CCG Outcome Indicator Set

Indicator 1.18
Percentage of cancers detected at stage 1 and 2

Domain 1
Preventing people from dying prematurely

Indicator specification

Version: 1.4
Date: June 2017
Author: Clinical Indicators Team
**Document Management**

**Revision History**

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Summary of Changes</th>
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<tr>
<td>1.0</td>
<td>September 2014</td>
<td>Initial release</td>
</tr>
<tr>
<td>1.1</td>
<td>June 2015</td>
<td>Revised format</td>
</tr>
<tr>
<td>1.2</td>
<td>December 2015</td>
<td>Error in ICD-10 topology codes for ovary and uterus corrected within the Appendix</td>
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<tr>
<td>1.3</td>
<td>June 2016</td>
<td>Updates to reflect change of data source</td>
</tr>
<tr>
<td>1.4</td>
<td>June 2017</td>
<td>Format change. Updated output column names, added period of coverage column.</td>
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**Indicator assurance**

<table>
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<th>Status</th>
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<tbody>
<tr>
<td>Indicator Governance Board</td>
<td>Assured 22.07.2014</td>
</tr>
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The methodology for this indicator has been developed in partnership with Public Health England’s National Cancer Registration and Analysis Service (NCRAS).

NCRAS works with partners to deliver world-class population health cancer intelligence. This drives improvements in cancer awareness, prevention, diagnosis and clinical outcomes. By improving and using the information collected about cancer patients for analysis, publication and research NCRAS helps improve local, national and international public health systems.
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Overview

Indicator title
Percentage of cancers detected at stage 1 and 2

Indicator family name
CCG Outcomes Indicator Set (OIS) Domain 1 - Preventing people from dying prematurely

Condition / Topic area
Cancer

NHS Digital Indicator Portal code
I01969

Detailed Descriptor

Plain English description
CCG OIS 1.18 measures the number of new cases of cancer which were diagnosed at stage 1 or 2.

Technical description
The percentage of new cases of cancer which were diagnosed at stage 1 or 2 for the specific cancer sites, morphologies and behaviour: invasive malignancies of breast, prostate, colorectal, lung, bladder, kidney, ovary, uterus, non-Hodgkin lymphoma and invasive melanomas of skin, given by CCG.

This indicator relates to a subset of the cancers covered by CCG indicator 1.17 Record of stage of cancer at diagnosis.
Data Sources

National Cancer Registration dataset based on a snapshot of Public Health England’s Cancer Analysis System, available at:
http://www.ncras.nhs.uk/

(Previously the National Cancer Intelligence Network (NCIN) http://www.ncin.org.uk/home)

Postcode to CCG mappings have been derived from the National Statistics Postcode Lookup (NSPL), dated May 2015, maintained by the Office for National Statistics (ONS), available at:
https://data.gov.uk/dataset/national-statistics-postcode-lookup-uk

Construction

Calculation Methodology

Introduction

This indicator calculates the percentage of new cases of cancer which were diagnosed at stage 1 or 2 for the specific cancer sites, morphologies and behaviour: invasive malignancies or breast, prostate, colorectal, lung, bladder, kidney, ovary, uterus, non-Hodgkin lymphoma and invasive melanomas of skin, given by CCG.

This indicator relates to a subset of the cancers covered by CCG indicator 1.17 Record of stage of cancer at diagnosis.

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

Data Fields

The data fields that are supplied from the cancer registry dataset are shown below. Details of the cancer registration data is available at: http://www.ncras.nhs.uk/patientinfo/

- ORGANISATION CODE
- ORGANISATION
- PERIOD
- C1.18 DENOMINATOR
- C1.18 NUMERATOR
- CANCER DETECTED AT EARLY STAGE PERCENTAGE
- EARLY FLAG LCI
- EARLY FLAG UCI

Data Filter

Only people resident in England are included in the indicator. Non-residents that are treated in England are excluded.
The filters applied to the cancer registration dataset held in PHE’s National Cancer Registration and Analysis Service (NCRAS) database to produce the indicator are detailed below. Variables are capitalised and encased in square brackets e.g. [DIAGNOSISYEAR]. The extract was taken from the AV_TUMOUR table based on a NCRAS snapshot.

**Denominator**

Cancer registry records where the following criteria are met:

1. **Field Name** [DIAGNOSISYEAR]  
   **Conditions** Is the respective diagnosis year  
   **Rationale** Selects patient records where the patient is diagnosed within the year of interest

2. **Field Name** [POSTCODE]  
   **Conditions** Is in England  
   **Rationale** Selects patient records where the patient is resident in England, such that the postcode can be found in the postcode lookup and associated with an English CCG

3. **Field Name** Site of tumour in body [SITE_ICD10_O2_3CHAR]  
   **Conditions** Is equal to C18-C20, C34, C43, C50, C54, C56, C61, C64, C67 or C82-C85  
   **Rationale** Selects patient records where the cancer type is Breast, Prostate, Colorectal, Lung, Bladder, Kidney, Ovary, Uterus, Skin or Non-Hodgkins Lymphoma

4. **Field Name** STATUSOFREGISTRATION  
   **Conditions** Is equal to ‘F’  
   **Rationale** Only registrations that are finalised are included

**Numerator**

Of the denominator, patient records where the following criteria are met:  
The first character of [STAGE_BEST] is one of ‘1’ or ‘2’.

**CCG mapping**

Code of organisation is mapped from the National Statistics Postcode Lookup based on the [POSTCODE] of the patient at the time of diagnosis.

**Calculation**

This indicator is calculated as a percentage, received pre-calculated from NCRAS

**Denominator**
The number of new cases of cancer diagnosed during the respective year, at any stage or unknown stage, for the specific cancer sites, morphologies and behaviour: invasive malignancies of breast, prostate, colorectal, lung, bladder, kidney, ovary, uterus, non-Hodgkin lymphoma and invasive melanomas of skin.

The full list of ICD-10 topology codes is available in Appendix 1.

**Numerator**

Of cases of cancer in the denominator, the number diagnosed at stage 1 or 2.

**Confidence Intervals**

Confidence intervals are calculated using the Wilson Score method, as specified in the ‘Commonly used public health statistics and their confidence intervals’ (PHE, March 2008)\(^1\).

The formulae for the \((1 – α)\)% confidence interval limits for the proportion \(p\) are:

\[
\hat{p}_{\text{lower}} = \frac{O + z^2 - z\sqrt{z^2 + 4Oq}}{2(n + z^2)}
\]

\[
\hat{p}_{\text{upper}} = \frac{O + z^2 + z\sqrt{z^2 + 4Oq}}{2(n + z^2)}
\]

where:

\(O\) is the observed number of individuals in the sample/population having the specified characteristic (i.e., the numerator);

\(n\) is the total number of individuals in the sample/population (i.e., the denominator);

\(q = (1 - p)\) is the proportion without the specified characteristic;

\(z\) is the 100\((1 - α/2)\)th percentile value from the Standard Normal distribution. For example for a 95% confidence interval, \(α = 0.05\), and \(z = 1.96\) (i.e. the 97.5\(^{th}\) percentile value from the Standard Normal distribution).

**Presentation**

**Breakdowns**

**Time periods**

Calendar year data from 2012 onwards

**Demographic**

None

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Geographic
England
CCG

Disclosure control
When publishing the data, if the indicator is calculated from a numerator of 1 to 5, the value is suppressed to ensure an individual's identity is not at risk of being disclosed. If there is only one value suppressed in this way, the percentage based upon the next lowest numerator is also suppressed; this reduces the risk of the first suppressed number being identifiable in isolation. Percentages are rounded to one decimal place before publication.
## Excel and CSV output

<table>
<thead>
<tr>
<th>Column name</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting period</td>
<td>Calendar year</td>
</tr>
<tr>
<td>Period of coverage</td>
<td>Calendar year</td>
</tr>
<tr>
<td>Breakdown</td>
<td>National (England), CCG</td>
</tr>
<tr>
<td>ONS code</td>
<td>Office for National Statistics geography code</td>
</tr>
<tr>
<td>Level</td>
<td>CCG code, national code</td>
</tr>
<tr>
<td>Level description</td>
<td>CCG name, England</td>
</tr>
<tr>
<td>Indicator value</td>
<td>Percentage of new cases of cancer diagnosed at stage 1 or 2</td>
</tr>
<tr>
<td>CI lower</td>
<td>95% lower confidence limit</td>
</tr>
<tr>
<td>CI upper</td>
<td>95% upper confidence limit</td>
</tr>
<tr>
<td>Denominator</td>
<td>The number of new cases of cancer diagnosed during the respective year</td>
</tr>
<tr>
<td>Numerator</td>
<td>The number of new cases of cancer diagnosed at stage 1 or 2</td>
</tr>
</tbody>
</table>
Appendices

Appendix 1 – ICD-10 topology codes

Breast – C50
Prostate – C61
Colorectal – C18 – C20
Lung – C34
Bladder – C67
Kidney – C64
Ovary – C56
Uterus – C54
Skin – C43
Non-Hodgkin Lymphoma – C82 – C85