on lifestyle factors, and this indicator could be used alongside statistics on the number of NHS Health Checks performed to identify poor performing areas requiring a more targeted approach to improve health outcomes with regards to CVD.  The Department of Health report: “Cardiovascular Disease Outcomes Strategy, Improving outcomes for people with or at risk of cardiovascular disease”6 includes a list of ambitions and suggested improvement actions that can use the values in this indicator to better target resources. |
| **Evidence of variability** | At the national level, the under 75 mortality rate for CVD for all ages at person level was 76.6 per 100,000 population in 2013. When broken down by gender the rates were 47.3 and 107.5 for females and males respectively.  When the mortality rate is broken down by 324 lower tier local authorities of residence (Isles of Scilly local authority has been merged with Cornwall and City of London local authority has been merged with Hackney due to small numbers), the mortality rates at person-level range from 32.7 in North Dorset to 133.6 in Manchester.  When the mortality rate was disaggregated by IMD deprivation decile, the least deprived decile (10) rate was 44.2 and the most deprived decile (1) rate was 147.0. |
| **RISKS** |  |
| **Similar existing indicators** | NHS OF:  1.2 Under 75 mortality rate from respiratory disease  1.3 Under 75 mortality rate from liver disease  1.4 Under 75 mortality rate from cancer  PHOF:  4.4i - Under 75 mortality rate from all cardiovascular diseases  4.4ii - Under 75 mortality rate from cardiovascular diseases considered preventable  The Public Health Outcomes Framework (PHOF) uses a different age-standardisation model to the NHSOF, based on pooled data from 3 year periods, as opposed to single calendar year data for the indicator.  CCG OIS Indicator:  1.2 Under 75 mortality rate from cardiovascular disease  Compendium of Population Health Indicators:  Mortality from all circulatory diseases, directly age standardised rate by deprivation quintile, persons under 75 years (pooled 3 years) |

**Risks (continued)**

**Coherence and comparability**

The methodology of all four under 75 mortality indicators in the NHS Outcomes Framework is consistent and all indicators are calculated using the same source data.

The difference between the NHS OF indicator 1.1 and the CCG OIS indicator 1.2 is the level of reporting as well as the difference in populations. The NHS OF indicator has geographic breakdowns for lower tier local authority, region, and national, whereas the CCG OIS indicator is only presented at CCG of responsibility level.

The NHS Outcomes Framework includes four under 75 mortality indicators for the four major causes of death. While 1.1 looks at the under 75 mortality from cardiovascular disease, 1.2 to 1.4 look at the under 75 mortality from respiratory disease, liver disease and cancer respectively.

Therefore, the only difference between these four indicators is the underlying cause of death. The methodology, denominator and population remain the same.

PHOF indicator 4.4i shares the same methodology as NHS OF 1.1 with the exception that the rates are based on pooled data for three year periods as opposed to single years. PHOF indicator 4.4ii is not comparable as the selection of ICD-10 codes set is different (preventable forms of cardiovascular disease only).

The CCG OIS indicator 1.2 is the equivalent to NHS OF indicator 1.1. The only differences between these indicators are:

* CCG OIS 1.2 is published at CCG level
* CCG OIS 1.2 using registered list sizes and not resident populations
* CCG OIS 1.2 uses the England mid-year population estimates as the standard population whereas NOF 1.1 using the European Standard Population

The Compendium Indicator ‘Mortality from all circulatory diseases’ uses a different standardisation variable.

Various Circulatory System Disease indicators exist within the Compendium:

|  |
| --- |
| Mortality from coronary heart disease: crude death rate, by age group, 3-year average, MFP |
| Mortality from coronary heart disease: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from coronary heart disease: directly standardised rate, <65 years, 3-year average, MFP |
| Mortality from coronary heart disease: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from coronary heart disease: directly standardised rate, 65-74 years, 3-year average, MFP |
| Mortality from coronary heart disease: directly standardised rate, all ages, annual trend, MFP |
| Mortality from coronary heart disease: directly standardised rate, <65 years, annual trend, MFP |
| Mortality from coronary heart disease: directly standardised rate, <75 years, annual trend, MFP |
| Mortality from coronary heart disease: directly standardised rate, 65-74 years, annual trend, MFP |
| Mortality from coronary heart disease: number, by age group, annual, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), <65 years, 3-year average, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), <75 years, 3-year average, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), 65-74 years, 3-year average, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), all ages, annual trend, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), <65 years, annual trend, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), <75 years, annual trend, MFP |
| Mortality from coronary heart disease: indirectly standardised ratio (SMR), 65-74 years, annual trend, MFP |
| Mortality from acute myocardial infarction: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from acute myocardial infarction: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from acute myocardial infarction: directly standardised rate, 35-64 years, 3-year average, MFP |
| Mortality from acute myocardial infarction: directly standardised rate, all ages, annual trend, MFP |
| Mortality from acute myocardial infarction: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from acute myocardial infarction: indirectly standardised ratio (SMR), <75 years, 3-year average, MFP |
| Mortality from acute myocardial infarction: indirectly standardised ratio (SMR), 35-64 years, 3-year average, MFP |
| Mortality from acute myocardial infarction: indirectly standardised ratio (SMR), all ages, annual trend, MFP |
| Mortality from hypertensive disease: crude death rate, by age group, 3-year average, MFP |
| Mortality from hypertensive disease: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from hypertensive disease: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from hypertensive disease: directly standardised rate, all ages, annual trend, MFP |
| Mortality from hypertensive disease: directly standardised rate, <75 years, annual trend, MFP |
| Mortality from hypertensive disease: number, by age group, annual, MFP |
| Mortality from hypertensive disease: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from hypertensive disease: indirectly standardised ratio (SMR), <75 years, 3-year average, MFP |
| Mortality from hypertensive disease: indirectly standardised ratio (SMR), all ages, annual trend, MFP |
| Mortality from hypertensive disease: indirectly standardised ratio (SMR), <75 years, annual trend, MFP |
| Years of life lost due to mortality from coronary heart disease: crude rate, <75 years, 3-year average, MFP |
| Years of life lost due to mortality from coronary heart disease: directly standardised rate, <75 years, 3-year average, MFP |
| Years of life lost due to mortality from hypertensive disease: crude rate, <75 years, 3-year average, MFP |
| Years of life lost due to mortality from hypertensive disease: directly standardised rate, <75 years, 3-year average, MFP |
| Years of life lost due to mortality from stroke: crude rate, <75 years, 3-year average, MFP |
| Years of life lost due to mortality from stroke: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from all circulatory diseases: crude death rate, by age group, 3-year average, MFP |
| Mortality from all circulatory diseases: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from all circulatory diseases: directly standardised rate, <65 years, 3-year average, MFP |
| Mortality from all circulatory diseases: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from all circulatory diseases: directly standardised rate, 65-74 years, 3-year average, MFP |
| Mortality from all circulatory diseases: directly standardised rate, all ages, annual trend, MFP |
| Mortality from all circulatory diseases: directly standardised rate, <65 years, annual trend, MFP |
| Mortality from all circulatory diseases: directly standardised rate, <75 years, annual trend, MFP |
| Mortality from all circulatory diseases: directly standardised rate, 65-74 years, annual trend, MFP |
| Mortality from all circulatory diseases: number, by age group, annual, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), <65 years, 3-year average, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), <75 years, 3-year average, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), 65-74 years, 3-year average, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), all ages, annual trend, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), <65 years, annual trend, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), <75 years, annual trend, MFP |
| Mortality from all circulatory diseases: indirectly standardised ratio (SMR), 65-74 years, annual trend, MFP |
| Years of life lost due to mortality from all circulatory diseases: crude rate, <75 years, 3-year average, MFP |
| Years of life lost due to mortality from all circulatory diseases: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from chronic rheumatic heart disease: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from chronic rheumatic heart disease: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from chronic rheumatic heart disease: directly standardised rate, 5-44 years, 3-year average, MFP |
| Mortality from chronic rheumatic heart disease: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from chronic rheumatic heart disease: indirectly standardised ratio (SMR), <75 years, 3-year average, MFP |
| Mortality from chronic rheumatic heart disease: indirectly standardised ratio (SMR), 5-44 years, 3-year average, MFP |
| Mortality from stroke: crude death rate, by age group, 3-year average, MFP |
| Mortality from stroke: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from stroke: directly standardised rate, <65 years, 3-year average, MFP |
| Mortality from stroke: directly standardised rate, <75 years, 3-year average, MFP |
| Mortality from stroke: directly standardised rate, 35-64 years, 3-year average, MFP |
| Mortality from stroke: directly standardised rate, 65-74 years, 3-year average, MFP |
| Mortality from stroke: directly standardised rate, all ages, annual trend, MFP |
| Mortality from stroke: directly standardised rate, <65 years, annual trend, MFP |
| Mortality from stroke: directly standardised rate, <75 years, annual trend, MFP |
| Mortality from stroke: directly standardised rate, 65-74 years, annual trend, MFP |
| Mortality from stroke: number, by age group, annual, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), <65 years, 3-year average, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), <75 years, 3-year average, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), 35-64 years, 3-year average, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), 65-74 years, 3-year average, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), all ages, annual trend, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), <65 years, annual trend, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), <75 years, annual trend, MFP |
| Mortality from stroke: indirectly standardised ratio (SMR), 65-74 years, annual trend, MFP |
| Mortality from ischaemic heart disease other than acute myocardial infarction: directly standardised rate, all ages, 3-year average, MFP |
| Mortality from ischaemic heart disease other than acute myocardial infarction: directly standardised rate, 35-64 years, 3-year average, MFP |
| Mortality from ischaemic heart disease other than acute myocardial infarction: indirectly standardised ratio (SMR), all ages, 3-year average, MFP |
| Mortality from ischaemic heart disease other than acute myocardial infarction: indirectly standardised ratio (SMR), 35-64 years, 3-year average, MFP |
| Emergency hospital admissions: stroke: indirectly standardised rate, all ages, annual trend, F |
| Emergency hospital admissions: stroke: indirectly standardised rate, all ages, annual trend, M |
| Emergency hospital admissions: stroke: indirectly standardised rate, all ages, annual trend, P |
| Prevalence: coronary heart disease: percent, all ages, annual, P |
| Blood pressure in patients with coronary heart disease: percent, all ages, annual, P |
| Cholesterol levels in patients with coronary heart disease: percent, all ages, annual, P |
| Antiplatelet / anti-coagulant therapy for patients with coronary heart disease: percent, all ages, annual, P |
| ACE inhibitor therapy for patients with myocardial infarction: percent, all ages, annual, P |
| Prevalence: stroke or transient ischaemic attack: percent, all ages, annual, P |
| Referral of patients with stroke for further investigation: percent, all ages, annual, P |
| Blood pressure in patients with stroke or transient ischaemic attack: percent, all ages, annual, P |
| Cholesterol levels in patients with stroke or transient ischaemic attack: percent, all ages, annual, P |
| Antiplatelet / anti-coagulant therapy for patients with stroke or transient ischaemic attack: percent, all ages, annual, P |
| Prevalence: hypertension: percent, all ages, annual, P |
| Controlled high blood pressure in patients with hypertension: percent, all ages, annual, P |
| Prevalence: heart failure: percent, all ages, annual, P |
| Prevalence: heart failure confirmed by echocardiogram or specialist assessment: percent, all ages, annual, P |
| ACE inhibitor therapy for patients with heart failure due to left ventricular dysfunction : percent, all ages, annual, P |
| Prevalence: atrial fibrillation: percent, all ages, annual, P |
| ACE inhibitor and beta blocker therapy for patients with heart failure due to left ventricular dysfunction : percent, all ages, annual, P |
| Lifestyle advice for patients with hypertension: percent, all ages, annual, P |

The Compendium Indicators are more specific than this indicator but are related to conditions that form part of Cardiovascular Disease.

Indicator 1.1 also includes some deaths that are not included in the ONS definition of amenable mortality (as used in PYLL indicators 1a.i and 1a.ii) but some of which are nonetheless amenable. Hence, the under 75 mortality indicators are to that extent complementary to 1a.i and 1a.ii. Specifically, not all of the deaths under 75 from the major diseases are counted as amenable – only 77% of CVD, 27% of respiratory disease, 23% of cancer and 2% of liver disease deaths are considered amenable. However, the NHS also contributes to reducing premature deaths from causes not considered amenable. The inclusion of the under-75 mortality indicators reflects the contribution that the NHS can make to outcomes in these areas. The NHS contribution will include encouraging healthy behaviours and uptake of screening, in addition to providing appropriate diagnosis, care planning and treatment.

|  |  |
| --- | --- |
| **RISKS (continued)** |  |
| **Undesired behaviours and/or gaming** | None identified |
| **Approach to indicator review** | The Department of Health perform an annual review of the NHS Outcomes Framework and release a summary of all indicators with any retirements, additions and changes.  https://www.gov.uk/government/publications/nhs-outcomes-framework-2015-to-2016 |
| **Disclosure control** | Denominator figures sourced from the relevant ONS mid-year population estimates are rounded to the nearest 100.  For 2013 and onwards combined indicator values have been calculated for Cornwall and Isles of Scilly and Hackney and City of London to avoid a base population of less than 5000, which allows all numerator figures to be published. |
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**Final Assurance Rating from the Indicator Governance Board**

|  |  |  |
| --- | --- | --- |
| Clarity |  |  |
| Rationale |  |  |
| Data |  |  |
| Construction |  |  |
| Presentation and Interpretation |  |  |
| Risks and Usefulness |  |  |

|  |  |
| --- | --- |
| **Outcome** |  |

|  |
| --- |
| **Key findings from Assurance** |
| * Key finding 1 * Key finding 2 * Key finding 3 |

|  |  |
| --- | --- |
| **Approval date** | Click here to enter a date. |
| **Review date** | Click here to enter a date. |

**Details of Methodology Appraisal – 14/01/2016**

|  |  |
| --- | --- |
| **Methodology appraisal body** | HSCIC's Indicator & Methodology Assurance Service |
| **Reason for assessment** | Scheduled review (review date reached) |
| **Iteration** | 1st MRG meeting |

***Suggested Assurance Rating by Methodology Appraisal Body***

|  |  |  |
| --- | --- | --- |
| **Ratings Against Assessment Criteria** |  | **Overall Rating** |
| Clarity | **-** | **Pending** |
| Rationale | **-** |  |
| Data | **-** |  |
| Construction | **-** |  |
| Presentation and Interpretation | **-** |  |
| Risks and Usefulness | **-** |  |

**Summary Recommendation from MRG:**

MRG accepted the contents of the application form and did not identify any areas of improvement. It was appreciated by the Group that this is a long-established indicator.  
  
However, the Group did raise concern that the indicator is being presented at Local Authority level as well as a National level as there are already existing cardiovascular mortality indicators reporting at this level within the Public Health Outcomes Framework (PHOF) and Compendium. It was noted that this NHS OF indicator presents results based on 1 year of data, whereas the PHOF indicator uses 3-year rolling averages. In producing this indicator at Local Authority level, the user is presented with two figures reporting different figures, which the group agreed posed a risk.  
  
It is MRG’s understanding that the purpose of the NHS Outcomes Framework is to provide a national overview reflecting the current landscape of the health and care system, and therefore to disaggregate the data into further component parts appears to diverge from this purpose. The Group identified that work needed to be undertaken to ensure that the frameworks align, and do not unnecessarily report the same measure. It is recommended that this issue of two outcome framework measure reporting the same measure should be taken to the Outcome Frameworks Technical Advisory Group (OFTAG).  
  
On this basis, the group have deferred their rating and do not recommend the indicator for inclusion in the Library of Quality Assured Indicators until this issue is resolved.

**What do the Assurance Ratings mean?**

|  |  |  |
| --- | --- | --- |
|  | **Rating** | **Description** |
|  | **Fit for use** | This indicator can be used with confidence that it is constructed in a sound manner that is fit for purpose. |
|  | **Fit for use with caveats** | The indicator is fit for use; however, users should be aware of caveats and/or recommendations for improvement that have been identified during the assurance process. |
|  | **Use with caution – data quality issue** | The indicator is based on a sound methodology for which the assurance process endorse the use, however issues have been identified with the national data source which have implications for its use as an indicator. |
|  | **Not fit for use** | Issues have been identified with the indicator which have resulted in the assurance process currently not endorsing its use as a quality indicator. |
|  | **Not enough information provided** | There has not been enough information supplied to the assurance process to be able to accurately give the indicator a level of assurance. |

**Appraisal Log**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Clarity** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
|  |  |  |  |  |  |  |
|  | **Rationale** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
|  |  |  |  |  |  |  |
|  | **Data** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
|  |  |  |  |  |  |  |
|  | **Construction** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
|  |  |  |  |  |  |  |
|  | **Presentation and Interpretation** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
|  |  |  |  |  |  |  |
|  | **Risks and Usefulness** |  |  |  |  |  |
| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 6a | The Group did raise concern that the indicator is being presented at Local Authority level as well as a National level as there are already existing cardiovascular mortality indicators reporting at this level within the Public Health Outcomes Framework (PHOF) and Compendium. It was noted that this NHS OF indicator presents results based on 1 year of data, whereas the PHOF indicator uses 3-year rolling averages. In producing this indicator at Local Authority level, the user is presented with two figures reporting different figures, which the group agreed posed a risk. | 14/01/16 |  |  |  |  |
| 6b | It is MRG’s understanding that the purpose of the NHS Outcomes Framework is to provide a national overview reflecting the current landscape of the health and care system, and therefore to disaggregate the data into further component parts appears to diverge from this purpose. The Group identified that work needed to be undertaken to ensure that the frameworks align, and do not unnecessarily report the same measure. It is recommended that this issue of two outcome framework measure reporting the same measure should be taken to the Outcome Frameworks Technical Advisory Group (OFTAG). | 14/01/16 |  |  |  |  |

**Any complaints or appeals against the decisions made during the assurance process should be made to the Indicator & Methodology Assurance Service (IMAS) Team at HSCIC. Likewise, if you are unclear regarding any of the recommendations in this report, or have any queries about the assurance process in general, please contact the IMAS team.**

**Indicator and Methodology Assurance Service**

**Health and Social Care Information Centre**

**1 Trevelyan Square, Boar Lane,**

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**LS1 6AE.**

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**Website:** [**http://www.hscic.gov.uk/article/1674/Indicator-Assurance-Service**](http://www.hscic.gov.uk/article/1674/Indicator-Assurance-Service)

1. [↑](#endnote-ref-1)
2. [↑](#endnote-ref-2)
3. <http://ons.gov.uk/ons/taxonomy/index.html?nscl=Mortality+Rates> [↑](#footnote-ref-1)
4. <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/mid-2014/index.html> [↑](#footnote-ref-2)
5. <http://www.ons.gov.uk/ons/guide-method/user-guidance/health-and-life-events/revised-european-standard-population-2013--2013-esp-/index.html> [↑](#footnote-ref-3)
6. Dobson A et al. Confidence intervals for weighted sums of Poisson parameters. Stat Med 1991;10:457-62 [↑](#footnote-ref-4)
7. 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. [↑](#footnote-ref-5)
8. <https://www.gov.uk/government/publications/improving-cardiovascular-disease-outcomes-strategy> [↑](#footnote-ref-6)
9. <http://www.healthcheck.nhs.uk/> [↑](#footnote-ref-7)