**NHS Digital**

**Indicator Supporting Documentation**

**IAP00069 Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s**

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| FIELD | CONTENTS |
| IAP Code | IAP00069 |
| Title | Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s |
| Published by | NHS Digital |
| Reporting period | Quarterly |
| Geographical Coverage | England |
| Reporting level(s) | CCG |
| Based on data from | Hospital Episode Statistics & National Health Application and Infrastructure Services, NHS Digital |
| Contact Author Name | Clinical Indicators Team, NHS Digital |
| Contact Author Email | clinical.indicators@nhs.net |
| Rating | Fit for use with caveats |
| Assurance date | 13/09/2018 |
| Review date | 13/09/2023 |
| Indicator set | CCGOIS |
| Brief Description  | This indicator is to measure effective management and reduce serious deterioration in young people with specific long-term conditions. Active management of these conditions can prevent acute exacerbations and reduce the need for emergency hospital admission.  |
| Purpose | The intent of this indicator is to measure effective management and reduce serious deterioration in young people with specific long-term conditions. Active management of these conditions can prevent acute exacerbations and reduce the need for emergency hospital admission.  |
| Definition | Directly age and sex standardised admission rate for unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s per 100,000 registered patients, 95% confidence intervals (CI).Rates are presented at one decimal place. |
| Data Source | Numerator – Hospital Episode Statistics Admitted Patient Care (HES APC), provided by NHS Digital<https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistic>. Denominator – Registered patient counts by single year of age and sex from the National Health Application and Infrastructure Services NHAIS), commonly known as ‘Exeter’ System, provided by NHS Digital; extracted annually on 1 April for the forthcoming financial year<https://digital.nhs.uk/services/systems-and-service-delivery> Standard Population – European Standard Population (ESP) 2013 |
| Numerator | The number of finished and unfinished admission episodes, excluding transfers, for patients under 19 with an emergency method of admission and with a primary diagnosis for asthma, epilepsy or diabetes.The indicator is based on the primary diagnosis field only which is defined as follows: 1. The main condition treated or investigated during the relevant episode of healthcare, and
2. Where there is no definitive diagnosis, the main symptom, abnormal findings or problem.

In the case of the conditions used within this indicator, it is likely that asthma, diabetes or epilepsy would always be coded as a comorbidity on a person’s record, even if not the main reason for admission, because it is relevant to their care whilst in hospital. As such, it is not appropriate to include patients with a secondary diagnosis of one of these conditions for this reason, as it could potentially inflate the figures. |
| Denominator | CCG level count of patients registered with the constituent GP Practices extracted from NHAIS (Exeter) Systems.Counts of registered patients are extracted on 1st April each year, and GP practices are mapped to CCGs using the mapping on this date. When calculating indicators, the count of registered patients and the GP to CCG mapping are taken from the 1st April within the specific time period. For example, the 12-month period July 2016 to June 2017 would use the 1st April 2017 registered patient counts and the GP to CCG map as it was on this date. |
| Calculation | In both instances data is filtered as described, summed / counted and grouped by CCG. The coding to complete these extracts and aggregations are completed using database query tools. |
| Interpretation Guidelines | GP registered patients (denominator) and admission episode counts (numerator) are presented for each CCG, as well as at a national level to provide further information. 95% confidence intervals are also provided for the DSRs for further information.CCGs can determine what good or bad performance may be, potentially benchmarking against other CCGs combined with local knowledge as to how services are run and any local circumstances that may influence rates. |
| Caveats | There are inconsistencies in how hospitals record patients who receive daycase emergency care. Some hospitals record these patients as an emergency admission, where others do not. There is no guidance to clarify how these patients should be recorded. In November 2017, NHS England and NHS Improvement established a steering group to address issues around daycase emergency care, including the possibility of creating a new dataset relating to this type of care. |

**Indicator Submission Form (IAP00069)**

Section 1: Introduction and Overview

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| **1.1 Indicator title** |  | **1.2 Submission date** | 14/06/2018 |
| **1.3 Requesting organisation** | NHS Digital | **1.4 Request** | **Renewal** |
| **1.5 Topic area** | Hospital admissions | **1.6 SRO / Sponsor** | Name: Richard OwenTitle: Head of Quality StrategyEmail: richard.owen4@nhs.net |
| **1.7 Frequency of reporting** | Quarterly | **1.8 Indicator owner** | Name: Clinical Indicators TeamTitle: NHS DigitalEmail: clinical.indicators@nhs.net  |
| **1.9 Alternate contact details** | Name: n/aTitle: n/aEmail: n/a | **1.10 Set** | CCGOIS |
| **1.11 Domain** | Domain 2 Enhancing quality of life | **1.12 Target assurance date** | 19/09/2018 |
|  |  | **Explain if “Other”** |  |

Section 2: Rationale

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| **2.1 Why is this indicator needed and why is it important that it be measured?** | The intent of this indicator is to measure effective management and reduce serious deterioration in young people with specific long-term conditions. Active management of these conditions can prevent acute exacerbations and reduce the need for emergency hospital admission. The above information is as provided by NHS England on their website. The technical specification on the site is the most recent available for the Clinical Commissioning Group Outcomes Indicator Set (CCG OIS). <https://www.england.nhs.uk/resources/resources-for-ccgs/ccg-out-tool/ccg-ois/> The CCG OIS indicators were originally commissioned by NHS England; however, NHS England has not recommissioned these indicators as they are awaiting the outcome of the Kings Fund Report. In 2016 The King’s Fund were commissioned by the Department of Health and Social Care to conduct a review of how NHS performance frameworks are used, specifically the NHS Outcomes Framework (NHS OF), the CCG Outcomes Indicator Set (CCG OIS) and the CCG Improvement and Assessment Framework (IAF). The overall aim was to understand how they are used, ensure they remain relevant and examine whether rationalisation of the frameworks would improve their use by CCGs and thereby their impact. The results of this report have never been published and NHS Digital have continued to publish the framework indicators to ensure continuity in provision of data until such point that a decision is made as to their future. |
| **2.2 Who would use this indicator and why?***For example, performance monitoring or as a management tool to prompt further investigation* | The intended audience for the indicator is CCGs, the Department of Health and Social Care, provider managers, commissioning managers, clinicians, patients and the public.It is expected that CCGs will use this to identify how improvements in care and the desired reduction in emergency hospital admissions will be delivered. |
| **2.3 Is there clinical evidence (such as NICE) or professional opinion to support the need for this indicator?** | NHS Digital worked in partnership with NHS England and the National Institute for Health and Care Excellence (NICE) on the development of the indicator set. The NICE CCG OIS Advisory Committee considers the suitability of a range of indicators and makes recommendations to NHS England who decide on the final set of indicators that are used.At the time of initial implementation, the indicator built on the definitions used in the National Child and Maternal Health Intelligence Indicators and the list of conditions included in the definition was rigorously reviewed for the purposes of this set of indicators. Extensive clinical advice on the conditions to be included in the definition was also sought. The coding definitions included within this indicator remain consistent with those currently used by other organisations such as Public Health England (PHE). |
| **2.4 Which governmental strategies or policies support the use of this indicator?** | As above |
| **2.5 Is there a relationship to other existing indicators?***For example, rationale for a new framework and how it fits in or if part of an existing framework, how does the indicator meet a different need?* | The indicator forms part of the CCG OIS and forms one of a number of emergency admissions indicators within the indicator set. The methodology applied is consistent with these other emergency admission indicators. One such indicator has recently (May 2018) been approved by the Information Governance Board (IGB) as fit for use and the methodology outlined in this document remains predominantly unchanged from its initial assurance to continue alignment across the framework. The only change implemented is a change to the standard population, and again, this is consistent with the change made and accepted for indicator 2.6.  |
| **2.6 Comparability to other existing indicators***If similar, include justification as to why an additional indicator is required* | PHE publish similar indicators for each of these conditions individually, the framework indicator provides a composite rate. |

Section 3: data

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| **3.1 What is the source of the data and why should it be used?***For each dataset, justify the inclusions and exclusions* | **Denominator** – Registered patient counts by single year of age and sex from the National Health Application and Infrastructure Services NHAIS), commonly known as ‘Exeter’ System, provided by NHS Digital; extracted annually on 1 April for the forthcoming financial year<https://digital.nhs.uk/services/systems-and-service-delivery> **Numerator** – Hospital Episode Statistics Admitted Patient Care (HES APC), provided by NHS Digital<https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics> **Standard Population** – European Standard Population (ESP) 2013 **Hospital Episode Statistics – Admitted Patient Care**HES is a well-established administrative database for activity in NHS hospitals. It contains details of all admissions to NHS hospitals in England, including private patients treated in NHS hospitals, patients who are resident outside of England, and care delivered by treatment centres (including those in the independent sector) funded by the NHS. HES is the data source for a wide variety of healthcare analysis for the NHS, Government, and many other organisations and individuals. The APC dataset includes details of episodes where the patient is admitted into hospital. The data consist of individual records of patient care that are held within the HES database containing details including a patient’s diagnosis. Each record in the HES APC database is known as an episode – this is a continuous period of admitted patient care under the care of a consultant within one hospital provider. Provisional HES statistics are produced and published on a monthly basis and so are readily available for rolling quarterly publications of this indicator.This indicator uses both finalised and provisional HES data, the provisional data is produced and published two months in arrears due to HES processing and quality controls. The final annual HES data is reported approximately seven months in arrears (October, following the financial year end) after the HES annual refresh. The annual refresh gives providers the opportunity to revise and update their submissions for the year.Extracts and tabulations of data from HES are available to order for a charge. This is managed by the NHS Digital Data Access Request Service (DARS). (<https://digital.nhs.uk/services/data-access-request-service-dars>) There is no other national data set to compare HES against to obtain an overall quantitative assessment of accuracy. The data are completed from administrative records recorded by each Trust on Patient Administration Systems (PAS) with the clinical information added by clinical coders based on doctors’ notes. The trusts are required to complete this information to inform how much they are paid under PbR. Historically, the Audit Commission ran a rolling programme of audits of organisations’ coding to check for accuracy. As of April 2015, this role was replaced by Public Sector Audit Appointments Ltd (PSAA). Further to this, from 2017/18 PSAA is no longer responsible for appointing auditors to NHS trusts and CCGs. Under the Local Audit and Accountability Act 2014, NHS trusts and CCGs must select and appoint their own auditors and directly manage their contracts for the audits for financial years starting from 1 April 2017.The HES Processing Cycle and Data Quality report includes and explains the data cleaning process, the provider organisation code mapping and the derivation rules which include examples of correction and validation rules and derivation is available at the following link: <https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics/the-processing-cycle-and-hes-data-quality>**NHAIS – GP registered populations**NHAIS is a system implemented for managing patient registration details for England, Wales and Northern Ireland. The NHAIS system contains a wealth of secure information used by a range of bodies and professionals within the NHS. Access to patient data held on NHAIS systems via Open Exeter. Data are extracted as a quarterly snapshot in time from the GP Payments system (NHAIS) maintained by NHS Digital. This population has been consistently applied across all CCG OIS emergency admissions indicators, including indicator 2.6 assured in May 2018. In 2016 ONS produced a document around quality assurance of administrative data used in population statistics, part of which covers potential issues when using the patient register[[1]](#footnote-1) The source data can have both under and over coverage issues. List inflation may occur for a number of reasons including, but not limited to; high turnover of patients followed by subsequent registrations not being processed in a timely manner, people who do not de-register, people who live abroad who fail to deregister, people with a temporary residence. Equally there may be under coverage for reasons including but not limited to; patients solely registered with private GPs, babies yet to be registered, migrants yet to register. Registered population is considered to be the most appropriate for this indicator which also uses CCG of responsibility rather than CCG of residence.CCG level count of patients registered with the constituent GP Practices extracted from NHAIS (Exeter) Systems. Counts of registered patients are extracted on 1st April each year, and GP practices are mapped to CCGs using the mapping on this date. When calculating indicators, the count of registered patients and the GP to CCG mapping are taken from the 1st April within the specific time period. For example, the 12-month period July 2016 to June 2017 would use the 1st April 2017 registered patient counts and the GP to CCG map as it was on this date. An extract is taken quarterly and published in the same month, with all data tables available and free of charge**European Standard Population 2013**The current European Standard Population was introduced in 2013 and is widely used to produce age standardised rates, this will also allow for time series comparison. In its standard format the population is presented in five-year age bands from 0 to 90+, given this indicator is for those under 19 and the data being standardised by single year, the age bands do not fully coincide in their raw form. Following previous advice from the Methodology Review Group (MRG) in May 2018, based on the Public Health England (PHE) guidance attached below, NHS Digital will use the populations provided for each band and divide the value by 5 to provide a single year population. “Document available on request by email to indicators@nice.org.uk” |

The original ESP 2013 population figures are as follows:

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| **Age band** | **ESP 2013** |
| 0 - 4 | 5,000 |
| 5 - 9 | 5,500 |
| 10 - 14 | 5,500 |
| 15 - 19 | 5,500 |

The single year derived ESP 2013 population figures are as follows:

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| Age | Derived ESP 2013 |
| 0 - 4 | 5,000 |
| 5 – 9 | 5,500 |
| 10 – 14 | 5,500 |
| 15-18 | 4,400 |

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| **3.2 Was any other data source considered?** *Why was it discarded?* | ONS mid-year population estimates were considered as an alternative by which to standardise, however, following previous discussions in MRG and with a desire to ensure as standard an approach as possible across all indicators, it was agreed ESP was the most appropriate option. |
| **3.3 What period coverage is required?** | Data is currently published from 2010/11.CCGs have existed since 1 April 2013. The data currently published was backdated at the time, based on appropriate mapping of CCGs, to allow for historic data to be included. Given the change to use of ESP to allow a time series comparison NHS Digital will re-state all years using ESP from the introduction of CCGs, i.e. 2013/14 onwards. It is not deemed necessary to include data prior to this point as a four-year time series was considered suitable for comparative purposes. |
| **3.4 Is the indicator re-using an existing collection or extraction or is it primarily being collected for this indicator?** | Reusing an existing collection |
| **3.5 How will the data be extracted or collected?***Is the indicator re-using an existing collection or extraction or is it primarily being collected for this indicator?* | The Clinical Indicators team will extract the data and perform all calculations to produce the indicator. |
| **3.6 Data fields required***With justification* | Details of HES fields and classifications are available in the HES Data Dictionary (<https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics/hospital-episode-statistics-data-dictionary>). The data used are as follows:DIAG\_3\_01 – Primary diagnosis, 3 charactersSTARTAGE – Age at the start of the episodeADMIMETH – Method of admissionEPISTAT – Status of episodeADMIDATE – Date of admissionSEX – Sex of patientEPIORDER – Episode number within a spellADMICORC – Source of admissionEPITYPE – Type of admissionCLASSPAT – Patient classificationCCG\_REPONSIBILITY – CCG of responsibility (CCG derived from the patient’s GP practice, or if this is not recorded, from their residence, of if this is not provided, from the location of the hospital provider supplying care).EPIKEY – Unique record identifier |
| **3.7 Are any data filters required?***With justification* | **Field Name DIAG\_3\_01**Conditions Is equal to any of the following: E10, G40, G41, J45, J46Rationale: This gives the primary diagnosis of the patient.**Field Name STARTAGE**Conditions: Is between (inclusive): 0 and 18ORis between (inclusive): 7001 and 7007Rationale This field describes the age of the patient at the start of their episode of care. For this indicator only patients under the ageof 19 are considered. For children under the age of one year, codes 7001 through 7007 may be used instead of 0 to describe their age in days. **Field Name ADMIMETH**Conditions: Is equal to the following: 21, 22, 23, 24, 25, 28, 2A, 2B, 2C, 2DRationale This restricts the data to emergency admissions only. 25, 2A, 2B, 2C and 2D are valid for data from 1st April 2013 and replace 28.**Field Name EPISTAT**Conditions: Is equal to: 1 OR 3Rationale This includes both finished and unfinished episodes.**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.**Field Name SEX**Conditions: Is equal to either: 1 or 2Rationale 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.**Field Name EPIORDER**Conditions: Is equal to: 1Rationale This restricts the data to the first episode of care in a hospital spell.**Field Name ADMISORC**Conditions: Is not equal to: 51, 52, 53Rationale This excludes transfers**Field Name EPITYPE**Conditions: Is equal to: 1Rationale This restricts the data to general episodes (excludes birth, delivery and mental health episodes).**Field Name CLASSPAT**Conditions: Is equal to: 1Rationale This restricts the data to ordinary admissions (excludes day cases, regular day/night attenders and mothers and babies using only delivery facilities).**Field Name CCG\_RESPONSIBILITY**Conditions: CCGs in England only. The list of CCGs used to calculate the indicator may vary between reporting periods due to some CCGs merging. The CCGs used for each reporting period align with those listed in the accompanying Excel file.Rationale Excludes those patients who are registered with GPs outside England. |
| **3.8 Are there any linkages to other datasets?** | No |
| **3.9 Further notes on data:** | The monthly provisional HES data is subject to change; each extract is cumulative and contains data submitted for the financial year so far, i.e. Month 1 will only contain the data submitted with an activity date in April, but Month 6 will contain data submitted with an activity date from April to September. One of the reasons for this is that additional data may be needed to update patient records from earlier in the year, e.g. an episode may potentially run for several months or an amendment may need to be made as clinical coding takes place on discharge. After the 12 monthly submissions, there is an additional submission date to support what is called the Annual Refresh. This gives providers the opportunity to revise and update their submissions for the year prior to the final publication.The final publication is subject to consultation and providers are given the opportunity to amend provider organisation code mapping or the removal of any duplicate records. HES data is fixed after the final publication. As provisional HES data is subject to change it should be treated as an estimate until the final annual data is released. When the indicator is produced with finalised data previously reported provisional quarterly datasets are replaced with the single annual dataset. Reporting periods are broken down as follows:• Q1: July to June. Comprised of July to March (final) and April to June (provisional). The finalised annual figures for the previous year – April to March (final) are also released at this time.• Q2: October to September. Comprised of October to March (final) and April to September (provisional)• Q3: January to December. Comprised of January to March (final) and April to December (provisional)• Q4: April to March. Comprised of April to March (provisional).These indicators are official statistics and the publication date is pre-announced. There is no gap between the planned and actual publication date.   |

Section 4: Construction and Testing

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| **4.1 How will the indicator measure be calculated / constructed?**  | Directly age and sex standardised admission rate for unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s per 100,000 registered patients, 95% confidence intervals (CI).Rates are presented at one decimal place. |
| **4.2 Numerator explanation** | The number of finished and unfinished admission episodes, excluding transfers, for patients under 19 with an emergency method of admission and with a primary diagnosis for asthma, epilepsy or diabetes.The indicator is based on the primary diagnosis field only which is defined as follows: 1. The main condition treated or investigated during the relevant episode of healthcare, and
2. Where there is no definitive diagnosis, the main symptom, abnormal findings or problem.

In the case of the conditions used within this indicator, it is likely that asthma, diabetes or epilepsy would always be coded as a comorbidity on a person’s record, even if not the main reason for admission, because it is relevant to their care whilst in hospital. As such, it is not appropriate to include patients with a secondary diagnosis of one of these conditions for this reason, as it could potentially inflate the figures. |
| **4.3 Denominator explanation** | CCG level count of patients registered with the constituent GP Practices extracted from NHAIS (Exeter) Systems.Counts of registered patients are extracted on 1st April each year, and GP practices are mapped to CCGs using the mapping on this date. When calculating indicators, the count of registered patients and the GP to CCG mapping are taken from the 1st April within the specific time period. For example, the 12-month period July 2016 to June 2017 would use the 1st April 2017 registered patient counts and the GP to CCG map as it was on this date.The justification for use of NHAIS data is covered in Section 3.1. |
| **4.4 Provide a worked example** | In both instances data is filtered as described, summed / counted and grouped by CCG. The coding to complete these extracts and aggregations are completed using database query tools. |
| **4.5 Could any risks be associated with the use of this indicator?** | CCGs can have a different make up in terms of their population. Standardised rates are utilised as they allow for comparisons for emergency admissions for these conditions between different areas using the same population, in this case ESP.  |
| **4.6 Risk adjustment or standardisation type and methodology***Include the relevant methodology with justification or state why it is not relevant* | The directly age and sex standardised rate (DSR) is the rate of events that would occur in a standard population if that population were to experience the age and sex specific rates of the subject population. The age and sex specific rates of the subject population are applied to the age and sex structure of the standard population.$$DSR=\frac{1}{\sum\_{i}^{}w\_{i}}×\sum\_{i}^{}\frac{w\_{i}O\_{i}}{n\_{i}}$$where:*Oi* is the observed number of events in the local or subject population in age and sex group i;*ni* is the number of individuals in the local or subject denominator population in age and sex group i;*wi* is the number of individuals in the standard population in age and sex group i.The standard population used for the direct method is the European Standard Population 2013.The single year age groups used are 0, 1, 2, 3…16, 17, 18Variables and methodology: Eayres D. Technical Briefing 3: Commonly used public health statistics and their confidence intervals. York: APHO; 2008. Available at http://webarchive.nationalarchives.gov.uk/20080728093252/http://www.apho.org.uk/resource/item.aspx?RID=48457 |
| **4.7 What are the confidence intervals and control limits and why have they been used?***Include the relevant methodology with justification or state why they are not relevant* | 95% confidence intervals are calculated using Dobson’s[[2]](#footnote-2) and Byar’s[[3]](#footnote-3) method for large counts and Dobson and exact chi-squared for small counts (under 389).Dobson’s method:$$DSR\_{lower}=DSR+\sqrt{\frac{Var(DSR)}{Var(O)}}\left(O\_{lower}-O\right)$$$$DSR\_{upper}=DSR+\sqrt{\frac{Var(DSR)}{Var(O)}}\left(O\_{upper}-O\right)$$ where: O is the total number of observed admissions in the subject population$$Var(DSR)=\frac{\sum\_{i}^{}\frac{w\_{i}^{2}O\_{i}}{n\_{i}^{2}}}{\left(\sum\_{i}^{}w\_{i}\right)^{2}}$$$$Var\left(O\right)=\sum\_{i}^{}O\_{i}$$Olower and Oupper are the lower and upper confidence limits for the observed number of events;Exact chi-squaredWhen O < 389 then,$$O\_{lower}= \frac{χ\_{lower}^{2}}{2}$$$$O\_{upper}= \frac{χ\_{upper}^{2}}{2}$$where:𝜒2lower is the 97.5th percentile value from the 𝜒2 distribution with 2O degrees of freedom;𝜒2upper is the 2.5th percentile value from the 𝜒2 distribution with 2O+2 degrees of freedom.Byar’s method:When O >= 389 then,$$O\_{lower}=O\left(1-\frac{1}{9O}-\frac{z}{3\sqrt{O}}\right)^{3}$$$$O\_{upper}=(O+1)\left(1-\frac{1}{9\left(O+1\right)}+\frac{z}{3\sqrt{O+1}}\right)^{3}$$Where:z is the 97.5th percentile value from the Standard Normal distribution.The indicator is published with 95% confidence intervals recognising the existence of natural variation between the CCG populations, as specified in the ‘Commonly used public health statistics and their confidence intervals’ (Association of Public Health Observatories (APHO) (now Public Health England), March 2008).The APHO guide recommends using Dobson and Byar’s methods for large counts and Dobson and exact chi-squared for small counts. Further information can be found by following the link below. http://webarchive.nationalarchives.gov.uk/20080728093252/http://www.apho.org.uk/resource/item.aspx?RID=48457 |
| **4.8 Could the indicator be manipulated to influence the outcome?** | The coding is based on that which providers submit in their PAS systems on which audits will be carried out. This is addressed in Section 3.1.  |

Section 5: Presentation and Interpretation

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| **5.1 In what format will the indicator be presented?** | The indicator is presented on the NHS Digital website in .csv and .xlsx formats. These files are accompanied by a specification and quality statement. The data is presented with a detailed header including information on the statistic presented, the reporting period, level of coverage, publication date, data sources and any further notes to be aware of. Drop down filtering is also available.The indicator is presented at England and CCG level (for all English CCGs) broken down by gender. Previously published historic data sets are also presented to enable time series analysis.Data is reported quarterly on a rolling basis. Provisional HES data is used when final HES data is not available. When the indicator is produced with finalised data previously reported provisional quarterly datasets are replaced with the single annual data set. |

The specific data fields included are:

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| **Column name** | **Output** |
| Reporting period | Period of coverage (years / rolling quarters) |
| Period of coverage | Start and end dates for the reporting period |
| Breakdown | National (all registered patients in England), CCG |
| ONS Code | ONS geography code |
| Level | CCG code |
| Level description | CCG name |
| Gender | Person, female, male |
| Indicator value | DSR per 100,000 registered patients |
| CI lower | DSR upper 95% confidence interval |
| CI upper | DSR upper 95% confidence interval |
| Denominator | Count of registered patients |
| Numerator | Number of unplanned hospitalisations for asthma, diabetes and epilepsy in under 19s |

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| **5.2 What contextual information will be provided alongside the indicator?***With justification* | GP registered patients (denominator) and admission episode counts (numerator) are presented for each CCG, as well as at a national level to provide further information. 95% confidence intervals are also provided for the DSRs for further information. |
| **5.3 Is there a target to be achieved?** | The indicator is presented without target or ranking. If a CCG believes their figure to be disproportionately high / low, for example when compared to the national figure, the factors contributing to this can be investigated and appropriate action taken. |
| **5.4 Are there any limitations or potential bias?** | 1. This indicator requires careful interpretation and should not be used in isolation. It should be taken in conjunction with other indicators and information from other sources (patient feedback, staff surveys and other such material) that together form a holistic view of CCG outcomes and a fuller overview of how CCG processes are impacting outcomes.
2. Standardisation is by age and sex and does not account for any other factors that could potentially influence the rate.
3. Differences in casemix (beyond that accounted for by standardisation), such as comorbidities and other potential risk factors may also contribute to variation.
4. There may be variation in the prevalence of particular conditions due to differing levels of deprivation, for other geodemographic reasons or between patients of different ethnic heritages. For example, Type 2 diabetes is up to six times more common in people if South Asian descent and up to three times more common among those of African and Afro-Caribbean origin.
5. A number of factors outside the control of healthcare providers, such as the socio-economic mix of local populations, may determine whether a patient is admitted, this this could influence rates.
6. The patterns of providing care may vary between organisations in terms of extent of treatment in primary care settings, referral policies and practices, hospital outpatient facilities / walk-in clinics; and hospital inpatient admission policies and practices.
7. There may be local variation in data quality, particularly in terms of diagnostic and procedure coding.
8. Some factors causing or exacerbating relevant conditions are outside the control and influence of the NHS and CCGs. These can vary by region, and may include environmental factors such as air quality, occupational hazards and deprivation.
9. The indicator is calculated based on the primary diagnosis field as follows:
10. GP patient registration figures can be subject to over and under coverage issues. List inflation may occur for a number of reasons including but not limited to; high turnover of patients followed by subsequent registrations not being processed in a timely manner, people who do not de-register, people who live abroad who fail to deregister, people with a temporary residence. Equally there may be under coverage issues foe reasons including but not limited to; patients solely registered with private GPs, babies yet to be registered, migrants yet to register. The effects of this may vary between CCGs.
 |
| **5.5 What is considered “good” performance? What is considered “bad” performance?** | CCGs can determine what good or bad performance may be, potentially benchmarking against other CCGs combined with local knowledge as to how services are run and any local circumstances that may influence rates. |
| **5.6 What actions can be taken to improve a “bad” result?** | Any potential improvements or changes to how care is provided will be determined by CCGs, it is not the place of the framework to determine what action this might be. |
| **5.7 How will any interested parties use the information provided by the indicator?** | As per Section 2.2. |
| **5.8 Consider how the results can be used for benchmarking and if so, what methodology will be used?** | As per Section 5.5 |

**To be completed by the Indicator Methodology and Assurance Service (IMAS**

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| **Date rec’d** | 06/06/2018 | **Assigned to** | David Wheatley | **Target MRG** | 14/06/2018 | **Target IGB** | 13/09/2018 | **Indicator no** | IAP00069 |

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| **Suggested length of indicator accreditation** | Five years | **If Other, suggest length with justification** |

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| **Assurance Type** | **Current status** | **RAG status** |
| **Library and Directory check***Is there anything already in the library or directory which is equal / similar? Is there enough of a distinction to add this indicator?* | * Appears to be identical in construct to IAP00030 (NHSOF)
* Appears to be related to IAP00120 - Patterns of care (person-based hospitalisation over 12 months: generic or composite covering asthma, COPD, diabetes, heart failure, mental health)
* Appears to be related to 92622 - Admissions for diabetes for children and young people aged under 19 years (PHE)
* Appears to be related to 92483 - Admissions for diabetes for children aged 0 to 9 (PHE)
* Appears to be related to 92624 - Admissions for diabetes for children aged 10 to 18 (PHE)
* Appears to be related to 609 - Emergency admissions for asthma, diabetes or epilepsy (<18) (PHE)
* Appears to be related to 91007 - Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s (directly standardised rate) (PHE)
	+ (Persons)
	+ (Males)
	+ (Females)
* Appears to be related to 92481 - Admissions for asthma for children aged 0 to 9 (PHE)
* (PHE)
* Appears to be related to 92624 - Admissions for asthma for children aged 10 to 18 (PHE)
* Appears to be related to Emergency admission rate for children with asthma per population aged 0–19 years (tNR)
* Appears to be related to 92623 - Admissions for epilepsy for children and young people aged under 19 years (PHE)
* Appears to be related to 92485 - Admissions for epilepsy for children aged 0 to 9 (PHE)
* Appears to be related to 92623 - Admissions for epilepsy for young people aged 10 to 18 (PHE)
* Appears to be related to Emergency admission rate for children with epilepsy per population aged 0–19 years (tNR)
* Appears to be related to Emergency admission rate for children with epilepsy per 100,000 population aged 0–17 years (tNR)
 | Green |
| **DSAS check***Relationship to any standards, data sets or data collection* | N/A | Green |
| **Policy justification***Has an appropriate policy been selected?* | Given the identical nature of this indicator to IAP00032, the justification given for the indicator as part of the NHS Framework was:*During the consultation process for the NHS Outcomes Framework there was wide checking of other indicator sets for overlap. This indicator was selected as being fit for the purpose of the NHS outcomes indicators* CCG Outcomes Indicator Set measures are developed from NHS Outcomes Framework indicators that can be measured at clinical commissioning group level together with additional indicators developed by NICE and the Health and Social Care Information Centre.All of the CCG outcomes indicators have been chosen on the basis that they contribute to the overarching aims of the five domains in the NHS Outcomes Framework. The Indicator Set does not in itself set thresholds or levels of ambition for CCGs, it is intended as a tool for CCGs to drive local improvement and set priorities.Although not explicitly supported by this indicator NICE Quality Standards QS27, QS125 and QS25 are concerned with epilepsy, diabetes and asthma respectively. However, only the epilepsy and diabetes quality standards are under youth-specific. | Green |
| **Patient safety check** *Will there be any associated patient safety implications?* | No. | Green |
| **IG check** *Are there any Information Governance (IG) considerations such as small numbers or sensitive information?* | 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://digital.nhs.uk/media/1592/HES-Analysisguide/pdf/HES\_Analysis\_Guide\_March\_2015.pdf | Green |
| **Dependencies***On other indicators, programmes, standards, data sets* | N/A | Green |
| **Risk / impact***What level of risk is associated by using this indicator or the impact of using / not using?* | N/A | Green |
| **Data quality checks***How accurate and complete is the data? Are there any known constraints? Is there evidence that data is:** *available with sufficient frequency and timeliness*
* *robust enough*
 | **☒ Coverage:** 2016/17 HES APC data is available at CCG level from 2010/11 onwards. CCGs replaced Primary Care Trusts (PCTS) on 1 April 2013, HES processing allowed for the mapping of CCGs in years prior to this, back to 2010/11 HES is a mandated collection. Data quality issues are reviewed and fed back to providers to ensure continual improvement in all areas. Each release of HES APC data is accompanied by a data quality report. The 2016/17 data quality report is available via the following link: https://digital.nhs.uk/catalogue/PUB30098 and contained 19.7 million Finished Consultant Episodes (FCEs). More detailed HES data quality reports covering all data sets and all years are available here: http://content.digital.nhs.uk/article/1825/The-processing-cycle-and-HES-data-quality **☒ Completeness:** The completeness of individual fields within HES APC is generally very high, with fields for finished consultant episodes with a valid entry reported as being between 96% and 100% complete, as reported in https://files.digital.nhs.uk/pdf/0/8/hosp-epis-stat-admi-summ-rep-2016-17-rep.pdf. Details of specific issues in the 2016/17 data set are outlined in the data quality report. NHS Digital has identified a data quality issue affecting HES data for Nottingham University Hospitals Trust (NUH) in 2016/17. Over 30% of records from this trust did not have a valid geography of residence assigned. Areas where 10%-20% of the previous year’s patients were treated at NUH have been flagged and should be treated with caution. For more details of the issue, see <http://content.digital.nhs.uk/article/1825/The-processing-cycle-and-HES-data-quality>**☒ Validity:** Healthcare providers collect administrative and clinical information locally to support the care of the patient. The data is submitted to the Secondary Uses Service (SUS), which as well as making it available to the commissioners, also copies the information to a database. At pre-arranged dates during the year, SUS takes an extract from their database and sends it to HES. HES then validate and clean the extract, before deriving new items and making the information available in the data warehouse. Data quality reports and checks are competed at various stages in the cleaning and processing cycle.**☐ Default:** Not applicable **☒ Integrity:** The HES Processing Cycle and Data Quality report includes and explains the data cleaning process, the provider organisation code mapping and the derivation rules which include examples of correction and validation rules plus derivation; it is available here. Any issues will be managed and mitigated through agreed engagement channels with the data suppliers. Data quality risks and issues will be owned by the Information Analysis Lead Manager, Clinical Indicators clinical.indicators@nhs.net **☒ Timeliness:** Aggregated reports of HES data are released on provisional monthly data approximately 2 months after the end of the reference month.**☐ Linked to other data:** Not applicable  | Green |
| **Overall analysis and recommendations** | Byar’s method gives very accurate approximate confidence intervals for counts based on the assumption of a Poisson distribution. It is sufficiently accurate for counts as low as 5 (below 5, an exact method should be used, based on Poisson tables or the Chi-squared distribution) and is the preferred method for calculating confidence intervals for counts, crude rates, indirectly standardised rates and indirectly standardised ratios; it can also be used for proportions as long as the proportions are small (much closer to zero than to one). Potential caveats: \* Hospital admission data can be coded differently in different parts of the country. In some cases, details of the patient’s residence are insufficient to allocate the patient to a particular area and in other cases, the patient has no fixed abode. These cases are not included in the figures. | Green |

**Appendix 1 - List of conditions (ICD-10)**

**Infections**

E10 Insulin-dependent diabetes mellitus

G40 Epilepsy

G41 Status epilepticus

J45 Asthma

J46X Status asthmaticus

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| Indicator Assurance Report |
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| **IAP00069** |

**Final Assurance Rating from the Indicator Governance Board - 13/09/2018**

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| **Reason for assessment** | Scheduled review (review date reached) |
| **Iteration** | 1st IGB meeting |

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| **Ratings Against Assessment Criteria** |  |
| Clarity  | **Fit for use with caveats** |
| Rationale  | **Fit for use** |
| Data  |  **Fit for use with caveats** |
| Construction  |  **Fit for use** |
| Presentation and Interpretation  |  **Fit for use** |
| Risks and Usefulness  |  **Fit for use** |
| **Overall Rating** | **Fit for use with caveats** |

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| **Outcome** | **This indicator has been approved for inclusion in the National Library of Quality Assured Indicators** |

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| **Key findings from Assurance** |
| **Approved for five years with the following caveats:** |

* There are inconsistencies in how hospitals record patients who receive day-case emergency care. Some hospitals record these patients as an emergency admission, where others do not. There is no guidance to clarify how these patients should be recorded.
* In November 2017, NHS England and NHS Improvement established a steering group to address issues around day-case emergency care, including the possibility of creating a new dataset relating to this type of care.
* It was agreed that IMAS will follow up with NHS England and NHS Improvement in one year’s time to see if there has been any progress with this steering group and if their findings will have any effect on the data collection for this indicator. It is not anticipated that the data will affect the methodology for the indicator which is why it was assured for the maximum of five years.

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| **Approval date** | 13/09/2018 |
| **Review date** | 13/09/2023 |

**Details of Methodology Appraisal – 28/06/2018**

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| **Methodology appraisal body** | NHS Digital Indicator Methodology and Assurance Service |
| **Reason for assessment** | Scheduled review (review date reached) |
| **Iteration** | 2nd MRG meeting |

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

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| **Ratings Against Assessment Criteria** |  |
| Clarity  | **Fit for use with caveats** |
| Rationale  | **Fit for use** |
| Data  |  **Fit for use with caveats** |
| Construction  |  **Fit for use** |
| Presentation and Interpretation  |  **Fit for use** |
| Risks and Usefulness  |  **Fit for use** |
| **Overall Rating** | **Fit for use with caveats** |

**Summary Recommendation to Applicant:**

MRG thanked the applicant for addressing the remaining outstanding issues in the appraisal log below. The application can progress to IGB for assurance and inclusion in the library of indicators as fit for use with caveats due to the recording of Intervention Units within the underlying HES data.

**Summary Recommendation to IGB:**

MRG suggested that the indicator is “fit for use with caveats”. A suggested caveat is listed below:

* There are inconsistencies in how hospitals record patients who receive daycase emergency care. Some hospitals record these patients as an emergency admission, where others do not. There is no guidance to clarify how these patients should be recorded. In November 2017, NHS England and NHS Improvement established a steering group to address issues around daycase emergency care, including the possibility of creating a new dataset relating to this type of care.

**Please find a detailed description of recommendations and actions in the appraisal log at the end of the document.**

**Details of Methodology Appraisal – 14/06/2018**

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| **Methodology appraisal body** | NHS Digital Indicator Methodology and Assurance Service |
| **Reason for assessment** | Scheduled review (review date reached) |
| **Iteration** | 1st MRG meeting |

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

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| **Ratings Against Assessment Criteria** |  |
| Clarity  | **Not enough information provided** |
| Rationale  |  **Not enough information provided** |
| Data  |  **Not enough information provided** |
| Construction  |  **Not enough information provided** |
| Presentation and Interpretation  |  **Not enough information provided** |
| Risks and Usefulness  |  **Not enough information provided** |
| **Overall Rating** | **Not enough information provided** |

**Summary Recommendation to Applicant:**

MRG thanked the applicant. It was agreed that there were a number of areas where more information was required. MRG notes that many of their concerns are outside the remit of Clinical Indicators and lie with the sponsor.

**Summary Recommendation to IGB:**

N/A

 **Please find a detailed description of recommendations and actions in the appraisal log at the end of the document.**

**What do the Assurance Ratings mean?**

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| **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**

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| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 1a | What is the reasoning behind using the three conditions (epilepsy, diabetes, asthma)? (1.1) | MRG 14/06/2018 | CCGOIS Indicators are based on the NHS Outcomes Framework Indicators and follow that model. In the original application the rationale stated the following ‘the three conditions identified make up 94% of emergency admissions for under 19s with long-term conditions. These conditions are among those where effective community care and case management can help prevent the need for hospitalisation.’ In https://www.england.nhs.uk/wp-content/uploads/2012/12/ccg-ois-2015-tech.pdf, it says: ‘The intent of this indicator is to measure effective management and reduced serious deterioration in young people with specific long term conditions. Active management of these conditions can prevent acute exacerbations and reduce the need for emergency hospital admission.’ (See Indicator C2.7 on p41). | 20/06/2018 |[x]  MRG 28/06/2018 |
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**Rationale**

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| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 2a | Please provide information to demonstrate the evidence, not just say that it exists. (2.3) | MRG 14/06/2018 | Evidence is no longer publicly available on any website. Craig Grime (NICE) has sent through the documentation and is embedded here.Document(s) available on request by email to indicators@nice.org.uk  | 20/06/2018 |[x]  MRG 28/06/2018 |
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**Data**

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| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 3a | Why is the data presented in single years of age and is the splitting of the European Standard Population acceptable in this format? (3.1) | MRG 14/06/2018 | Based on recommendations from MRG it has been agreed we will standardise using the following age bands:0-45-910-1415-18 | 20/06/2018 |[x]  MRG 28/06/2018 |
| 3b | The data is currently shown as rolling quarterly data. Could this be made in to monthly rolling data, as this would be more useful for identifying season variation. (3.9) | MRG 14/06/2018 | Data for these indicators are presented as 12 month periods rather than individual months due to the potentially small size of the numerators if the data were broken down further. Also, to my knowledge, at the time of initial application, review of seasonal variation was not referenced as part of the purpose for this indicator. | 20/06/2018 |[x]  MRG 28/06/2018 |
| 3c | There is a concern about the completeness of the data being collected due to the design of the extract for the indicator looks for the number of admissions to hospital for urgent or emergency care requirements. Some hospitals have now established an ‘Intervention Unit’ for patients who have a likelihood of responding to a short period treatment, e.g. for nebuliser therapy on a unit established to divert a patient from a full admission. There is a potential that patients who attend for a short period of treatment are not included in the indicator. Please see the fuller explanation. (3.1) | MRG 14/06/2018 | *The inclusion of one, some or all the scenarios described within the Potential Data Issues paper depends on whether the patient is included within the HES Admitted Patient Care dataset (not the A&E or Outpatients datasets), and if they have been recorded as having the following:* *ADMIMETH - Conditions 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 1st April 2013 and replace 28).* *As noted, day cases are excluded. This may include Intervention Centres if they are not recorded under the above categories. If the scenarios described have been coded within APC in this way and meet all the other filter criteria listed in the application, they would be included. There is currently no national guidance on how this should be recorded within HES.**The times are not recorded in APC and we use the admission date to determine what year a record is counted in (albeit discharge date will have been used in the derivation of the episode status). This will be caveated.*  | 20/06/2018 |[x]  MRG 28/06/2018 |

**Construction**

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| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 4a | New guidance has been issued by PHE on confidence intervals. It would be good if the application could be updated to reflect the new guidance, which will be sent on to the applicant | MRG 14/06/2018 | *We are using the current method in order to provide consistency with the other CCGOIS indicators and this can be revised at the next review.* | 20/6/2018 |[x]  MRG 28/06/2018 |
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**Presentation and Interpretation**

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| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 5a | On point 9, please list the diagnosis codes and what they mean. (5.4) | MRG 14/06/2018 | *See 3.7 for Indicator code, we will also add an appendix to the application form to say what the diagnosis codes mean* | 20/6/2018 |[x]  MRG 28/06/2018 |
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**IMAS**

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| ***Rec. no*** | ***Issue or recommendation*** | ***Raised by / Date*** | ***Response or Action taken by applicant*** | ***Response date*** | ***Resolved*** | ***Sign off by / Date*** |
| 6a | Overall analysis section refers to Local Authority rather than CCG and patient residence. | MRG 14/06/2018 | *Application amended as per comment* | 20/6/2018 |[x]  MRG 28/06/2018 |
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**Any feedback should be made to the Indicator and Methodology Assurance Service (IMAS) Team at NHS Digital. 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**

**NHS Digital**

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**Website: https://digital.nhs.uk/systems-and-services/all-a-z/indicator-methodology-and-assurance-service**

See our [accessibility statement](https://www.nice.org.uk/accessibility#what-to-do) if you’re having problems with this document.

1. https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/methodologies/patientregisterqualityassuranceofadministrativedatausedinpopulationstatisticsdec2016 [↑](#footnote-ref-1)
2. Dobson A et al. Confidence intervals for weighted sums of Poisson parameters. Stat Med 1991;10:457-62 [↑](#footnote-ref-2)
3. 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-3)