**NHS Digital**

**Indicator Supporting Documentation**

**IAP00066 Emergency readmissions within 30 days of discharge from hospital (NHSOF)**

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| **Indicator Title** | **IAP Code (IAP00066)** |
| Emergency readmissions within 30 days of discharge from hospital |  |

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| Indicator Definition, including calculation, measurement units, geographical range, age and gender |
| Percentage of emergency admission to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission.  Numerator: The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-29 days (inclusive) of the last, previous discharge from hospital (see denominator), including those where the patient dies, but excluding the following: those with a main specialty upon readmission coded under obstetric specialties; and those where the readmitting spell has a diagnosis of cancer (other than benign or in situ) or chemotherapy for cancer coded anywhere in the spell.  Denominator: The number of finished CIP spells within selected medical and surgical specialties, with a discharge date up to March 31st within the year of analysis. Day cases, spells with a discharge coded as death, maternity spells (based on specialty, episode type, diagnosis), and those with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the spell are excluded. Patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission are excluded. |
| Indicator Data Source(s) |
| Details of data sources, if known. Please note if this data is collected currently, or if it will require some sort of development  The data source is ready.  The data for this indicator is sourced from HES, it should require no further development. |
| Indicator Data Source Availability |
| Is data publicly available (e.g. National Statistic) or is it only available as a bespoke dataset upon request. Comment on availability of raw data to customers outside the NHS/Public Sector  Some HES tables are publicly available on the NHS IC website, however, data for this indicator is only available as a bespoke dataset upon request for the NHS IC. It is not sensitive data and so will not require further permissions. |
| **Indicator Overlap** |
| List the indicator sets you have checked for overlap or if you have searched the IC Indicator library |
| For example, NHS Choices, IQI / MQI, Better Care, Better Value, NCHOD, NHS Comparators  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  The NHS Consultation document set out a range of options for the future iterations of the Framework, which requires development of the underlying feedback/survey architecture to ensure that they are fit for purpose. These options were strongly supported in the consultation, and the Government response made a committed to initiate this work. Work on the survey architecture is now being planned – details will be set out in Ministerial submission that will go up in early March. |
| List any indicators which overlap with the proposed indicator |
| NCHOD indicator on readmissions within 28 days of discharge from hospital (Percentage of emergency admissions into any hospital in England occurring within 28 days of discharge from hospital.). See - https://indicators.ic.nhs.uk/webview/  Please include, where known, any indicator code or unique reference, as well as the title of the indicator |
| What value does the proposed indicator offers over existing indicators |
| Highlight any gaps left by any current indicators  The definition of the NCHOD indicator on readmissions was over 10 years old. For the NHS OF, this was reviewed by RAND following a commission from DH, to take account of more recent research in this field. |

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| **Indicator Use** |  |  |  |  |
| Does this indicator measure a | process |  | outcome |  |

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| This measure is… |  |  |  |  |  |
| …compared against absolute evidence based standard |  | …compared against national average |  | …compared against optimum value |  |
| …comparison against self over time |  | … not compared against any other values |  |  |  |

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| Indicator Title/ Definition Review **(IC use only)** |  |  |  |
| Indicator meets criteria for :  Indicator definition self-explanatory  Indicator definition in plain English, suitable for publishing to all audiences  Indicator definition with clear measurement units  Indicator definition with clear scope (geog, age, sex)  Data source available  Data source suitable  Indicator is unique  Face validity of concept and indicator use  **Information complete - proceed** |  | Requires revision for following reasons:  Title not confined to concept only  Use of acronyms  Definition needs more detail on:  - calculations  - data sources  - geographical coverage  - patient/population groups  Insufficient information about data source  Insufficient exploration of overlap  Insufficient information about indicator use |  |
| Notes: |  |  |  |

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| **Application contact details** (please note all contact details will be treated confidentially) |  |
| Applicant Name | Dawn Fagence |
| Applicant Role | Co-ordinating analyst for NHS outcomes indicators in domains 3 & 4 framework |
| Applicant Organisation | DH |
| Applicant Telephone | 0207 972 5724 |
| Applicant Email | dawn.fagence@dh.gsi.gov.uk |
| Indicator Set Name | NHS Outcomes Framework |
| Sponsor Name | DH – Quality Framework & QIPP teams |
| Sponsor Role | Delivery of NHS Outcome Indicators for SoS to use to hold NHS Commissioning Board to account. |
| Sponsor Organisation | DH |
| Acknowledgements |  |
| Other Stakeholder Name | NHS IC |
| Other Stakeholder Role | Collector/supplier of survey data for this indicator |
| Other Stakeholder Organisation | None |
| Please list any additional Stakeholder(s) | None |

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| **Users of the Proposed Indicator** |  |  |  |
|  | Primary User | Secondary User | Not intended for |
| Boards (national, local) |  |  |  |
| Provider Managers |  |  |  |
| Commissioning mangers |  |  |  |
| Regulators |  |  |  |
| Clinicians |  |  |  |
| Patients |  |  |  |
| Public |  |  |  |
| Other (please specify) |  |  |  |
| Other (please specify) |  |  |  |

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| Indicator Applicant Review **(IC use only)** |  |  |  |
| Indicator meets criteria for :  **Information complete - proceed** |  | Requires revision for following reasons:  Applicant information not complete  User information not complete |  |
| Notes: |  |  |  |

Rationale for indicators

Please list any relevant policies, strategies or programmes

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| High level subject area |  |  |  |  |  |
| Preventing people from dying prematurely |  | Enhancing quality of life for people with long term conditions |  | Helping people recover from episodes of ill health or following an injury |  |
| Ensuring people have positive experiences of care |  | Treating and caring for people in a safe environment and protecting them from avoidable harm |  | Other |  |

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| Evidence base for the indicator |
| Provide a paragraph summarising the evidence, noting quality of evidence where appropriate. Do not list the relevant docs here, please extract salient messages.  Indicator has been selected as part of the set of NHS Outcome indicators – evidence produced and considered for the set. The indicator is part of domain 3 of the set – this domain reflects the importance of helping people to recover from episodes of ill health or following injury. This can be seen as two complementary objectives: preventing conditions from becoming more serious (wherever possible) and helping people to recover effectively. Progress in helping people to recover as effectively as possible will be measure using this indicator on emergency readmissions. Healthcare, along with social care, is a major determinant of how well a patient recovers (including through rehabilitation) following illness or injury; if a person does not recover well, it is more likely that they will require hospital treatment again within the next 30 days. Thus, readmissions have been widely used as an indicator of the success of healthcare in helping people to recover. |
| References |
| Extensive consultation – see transparency in outcomes – a framework for the NHS, The NHS Outcomes Framework 2011-12  [www.nchod.nhs.uk](http://www.nchod.nhs.uk) – see review conducted in 1991  Emergency readmission rates: further analysis, Department of Health, November 2008: http://www.dh.gov.uk/dr\_consum\_dh/groups/dh\_digitalassets/@dh/@en/documents/digitalasset/dh\_090052.pdfPreventing emergency readmissions to hospital - A scoping review, ELLEN NOLTE, MARTIN ROLAND, SUSAN GUTHRIE, LAURA BRERETON, RAND Corporation, October 2011 (attached with form to email). |
| Clinical advice |
| Provide details of any clinical advice or support already given in development or preparation of indicator.  Consulted extensively with colleagues in the LSHTM and RAND via Research Directorate in DH who are expert in readmissions research to examine the current definition of this indicator and decide whether it needed reviewing.  Therefore, this indicator now aligns more with current thinking and allows more readily international comparison.  The main changes to the indicator from the original NCHOD one are as follows:   * Move from 28 days to 30 days emergency readmissions to align it more closely to 1 month and allow more international comparison. * Mental health specialities now included (maternity and cancer specialties continue to be excluded).   Mental health readmissions are sometimes necessary and research has also shown that there is a relationship between MH readmissions and average length of hospital stay. On that basis some development work was undertaken by NCHOD to see whether a more sophisticated indicator could be developed that combined readmissions with length of stay. Mental health spells were also part of separate indicators; however, this is no longer the case. On that basis, mental health was excluded from the overall readmission’s indicator.  However, an improved MH indicator has not materialised and there is judged to be no reason to exclude mental health altogether from the monitoring of readmission rates. Similar factors influencing readmissions apply in mental health as in a range of physical long term conditions which are included.  The exclusion of maternity and cancer, when this indicator was used by DH and the Healthcare Commission for the NHS Performance Indicators / Ratings was considered appropriate at the time, as these were large, whole groups where the basic assumption applied less, and which did not distract from the simplicity of the message. This still applies to the indicator.  The final report from RAND as mentioned above is attached to them email with this form, it provides further details of the work that the review touched on to support the new definition for this indicator. |

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| Indicator Rationale Review **(IC use only)** |  |  |  |
| Priority level linked to policy, strategy or programme  Quality of evidence  - clinical trial / cohort studies/ meta-analysis  - non-analytical studies  - best practice (clinical)  - good practice for patient experience  **Information complete - proceed** |  | Requires revision for following reasons:  Policy, strategy, programme information not complete  Evidence information not complete |  |
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| **Indicator Methodology – information sources** |
| Numerator definition Word description of the data source |
| The number of finished and unfinished continuous inpatient (CIP) spells that are  emergency admissions within 0-29 days (inclusive) of the last, previous discharge  from hospital (see denominator), including those where the patient dies, but  excluding the following: those with a main specialty upon readmission coded  under obstetric specialty; and those where the readmitting  spell has a diagnosis of cancer (other than benign or in situ) or chemotherapy for  cancer coded anywhere in the spell.  The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.  The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell. |
| Numerator source Organisation and data collection |
| NHS IC, Hospital Episode Statistics |
| Numerator construction Which data fields (specify) and values (specify codes) are combined to arrive at the count. Include any special rules.    Numerator data - The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-29 days (inclusive) of the last, previous discharge from hospital (see denominator), including those where the patient dies, but excluding the following: those with a main specialty upon readmission coded under obstetric specialty; and those where the readmitting spell has a diagnosis of cancer (other than benign or in situ) or chemotherapy for cancer coded anywhere in the spell.  The date of the last, previous discharge from hospital, and the date and method of admission from the following CIP spell, are used to determine the interval between discharge and emergency readmission.  The numerator is based on a pair of spells, the discharge spell and the next subsequent readmission spell (this spell must meet the numerator criteria). The selection process thus carries over the characteristics of the denominator for the discharge spell and applies additional ones to the readmission spell.  The following fields and values are used for the numerator.  The numerator is the number of denominator CIP spells where:  Diagnosis of cancer is not coded in any position in the readmission spell;  AND the first episode in readmission CIP spell  ADMIDATE minus last episode in admission CIP spell  DISDATE < 29 days inclusive (discharge date and admission date, includes negatives);  AND the first episode in the readmission CIP spell has:  ADMIMETH = 21, 22, 23, 24 or 28 (admission method);  AND DIAG\_01 does not begin with ‘O’ (primary diagnosis)  AND MAINSPEF not 501, 560, 610 (main specialty).  Fields used from the first episode in a spell where there is a valid organisation of residence code include:  SPELLRESPCTC, SPELLRESLADSTC, SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADST field.  Fields used from the last episode in a spell include:  PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.  Counts are by:  age / sex / method of admission of discharge spell / diagnosis (ICD 10 chapter / selected sub-chapters within medical specialties) and procedure (OPCS 4 chapter / selected sub-chapters within surgical specialties) / organisation of residence in CIP spell (values for England are aggregates of these)  where:  age bands for the respective age specific indicators are :<1, 1-4, 5-9, 10-15,  16-64, 65-74, 75-84, 85+; 16-64, 65-74, 75-84, 85+;  sex is 1, 2 (male and female);  admission method is elective or non-elective;  diagnosis (within medical specialties);  procedure (within surgical specialties). |
| Numerator ascertainment Any known exclusions, shortfalls or collection issues which will affect the total amount of data collected. |
| Common, known data quality issues associated with HES, such as under coding. |
| Numerator quality of data Issues with accuracy or known variability of recording. For example, coding by untrained staff. |
| Comments on numerator data - Individual finished consultant episodes are linked to other episodes where all are part of one continuous spell of care for a patient (see CIP spell construction sections in Annex 4 (‘Additional Reading’ section of the Compendium: <https://indicators.ic.nhs.uk/download/Additional%20Reading/Methods%20annexes/Compendium%20User%20Guide%202009%20(October)%20Annex%204%20V1.doc>) . A spell may contain HES data from another year only when one of its episodes spans years. For example, a spell which finished during April may contain admission information from an episode which started during the previous March.  The numerator (readmissions) consists of CIP spells (see denominator) that include both finished and unfinished (i.e. finished episodes from following years) episodes i.e. readmissions can be finished and unfinished CIP spells. Where there is more than one readmission within 30 days, each readmission is counted once, in relation to the previous discharge.    Readmissions that end in death are included in the numerator.  Patients within the maternity specialty as well as those with a diagnosis of cancer have been excluded because in these cases emergency readmission is often considered a necessary part of care.  Spells are attributed to the organisation of residence, based on the numerator.  The indicator includes discharges occurring after transfer to another Trust. Discharges are counted to the first valid organisation coded in the spell for residence based aggregates, and to the discharging trust for trust based aggregates.  There is variation in the completeness of hospital records and quality of coding (see Data Quality sections of HES online for details: http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=1230). |
| Numerator access to data Is data publicly available / published. Is it available only upon request, or even only to 'trusted' groups of people? |
| Some HES tables are published but data for this indicator is to be a bespoke extraction, available on request from the NHS IC. The data is not sensitive so no further permissions should be needed. |
| Numerator timeliness Frequency and timeliness of data. State how the publication/release of data relates to indicator production timescales. |
| Quarterly, two months after the end of the quarter. |
| Denominator definition Word description of the data source |
| The number of finished CIP spells within selected medical and surgical  specialties, with a discharge date up to March 31st within the year of analysis.  Day cases, spells with a discharge coded as death, maternity spells (based on  specialty, episode type, diagnosis), and those with mention of a diagnosis of  cancer or chemotherapy for cancer anywhere in the spell are excluded. Patients  with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in  the 365 days prior to admission are excluded. |
| Denominator source Organisation and data collection |
| NHS IC, Hospital Episode Statistics |
| Denominator construction Which data fields (specify) and values (specify codes) are combined to arrive at the count. Include any special rules. |
| Denominator data - The number of finished CIP spells within selected medical and surgical specialties, with a discharge date up to March 31st within the year of analysis. Day cases, spells with a discharge coded as death, maternity spells (based on specialty, episode type, diagnosis), and those with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the spell are excluded. Patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission are excluded.  The following fields and values are used for the denominator.  The first episode in the CIP spell has:  ADMIMETH = 11, 12, 13, 21, 22, 23, 24, 28, 31, 32, 81, 82, 83, 84 or 89 (admission method);  AND EPITYPE = 1 (episode type);  AND CLASSPAT = 1 (patient classification);  AND AGE = 0-15 or 7001-7007 (Ind.4E), 16-74 (Ind.4A), 75+ (Ind.4D);  AND DOB not 01/01/1900 or 01/01/1901 (date of birth);  AND SEX = 1 or 2 (sex);  AND EPIORDER = 1 (episode order);  AND EPISTART is valid (episode start date);  AND DIAG\_01 does not begin with ‘O’ (primary diagnosis).  AND the last episode in the CIP spell has:  DISDATE is valid and < 04/03/YYYY+1 (discharge date);  AND EPITYPE = 1 (episode type);  AND MAINSPEF not 501, 560, 610 (main specialty);  AND DISMETH = 1, 2 or 3 (discharge method).  Spells with any mention of a diagnosis of cancer (ICD-10 codes C00-C97, D37-D48) or chemotherapy for cancer (ICD-10 code Z51.1) are also excluded from the denominator, as are patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission.  Additionally, the following exclusions are applied (main specialty, first valid procedure and primary diagnosis):  AND (episode where the first valid procedure took place MAINSPEF = 100, 101, 110, 120, 130, 140, 141, 142, 143, 150, 160, 170, 180 or 502 AND first valid procedure is not NULL)  OR (first episode in CIP spell MAINSPEF = 100, 101, 110, 120, 130, 140, 141, 142, 143, 150, 160, 170, 180 or 502  OR (first episode in CIP spell MAINSPEF = 190, 191, 300, 301, 302, 303, 304, 305, 310, 311, 312, 313, 314, 315, 320, 330, 340, 350, 360, 361, 370, 371, 400, 401, 410, 420, 421, 430, 450, 460, 800, 810 or 823 and first episode in CIP spell DIAG\_01 is not NULL)).  There is an additional 3 step piece of logic which is designed to ensure that the spells are allocated to the most appropriate group for standardisation:  Step A) Look for spells where there is a valid procedure and surgical specialty (taken from the episode where the procedure was found).  Step B) Excluding spells selected in step A, select spells where main specialty in the first episode is surgical, these spells are standardised under the ‘no procedures’ basket.  Step C) Excluding those spells selected in step A and step B, select spells where main specialty of the first episode is medical.  Those spells selected in A) are standardised by procedure subgroup. Note that procedures beginning with ‘Y’ or ‘Z’ are standardised in the ‘no procedure’ basket. Those spells selected in C) are standardised by diagnosis subgroup.  Lists of specialties and sub-groups used for filtering/standardisation:  Specialties:  Medical Specialties: '190', '191', '300', '301', '302', '303', '304',’305’, '310', '311', '312', '313', '314', '315', '320', '330', '340', '350', '360', '361', '370', '371', '400', '401', '410', '420', '421', '430', '450', '460', '800', '810', '823’.  Surgical Specialties: '100', '101', '110', '120', '130', '140', '141', '142', '143', '150', '160', '170', '180', '502'  Fields used from the first episode in a spell where there is a valid organisation of residence code include:  SPELLRESPCTC, SPELLRESLADSTC., SPELLRESSTHAC. Other organisational levels (E, GOR, ONS Areas, Counties) are aggregates of the SPELLRESLADSTC field.  Fields used from the last episode in a spell include:  PROCODETC (provider code, unmapped). Provider clusters are aggregates of the PROCODETC field.  Counts are by:  age / sex / method of admission of discharge spell / diagnosis (ICD 10 chapter / selected sub-chapters within medical specialties) and procedure (OPCS 4 chapter / selected sub-chapters within surgical specialties) / organisation of residence in CIP spell (values for England are aggregates of these)  where:  age bands for the respective age specific indicators are: <1, 1-4, 5-9, 10-15,16-64, 65-74, 75-84, 85+; 16-64, 65-74, 75-84, 85+;  sex is 1, 2 (male and female);  admission method is elective or non-elective;  diagnosis (within medical specialties). |
| Denominator ascertainment Any known exclusions, shortfalls or collection issues which will affect the total amount of data collected. |
| There is variation in the completeness of hospital records and quality of coding (see Data Quality sections of HES online for details: http://www.hesonline.nhs.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=1230in. Quality of coding shows the proportion of diagnoses not coded. There may also be variation between hospitals in the way that they code diagnoses to the fourteen diagnosis fields in each episode, particularly primary diagnosis. For instance, they may code in the order in which the diagnoses were made, or according to their perceived importance or complexity. This may affect whether a particular spell is selected for inclusion in this indicator. |
| Denominator quality of data Issues with accuracy or known variability of recording. For example, coding by untrained staff. |
| The denominator consists of CIP spells that cover all continuous, consultant episodes for the same patient, including those following a transfer to another hospital. Denominator CIP spells must start with an admission episode and finish with a (live) discharge episode in the year of analysis.  CIP spells with a discharge code of death are excluded from the denominator because readmission is not possible. |
| Denominator access to data Is data publicly available / published. Is it available only upon request, or even only to 'trusted' groups of people? |
| Yes, from NHS IC |
| Denominator timeliness Frequency and timeliness of data. State how the publication/release of data relates to indicator production timescales. |
| Quarterly, two months after the end of the quarter. |

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| Indicator Applicant Review **(IC use only)** |  |  |  |
| Are raw data universally available for others to recreate indicator?  Are data available in a suitable timeframe and frequency?  Are data quality issues well documented and acknowledged?  Are data robust enough to support indicator and derivations?  Are data consistent over the required time?  Are construction of numerator and denominator robust and comparable with other sources  **Information complete - proceed** |  | Requires revision for following reasons:  Numerator info not complete  Denominator info not complete |  |
| Notes: |  |  |  |

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| **Indicator methodology - statistical methods** |
| Statistical support |
| Summarise involvement of statistician involvement in developing indicator so far, and ongoing support for indicator when rolled out.  The indicator is adapted from that used by NCHOD, statisticians here would have been involved in the initial development. In the subsequent research commission by DH to review this definition for the NHS OF, DH statisticians have liaised with RAND and Azim Lakhani at the NHS IC to construct a relevant indicator. |
| Risk adjustment variables |
| Same as for NCHOD indicator, except check whether risk adjusting for comorbidity has an effect on the indicator, as outlined in accompanying email. |
| Statistical methods |
| Type of analysis (any methods used), risk adjustment (predictive power of model), special techniques (dealing with dispersion, constant risk), statistical process control  The indicator is indirectly standardised by age and sex. The person-based rate is standardised by using England age and sex rates as standards. The gender-specific rates are standardised using person-based standards, in order to highlight differences across gender. Indirect standardisation involves the calculation of the ratio of an organisation’s observed number of events and the number of events that would be expected if it had experienced the same event rates as those of patients in England, given the mix of age and sex of its patients. This standardised ratio is then converted into a rate by multiplying it by the overall event rate of patients in England.  The percentage change in rates from a previous year, plus the statistical significance of this change, have also been calculated. A positive percentage represents improvement and a negative percentage represents deterioration.  Annex 3 ‘Explanation of statistical methods’ (‘Additional Reading’ section of the Compendium: https://indicators.ic.nhs.uk/download/Additional%20Reading/Methods%20annexes/Compendium%20User%20Guide%202005%20Apr%20Annex%203%20V1.doc) describes the methods used for indirect standardisation, calculation of improvement, estimation of confidence intervals, and banding of significance of improvement. |
| Quality assurance processes |
| Detail the quality assurance processes in place to check data, identify anomalies, and explore these further with providers.  Quality of Indicator - Annex 12 (‘Additional Reading’ section of the Compendium: <https://indicators.ic.nhs.uk/download/Additional%20Reading/Methods%20annexes/Compendium%20User%20Guide%202005%20Annex%2012.doc> ) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used. |
| Test data or sample data |
| During course of pipeline application, test or sample data will be required to give proof of concept. Insert table of raw data.  See:  <https://indicators.ic.nhs.uk/download/NCHOD/Data/03N_523ISP4AP_10_V1_D.xls> |
| Interpretation |
| Describe how this indicator is planned to be used and what questions the indicator is planned to answer, and any known limitation  Indicator has been selected as part of the set of NHS Outcome indicators – See ‘The NHS Outcomes Framework 2011-12’ document. The indicator is part of domain 3 of the set – this domain reflects the importance of helping people to recover from episodes of ill health or following injury.  Type of indicator - This is a condition-specific, cross-sectional annual comparative indicator, acting as a proxy for outcome. In the absence of an absolute standard, comparative data are useful for monitoring in relation to rates achieved in comparable organisations.  Quality of Indicator - Annex 12 (‘Additional Reading’ section of the Compendium: <https://indicators.ic.nhs.uk/download/Additional%20Reading/Methods%20annexes/Compendium%20User%20Guide%202005%20Annex%2012.doc>) describes the criteria that should be used to judge the quality of this indicator. The application of the criteria is dependent on the context (e.g. describing a single organisation, comparing several organisations) and the level (e.g. national / regional with large numbers of events, local with small numbers of events) at which the data are to be used.  Confidence Intervals - Some of the values and factors influencing the indicator may be chance occurrences, with values fluctuating at random between organisations and from year to year. Numbers of admissions may be small at Primary Care Organisation, Local Authority and provider Trust level. The results should therefore be interpreted with caution and with the aid of confidence intervals. The 95% confidence interval provides a measure of the statistical precision of the rate for an area or institution. It indicates a range which, with 95% confidence, will contain the underlying value of the indicator. If the confidence interval for an area’s rate does not contain the overall national rate, the difference between the two rates is considered statistically significant. If the confidence interval overlaps the national rate, in most cases the difference between the rates would not be considered statistically significant. 95% and 99.8% confidence intervals have been calculated.  Effect of case-mix/severity - A number of factors outside the control of hospitals, such as the socio-economic mix of local populations and events prior to hospitalisation, may contribute to the variation shown by the indicators. Differences in case-mix (beyond that accounted for by standardisation), severity of the stroke, comorbidities and other potential risk factors also contribute to the variation. Current data do not allow assignment of severity of illness across continuous inpatient spells, nor do they allow adjustment for any of these factors. This may pose less of a constraint at geographical organisation level than at hospital level. We have tried to deal with this constraint by presenting the data in clusters that are similar with respect to institution or organisation type. No attempt has been made to assess whether the readmission was linked to the discharge in terms of diagnosis. A patient discharged after a stroke may be readmitted into a community hospital with a chest infection. There are many different possibilities and over-specifying may lead to readmissions being missed. Gender-specific data standardised to person rates are available. Analyses at England level by the Index of Multiple Deprivation are presented.  Other potential confounding factors - A continuous inpatient spell may include transfers to other hospitals, e.g. for rehabilitation. The patterns of providing care may vary between NHS hospital trusts in terms of whether patients are transferred elsewhere for rehabilitation and convalescence before final discharge. Planned transfers, for example for rehabilitation, may extend length of stay and affect discharge destination figures and readmission rates.  Variation between hospitals in average length of stay may lead to variation between hospitals in the proportion of complications occurring in hospital as opposed to in the community after discharge from hospital. Readmissions may reflect self-discharge against medical advice, and levels of primary care and community resources available to manage care outside hospital. Readmissions may not be linked clinically to the previous spell and may be entirely appropriate for the clinical care of the patient. There may be variation between Trusts in the way emergency admissions are coded. Routine data do not allow for all of these aspects to be identified and removed from the indicator; however, this may be done through local audit. |
| Format of presentation |
| Describe published format, such as interactive website, csv file, etc. Provide table or screenshot (or mock version) of how the final presentation of data will appear. Include any interpretative text as well as figures  CSV file to DH |

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| Indicator Methodology Review **(IC use only)** |  |  |  |
| Transparency / reproducibility  Anomaly investigation and action  Valid and appropriate methods used  Can play of chance be assessed  Identification and action on outliers  Presentation suitable for audience  Construct validity  Interpretation  **Information complete - proceed** |  | Requires revision for following reasons:  Statistical methods information not complete  Test data not complete  Interpretation not complete  Presentation not complete |  |
| Notes: |  |  |  |

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| **Indicator production and management** |
| Commissioner of indicator (this may be the same as the stakeholder) |
| DH |
| Producer of indicator (this may be the same as the proposer) |
| NHS IC |
| Expected ‘improvement actions’ as a result of this indicator |
| State where responsibility will lie, and what actions will be expected as the result of a 'poor' rating of this indicator.  The NHS Outcomes Framework sets out the national outcome goals that the SoS will use to monitor the progress of the NHS Commissioning Board. It does not set out how these outcomes should be delivered; it will be for the NHS Commissioning Board to determine how best to deliver improvements by working with GP commissioning consortia to make use of the tools at their disposal. |

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| Have costs of collection, construction, dissemination and presentation been fully identified? See NHS Outcomes Framework impact assessment |  |

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| Funding status |
| Secured / being sought / not identified  Please add comments |
| What timescales do you envisage for developing / producing this indicator |
| Give specific dates for key stages or publication or development of indicator  To be ready/ published December 2011 if possible or asap after this date. |
| Risks, assumptions and impact of producing indicator |
| None identified as the indicator data is already produced and published by the NHS IC. |
| Risk of perverse incentive and gaming by healthcare providers |
| To what extent can organisations influence the value of the indicator in ways which may not benefit patients?  None. |
| Risks, assumptions and impact of not producing indicator |
| This is not an option as there has been a public commitment made to doing so. This indicator is part of the NHS Outcome Framework 2011-12 indicator set. |

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| Indicator Production Review **(IC use only)** |  |  |  |
| Action-ability  Funding capacity identified  Risks sufficiently explored  **Information complete - proceed** |  | Requires revision for following reasons:  Commissioner information not complete  Producer information not complete  Improvement actions not complete  Funding status not complete  Timescale info not complete  Risk assessment not complete |  |
| Notes: |  |  |  |

Indicator Assurance Pipeline Process

**Methodology Review Group**

**Applications for consideration**

**03rd May 2012**

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| --- | --- |
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| **Document Owner:** | Chris Wilson |
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**Contents**

|  |  |
| --- | --- |
| **0. Document Control…………………………………………………………………...….** | 2 |
| [0.1 Version History………………………………………………………………………………….](#_Version_History) | 2 |
| [0.2 Approvals………………………………………………………………………….……...…….](#_Approvals) | 2 |
| [0.3 Distribution…………………………………………………………………………………..….](#_Distribution) | 2 |
| **1. Introduction………………………………………………………………………………** | 3 |
| [**2. Indicator / Recommendations Updates……………………………………………..**](#_Additional_information_and) | 4 |
| [2.1 NOF 3b **(IAP00066)** Percentage of emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission.….](#_Note_on_the)............ | 4 |
| [2.2 NOF 1.5 Excess under 75 mortality rate in adults with serious mental illness…](#_NHS-OF_1.5_-)………. | 6 |
| [**3. New Indicators for Consideration……………………………………………………**](#_New_indicators_to_1) | 11 |

4. Additional Comments Supplied for Meeting ……………………………………… 12

5. Recommendations Summary…………………………………………………………. 14

**0. Document Control**

## Version History

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| **Version** | **Date** | **Changed By** | **Summary of Changes** |
| V 0.1 |  |  | Initial Draft |
|  |  |  |  |

## Approvals

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Title** | **Date** | **Version** | **Signature** |
|  |  |  |  |  |

## Distribution

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| --- | --- | --- |
| **Version** | **Date** | **Distribution List** |
|  | 24/06/11 | HSCIC: John Varlow, Andy Sutherland, Azim Lakhani, Alyson Whitmarsh, Simone Chung, Peter Knighton  Cc: Susie King |

# Introduction

Matters to discuss relate to National Outcomes Framework indicators that have previously been discussed at MRG with further clarification or comment sought.

This includes further information on:

* Indicator 3b **(IAP00066)** - Percentage of emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission.
* Indicator 1.5 - Excess under 75 mortality rate in adults with serious mental illness

# Additional information and feedback from data owners on MRG Recommendations

## NHS-OF 3b (IAP00066)- Percentage of emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission.

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| **Indicator** | **NHS-OF 3b (IAP00066)** - **Percentage of emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission.** |
| **Construction and data source** | **Denominator** The number of finished CIP spells within selected medical and surgical specialties, with a discharge date up to March 31st within the year of analysis. Day cases, spells with a discharge coded as death, maternity spells (based on specialty, episode type, diagnosis), and those with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the spell are excluded. Patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission are excluded.  **Numerator** The number of finished and unfinished continuous inpatient (CIP) spells that are emergency admissions within 0-29 days (inclusive) of the last, previous discharge from hospital (see denominator), including those where the patient dies, but excluding the following: those with a main specialty upon readmission coded under obstetric; and those where the readmitting spell has a diagnosis of cancer (other than benign or in situ) or chemotherapy for cancer coded anywhere in the spell.  **Indicator format:** Standardised percentage. |
| **Rationale** | The existing NCHOD definition for this indicator was reviewed in light of more recent research by RAND. This research lead to the following changes:  - Mental health admissions are no longer excluded (cancer and obstetric admissions continue to be excluded).  - The indicator will measure readmissions within 30 days instead of 28 days, to align it with approximately 1 month.  - Children are included in this indicator.  - Comparison with self over time, rather than benchmark or target value |
| **Ref Docs** | RAND report: <http://www.rand.org/content/dam/rand/pubs/technical_reports/2012/RAND_TR1198.pdf> |
| **Potential issues** | * Includes unavoidable readmissions, it would be very difficult to identify these on an individual basis * Palliative care / end of life care not excluded * RAND report: 28 days considered a valid timeframe. Internationally 30 days is more common * RAND report: avoidable rates listed in literature vary widely, but the report suggests 15% is a reasonable estimate. Does not recommend the use of a benchmark. * RAND report – does not recommend adjusting for socio-economic factors, recommends the use of adjustment for age, primary diagnosis and co-morbidities * RAND report: there are several known interventions for reducing readmission rates, so even with the issues, there does appear to be value in using this measure to drive quality improvement * If an org is already performing well and has already reduced avoidable readmissions, how will it compare over time when it will have little space for improvement? |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/21** | Explanation about what standardisation, if any is being proposed should be added to the documentation for the purpose of transparency. |
| **Update:** | Proposed that indirect standardisation by age, sex, method of admission and procedure/diagnosis is used as per the Compendium method. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/22** | Ancillary data in the production of the indicator should be given further consideration, including investigation of exclusions, particularly the number of spells excluded from the numerator (e.g. cancer and obstetrics) |
| **Update:** | Exclusions from obstetrics (primary diagnosis begins with ‘O’ or main specialty is 501, 560 or 610) are approximately 11% of CIP spells.  Exclusions due to cancer (any diagnosis beginning with ‘C’) are approximately 11% of CIP spells.  Exclusions due to obstetrics or cancer are approximately 18% of CIP spells. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/23** | Documentation is to be updated to clarify who is the attributable provider. Within NSHOD this is the provider of discharge. |
| **Update:** | Attributable provider is the provider of discharge. This is in line with the Compendium method. |

## NHS-OF 1.5 - Excess under 75 mortality rate in adults with serious mental illness

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| **Indicator** | **NHS-OF 1.5 - Excess under 75 mortality rate in adults with serious mental illness** |
| **Construction and data source** | The indicator is to compare the mortality rate in mental health patients with that of the general public. It uses the Mental Health Minimum Data Set (MHMDS), the Primary Care Mortality Database (PCMD), The ONS mortality data and mid-year population estimates.  Mental Health mortality rate  The MHMDS data set has been linked to the PCMD mortality data on NHS number. The indicator will be calculated on an annual basis.  **The denominator** will be the number of people who have been recorded as having contact with mental health services in the last three years. (Population-years-at-risk will be used for the denominator.)  **The numerator** will be the number of people who have died in the year in question who have been recorded as having contact with mental health services in the last three years.  General Population mortality rate  ONS mortality data and mid year population estimates will be used to calculate the general population rate.  Age range of indicator  The age range for each rate will be limited to 18-74. It is proposed to exclude those aged 75 and over to align with the other premature mortality indicators in Domain 1 of the NHS OF. Children under 18 are not included as there is no evidence that children with serious mental illnesses are at particularly high risk of death by disease.  Causes of Mortality  Mortality from all causes, not just from preventable or amenable causes, will be examined as all excess premature mortality in this particular group could potentially be improved through better quality of care, and through joint working between the NHS, Public Health and Social Care.    Comparison of rates  The two rates will be compared against one another as a ratio of mental health rate to general population rate. In order to compare rates, the mental health rate will be directly standardised to the general population by age and sex, or both will be directly standardised to the European Standard Population (ESP) by age.  Disaggregation’s  The method above is for the national level indicator. For sub national breakdowns (e.g. geographical, ethnicity, deprivation) the approach may need to change. Dependent on numbers indirect standardisation may be a more suitable approach. This is to be investigated now that the linked mental data is available. |
| **Rationale** | There is extensive published evidence that people with severe mental illness such as schizophrenia die between 15 and 25 years earlier than the average for the general population. This is a serious inequality of outcome for a vulnerable group and bodies such as the Disability Rights Commission have called upon the government to act to address it.  Key to a strategy to address the inequality is the ability to monitor the rate of premature deaths for this group over time and compare this with the rate for the general population. Reflecting the policy importance of this measurement, the published NHS and the published public health outcomes frameworks both include premature death of those with severe mental illness as outcomes against which progress will be assessed. Development and regular monitoring of the indicator is thus a top priority. |

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| **Potential issues** | The MHMDS and PCMD have not been linked before. The first linked data has been received by the HSCIC in January 2012. We have not had time to fully investigate it.  If the ESP was to be used the age range would need to be from 20 to 74 as the ESP does not have a population range starting at 18.  Other variables could be considered for standardising the mental health rate to the general rate. It is proposed that this is considered following the first iteration of the indicator.   * Dependent on the disaggregation in question the standardisation may be to the general population or the mental health population. For example, ethnicity is not recorded in the mortality data, so the general population rate cannot be split by this; MHMDS does record ethnicity, so rates could be compared within this data. |
| **Meeting Note From MRG** | Clarifications around the MHMDS. It is an adult data set, which has data back to 2006. It holds records of the most recent contact an individual has had with secondary mental health services.  All recommendations are to be taken back to the working group for this methodology. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/01** | Include reasoning as to why the PCMD has been used rather than ONS deaths data. |
| **Update:** | This will be included in the documents accompanying the publication of the indicator |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/02** | Measures of the quality of the linkage need to be presented with the indicator |
| **Update:** | This will be included in the documents accompanying the publication of the indicator. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/03** | Review issues around population at risk and inconsistencies between each side of the ratio. |
| **Update:** | In order to align the mental health and the general population rate, Population years at risk is not to be used for denominator of the former. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/04** | Investigate overlap in the mental health ‘population’ and the ‘general’ population |
| **Update:** | Excluding the mental health population from the general population by age and sex has little impact on the profile of the latter. This is true of the deaths as well as the population. The difference in population profile is shown in figures 1 and 2 below. |

**Figure 1**

chart showing general male population per age group with both GP and GP excluding mental health populations 

**Figure 2**

Chart showing female population numbers per age group showing both GP and GP excluding mental health populations

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/05** | The wording of the indicator title needs to be changed, as the proposed methodology means that the indicator is not an excess mortality rate, as portrayed in the current title. |
| **Update:** | The mental health and general population rates will be displayed along with the former minus the latter. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/06** | Population used to standardise, issues with European Standardised Population |
| **Update:** | The mental health rate will be directly standardised to the general population for each year the indicator is calculated for. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/07** | Other factors should be considered and possibly be adjusted for, in this case, deprivation, education, ethnicity. |
| **Update:** | For the first publication the indicator will be standardised by age and sex.  Deprivation has been considered and found to have a lesser impact on the directly standardised indicator than age and sex. Deprivation will be considered in the disaggregation’s of the indicator and will be reconsidered as an adjustment factor when the indicator is reviewed.  The whole of the IMD was considered when assessing deprivation impact on the indicator. The education and skills element of the IMD has been found to have a similar profile in the general and mental health population as the whole IMD.  Ethnicity will also be considered in the disaggregation’s of the indicator. Its impact on the directly standardised indicator has not yet been accessed. This is planned for future work. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/08** | A ‘Years of life lost’ approach should be considered; would this be more appropriate than looking at rates. |
| **Update:** | A ‘Years of life lost’ approach requires the use of the cause of death field in the MHMDS linked to PCMD data. This field requires further analysis in the data before it is used in the indicator. This is planned for future work. |

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| **Recommendations from Previous MRG** |  |
| Recommendation **2012/09** | Is it possible to split indicator by the nature of care, and also produce the proportion of cases in each care type to give context to the overall figure. |
| **Update:** | Nature of care is possible to examine to some extent, such as whether patients spent time as inpatients and/or on Care Programme Approach (CPA). This will be considered in the disaggregation’s of the indicator. |

# New indicators to be considered

There are no new indicators for consideration at this meeting of MRG

**MRG Meeting 3/5/2012 – Addendum**

**Comments supplied by Azim Lakhani in lieu of attendance**

**NHS-OF 3b: Emergency readmissions**

Potential issues - last bullet point - As this is primarily a national level indicator, this should not matter. Anticipating that the indicator could be disaggregated for other purposes, if a provider is performing optimally and there is little scope for improvement, that would be fine as a consistently low and steady value would be a marker of success.

Standardisation - The NCHOD method was approved nationally in 1999 for use in the NHS Performance Indicators and needs to be reviewed in the light of current thinking / approaches. The RAND / DH recommendations do this to a certain extent. Standardisation for diagnosis / procedures requires further reflection. In the NCHOD method for the Compendium, the indicator is standardised for diagnosis within selected medical specialties and procedures within selected surgical specialties, as agreed with the Royal Colleges of Physicians and Surgeons. The diagnosis and procedure groups for standardisation were derived at ICD 10 / OPCS 4 coding chapter, sub-chapter or 3 digit level where the readmission rate was significantly different from that of the next higher level in two consecutive financial years and there were at least 50 discharges in each year (the method and the resultant groups are described in the metadata).  As the Compendium publishes a 10 year time series, a one-off derivation of groups is fine. For the NHS-OF, this derivation would need to be updated as it is a few years old (Northgate have the business rules). In any case it would not be appropriate to use the NCHOD diagnosis groups as the indicator is now different (all ages, includes mental health, 30 days).There is a further issue in the light of recent discussions on the extent to which procedures are under the control of providers and the appropriateness or otherwise of risk adjustment for procedures. For consistency with SHMI, I do not believe we can defend risk adjustment for procedures any longer. I would thus suggest that we recommend not splitting the spells by medical and surgical specialties; not undertaking standardisation for procedures; developing diagnosis groups using the NCHOD method applied to all spells (not just medical); and risk adjusting for diagnosis across all spells. An additional issue is whether the derivation of diagnosis groups for risk adjustment should be undertaken each time the indicator is produced, or as a one-off exercise periodically. There will be implications for interpretation of time trends, establishing levels of ambition etc. The SHMI has faced similar issues. A final issue is that RAND recommended risk adjustment for comorbidity and we should test the need for this using the criteria for risk adjustment variables listed in our appraisal template.

**NHS-OF 1.5: Mental health mortality**

Validity: I still have reservations about comparing two standardised rates, each based on different sets of denominators and numerators, as a marker of premature mortality. Given the quoted rationale for the indicator (people with severe mental illness die (of any cause) between 15-25 years earlier than those in the general population) how valid is a comparison of in-year death rates in a population of patients with a historical record of mental illness, with in-year death rates in a general population? The concept of potential years of life lost is to estimate the length of time a person would have lived had they not died prematurely and is more in keeping with the rationale. The explanation that this option has not been investigated due to lack of time to investigate data quality appears a weak compromise given the importance / profile of this indicator. The potential years of life lost method, based on age at death,  would have to be modified in that it is not mental health as a cause of death that matters, rather the fact that the person who died (of any cause) had a known history of severe mental illness. Linkage with MHMDS to add this marker to the ONS deaths data / PCMD is an option for creating the necessary data set. I believe that the indicator would show whether people who died of any cause and had a history of severe mental illness had more potential years of life lost than those without a history of mental illness (matching the rationale for this indicator), although this would need to be worked up properly.

Mortality data quality: While the reason why PCMD has been used for linkage and the quality of linkage will be published, it is still important to cross-validate PCMD and ONS deaths data.

Disaggregation, risk adjustment variables: Using different approaches for the national indicator and disaggregated indicators will present difficulties in interpretation and be confusing for the users. Efforts should be made to have a common method for both. In addition, we have discussed elsewhere that while it is valid to measure deprivation inequality in order to document / understand it, risk adjustment for deprivation may not be appropriate. There is evidence that deprived populations may receive poorer quality of care (poor access, poor quality of information etc.) which is partially under the control of the NHS and adjusting the indicator for deprivation may remove the very element of quality that the service should be concerned about. This argument has been accepted for other NHS-OF indicators and the SHMI.

**MRG Recommendations Summary 3rd May 2012**

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| **Indicator** | **NOF 3b - Percentage of emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission.** |
| Rec 2012/76 | MRG’s view was that the standardisation used in the methodology was adequate for the moment although the issue will need reviewing to reflect that assumptions around the subject were dated and the issue has moved on. DoH is to receive feedback on this point |

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| **Indicator** | **NOF 1.5 - Excess under 75 mortality rate in adults with serious mental illness** |
| General Comments: | It was suggested that Years of Life Lost, rather than mortality, may provide more information to the indicator audience as it is more likely to show a bigger discrepancy. |
| Rec 2012/77 | Further feedback is required from DoH to gain more clarity on what the indicator is trying to assess and what is envisioned for how it will be used and interpreted. |
| Rec 2012/78 | A caveat be applied to this indicator identifying the issues around the complexities of interpreting this indicator due to the wide composition of the group of people captured within it (e.g. the mixture of severe and non-severe cases) |