

**UHCE OXFORD REPORT CR17
GYNAECOLOGY:
CASE FATALITY AND HOSPITAL RE-ADMISSION RATES**

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EXECUTIVE SUMMARY

Purpose of study

The Department of Health and the Healthcare Commission commissioned NCHOD to work with the Royal College of Obstetricians and Gynaecologists (RCOG) to develop for gynaecology a set of outcome indicators that could help clinicians and the Healthcare Commission.

Outline of study

The study is being carried in the following phases:

- Professional bodies contacted to nominate clinicians to work with NCHOD.
- Agreement reached between NCHOD and nominated clinicians about:
 - aggregations of activity to be used for analysis
 - types of analysis to be done
 - specific operations to be studied
 - candidate indicators to be studied further.
- NCHOD develops detailed specifications for each of the candidate indicators to be agreed with the clinicians.
- NCHOD produces national figures for each candidate indicator to provide:
 - data about the number of events and admissions nationally so that the suitability of the indicator as a comparative measure could be assessed.
- NCHOD produces trust-based comparative figures for each of the candidate indicators considered suitable, with respect to numbers of events and admissions, to identify whether the measure is a useful comparative indicator.
- Agreement is reached between NCHOD and nominated clinicians about a set of indicators to recommend to the Department and the Healthcare Commission for implementation.

Recommendations

Following discussions with the clinical advisers, it is recommended that case fatality rates are not used as an outcome indicator to screen trusts with respect to gynaecology. Once cases with cancer have been removed, there are less than 400 deaths per annum occurring within 30 days of the start of a gynaecological admission, an overall mortality rate of less than 0.06%.

Great care is required in interpreting the results of comparative emergency re-admission (ERA) rate analyses. After discussions with collaborating clinicians, it is recommended that the following indicators could be used for comparing trust performance:

- General indicators, ERA rates for:
 - day cases
 - elective admissions with an operation
 - elective admissions without an operation
 - emergency admissions with an operation
 - emergency admissions without an operation.
- High volume operation, ERA rates for:
 - elective abdominal uterus excision

1. BACKGROUND

Purpose of the study

The Department of Health and the Healthcare Commission commissioned the National Centre for Health Outcomes Development (NCHOD) at Oxford to work with the Royal College of Obstetricians and Gynaecologists to develop for gynaecology a set of outcome indicators that could help:

- Clinicians:
 - share information about prognosis with patients
 - assess outcomes in patients they have treated
 - compare outcomes of patients they have treated with colleagues' experience.
- Healthcare Commission to screen trusts as to whether their clinical performance needs further investigation.

Outcome indicators

For the purpose of studying outcomes, an indicator has been defined as an 'aggregated statistical measure, describing a group or whole population, compiled from measures on individuals that provide insights into the functioning of services'. Well-chosen indicators provide pointers as to where further investigation may be worthwhile but they do not necessarily provide definitive answers on whether services are good or inadequate.

As well as direct indicators of outcome such as mortality or re-admission rates, consideration in this study was given to the inclusion of proxy or indirect indicators of outcome such as the 'inappropriate' selection of cases.

Gynaecology

Gynaecology can be described by the operations done or the diagnoses of the in-patient episodes. Operations usually done by a gynaecologist relate to:

- lower female genital tract
- upper female genital tract
- evacuation of contents
- uterus adnexa
- fallopian tubes
- ovary and broad ligament
- female genital tract.

The diagnoses specifically relating to gynaecology are:

- inflammatory diseases of females
- non-inflammatory diseases of females
- pregnancy with abortive outcome
- complications of early pregnancy
- cancers of female organ

2. METHODS

Outline of the study

The study was carried in the following phases:

- Royal College of Obstetricians and Gynaecologists was contacted to
 - participate in the study
 - nominate clinicians to work with NCHOD.
- Agreement was reached between NCHOD and nominated clinicians about:
 - aggregations of activity to be used for analysis
 - types of analysis to be done
 - specific operations to be studied
 - candidate indicators to be studied further.
- NCHOD developed detailed specifications for each of the candidate indicators which were agreed with the clinicians.
- NCHOD produced national figures for each candidate indicator to provide:
 - national information about prognosis
 - data about the number of events and admissions nationally so that the suitability of the indicator as a comparative measure could be assessed.
- NCHOD produced trust-based comparative figures for each of the candidate indicators considered suitable, with respect to numbers of events and admissions, to identify whether the measure was a useful comparative indicator.
- Agreement was reached between NHOD and nominated clinicians about a set of indicators to recommend to the Department of Health and the Healthcare Commission for implementation.

Groups of gynaecology activity used

With the assistance of the collaborating clinicians a model of gynaecology has been developed, dividing the activity into different groups relating to:

- Suitability for measuring the performance of the specialty
- Appropriateness of using indicators derived from a linked file
- Relative risk of the occurrence of adverse events.

The finished consultant episode (FCE) is the measure for counting specialty activity. From routinely collected data, a FCE can be classified as:

- One which is:
 - first FCE in a continuous in-patient spell (CIPS), or
 - subsequent FCE when the patient is transferred from the original specialty of admission.
- One containing:
 - diagnostic code for cancer, or
 - no such codes.
- If a first FCE, one with mode of admission (if known) coded as:
 - emergency, or
 - elective, or
 - transfer from another hospital.
- If an elective admission, one coded as:
 - day case intended to be and discharged on the same day, or
 - overnight stay.

- One in which:
 - an operative procedure took place, or
 - no operative procedure took place.

The diagnostic codes used to identify cancer patients were those used for the specification of clinical indicator AS401 and are ICD-10 codes C00-97, D37-48 and Z51.1 (patient on chemotherapy for cancer).

In specifying the groups which had operations, FCEs which only had certain operative procedure codes were excluded and included in the non-operation group. A list of these codes, developed for clinical indicator AS401, is shown at Annex A.

The collaborating clinicians have agreed that, when comparing performance between hospital trusts, only admissions with a gynaecology first FCE should be used. The quality of care given in the originating FCE will greatly influence that delivered in subsequent FCEs and, indeed, the transfer may often occur because an adverse event has occurred in the initiating FCE.

Admissions with cancer diagnoses have been separately identified and will generally be omitted from the analyses because the routine databases of HES and ONS mortality are poor sources from which to derive cancer outcome statistics in that:

- Cancer survival measures are more appropriate indicators for comparing performance than case fatality rates.
- Comparative cancer mortality performance needs to be based on cancer networks not individual hospitals or trusts.
- Cancer diagnoses are associated with a disproportionately high rate of deaths during or following admission, thus masking less common causes of death.

Previous NCHOD work has shown that FCEs with different modes of admission and with and without an operative procedure performed have varying risks of adverse events occurring after them. Day cases, discharged on the same day as admission, very rarely lead to significant adverse events and there is little purpose in producing linked file indicators for this group of patients. Any patient intended to be a day case but who died rather than being discharged should be the subject of an investigation.

Whether the remaining groups of activity can be used for producing comparative outcome indicators from a linked file is a matter of statistical power and will depend on the number of:

- adverse events being measured
- admissions in the group
- NHS trusts being compared.

For the calendar year 2000 there were 742,941 gynaecology FCEs, of which 731,186 (98%) were the first FCE in a continuous in-patient spell (CIPS). Of the FCEs which were not first in a CIPS, 37% were in a spell starting with a gynaecology FCE.

Exhibit 1: Annual number of first FCEs and 0-29 day deaths and crude case fatality rates (per 100 FCEs)

Group	FCEs		0-29 day deaths		
	Number	%	Number	%	Rate %
With cancer diagnosis	19758	2.7	952	71.4	4.8
Elective without cancer:					
• day cases	346849	47.4	23	1.7	0.01
• overnight with operation	140179	19.2	89	6.7	0.06
• overnight no operation	20442	2.8	43	3.2	0.2
Emergency without cancer:					
• with operation	56089	7.7	26	1.9	0.05
• no operation	141851	19.4	170	12.7	0.1
Transfer without cancer	2781	0.4	10	0.8	0.4
Mode NK without cancer	3237	0.4	21	1.6	0.7
<i>Total</i>	<i>731186</i>	<i>100.0</i>	<i>1334</i>	<i>100.0</i>	<i>0.2</i>

Exhibit 1 shows, for sub-groups of the first FCE admissions, the number admitted annually and the number and case fatality rate for deaths occurring 0-29 days after admission.

Further analyses were done for the groups of elective admissions which had operations. Consultant advisers proposed the following operations as potential groups for the production of outcome indicators:

- abdominal excision of uterus
- bilateral excision of adnexae
- unilateral excision of adnexa
- prolapse
- vaginal excision of uterus.

Annex B shows the average annual number of procedure codes recorded for elective and emergency CIPS with a gynaecology FCE (excluding day cases and those admissions with cancer diagnoses).

There were over 30,000 elective admissions for abdominal excision of uterus per year with a crude CFR of 0.5%. Prolapse and vaginal excision of uterus each occurred in less than 20,000 elective admissions per year and had crude CFRs of 0.1% and 0.2% respectively. There were about 30,000 elective admissions for unilateral and bilateral excision of adnexae taken together with the crude CFRs being similar at 0.6% (unilateral) and 0.7% (bilateral). It was agreed to do analyses on:

- elective abdominal excision of uterus
- elective unilateral and bilateral excision of adnexae.

Database used

The database used was a linked file of English hospital episodes and ONS mortality data developed at Oxford. Index admissions were for the calendar years 1999-2001 and there was a further 90 days of data to allow the recording of the events of interest post-admission.

Analyses done

The analyses which were done related to:

- Occurrence of death within a specified time of start of admission.
- Occurrence of a first emergency re-admission for any cause within a specified time of discharge from index admission:

Analyses of trends over time require a means of dividing time into discrete periods. For most specifications, only the first recorded admission in the year for an individual has been included in the indicator denominator. However, it is recognised that that the first recorded event may not necessarily be the first relevant event.

For most analyses, continuous in-patient spells starting with a gynaecology FCE occurring in any position within the CIPS were used as the index admissions rather than finished consultant episodes. CIPS, relating to the duration of stay in a hospital, have been used rather than FCEs because they:

- are a more clinically relevant measure than FCEs
- obviate having to handle transfers between FCEs in an analysis.

Funnel plots

Results have been shown graphically as funnel plots which show standardised case fatality rates (SCFRs) on the y axis plotted against expected deaths on the x axis in a scatter plot. The horizontal line in the middle of each plot shows the national overall mortality rate around which the SCFRs cluster and this clustering is much more pronounced as the expected deaths get larger leading to a funnel shape. Poisson confidence intervals (95 and 99%) for each value of the expected are superimposed on top of the SCFRs. These confidence intervals are tabulated values for expected deaths less than 100 and calculated from a formula giving approximate values for expected deaths greater than 100 (from Bland).

Similar plots have been done for ERAs.

3. MORTALITY INDICATOR SPECIFICATIONS

Introduction

Death after a hospital admission may be an unavoidable event, a consequence of the natural history of illness or it may be an adverse event that reflects poorly on the care provided. Case fatality rates (CFR) are used by the Department of Health and the NHS to compare hospital performance and were recommended in five of the ten condition-specific reports published in 1999 by NCHOD:

- asthma
- acute myocardial infarction
- diabetes
- fractured proximal femur
- stroke.

Case fatality rates have also been used as clinical indicators and in star ratings. Those produced have included indicators for deaths within 30 days of:

- elective/elective admission operation
- heart by-pass/angioplasty
- emergency admission for fractured hip
- emergency admission for acute myocardial infarction
- emergency admission for stroke.

General specification issues

The index admissions used were CIPS with a gynaecology first FCE (excluding cancer diagnoses) which were:

- Day cases
- Elective admissions with an overnight stay which did have an operation.
- Elective admissions with an overnight stay which did not have an operation
- Emergency admissions which did have an operation.
- Emergency admissions which did not have an operation
- Admissions starting with a transfer from another hospital
- Admissions with mode of admission unknown.

In addition analyses were done for the following groups of operations:

- Elective abdominal excision of uterus
- Elective unilateral and bilateral excision of adnexae.

The issues that needed to be considered, in specifying the indicators, were:

- Inclusion of:
 - deaths recorded on death certificate *or*
 - deaths recorded on death certificate and/or HES record.
- Inclusion of:
 - all deaths recorded on death certificate regardless of cause *or*
 - deaths with specific diagnoses given as main cause of death *or*
 - deaths with specific diagnoses recorded anywhere on the record?
- Time interval from start of an index admission to death.

For all the specifications it was decided to include in the numerator, deaths:

- recorded on death certificate and/or HES
- from any cause.

For day case, elective admission and mode not known indicators, the time interval chosen was 0-29 days after start of index admission.

For emergency and transfer admission indicators, the time interval chosen was 0-89 days as the SMR for this period was markedly raised.

Case fatality rates were age/sex standardised. In common with the clinical indicator specifications, indirect standardisation was used and the indicators were standardised for age and sex. Indirect standardisation is to be preferred because it is:

- More robust with small numbers and avoids the distortions caused by direct standardisation based on unstable age-specific rates.
- More flexible with respect to future requirements such as standardising for other factors such as deprivation.

Specifications

The mortality indicators are:

- 1A. 0-29 day CFR for day cases
- 2A. 0-29 day CFR for overnight elective admissions which had an operation
- 3A. 0-29 day CFR for overnight elective admissions which did not have an operation
- 4A. 0-89 day CFR for emergency admissions which had an operation
- 5A. 0-89 day CFR for emergency admissions which did not have an operation
- 6A. 0-89 day CFR for admissions starting with a transfer
- 7A. 0-29 day CFR for admissions with mode of admission unknown
- 8A. 0-29 day CFR for elective abdominal excision of uterus
- 9A. 0-29 day CFR for elective excision of adnexae (uni- and bilateral)

MORTALITY INDICATOR SPECIFICATIONS

Indicator type/number: Mortality 1A

Definition

Proportion of gynaecology day cases (excluding those with a cancer diagnosis) that died 0-29 days after the start of the index admission.

Denominator

Gynaecology elective day case admission, occurring first in the calendar year for an individual:

- Day case defined as intended to be a day case and discharged same day as admission
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-29 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included

Indicator type/number: Mortality 2A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding day cases and those with a cancer diagnosis) in which an operative procedure took place, that died 0-29 days after the start of the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE that had an operative procedure, occurring first in the calendar year for an individual:

- Day case admissions are excluded
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-29 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included

Indicator type/number: Mortality 3A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding day cases and those with a cancer diagnosis) in which no operative procedure took place, that died 0-29 days after the start of the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE in which no operative procedure took place, occurring first in the calendar year for an individual:

- Day case admissions are excluded
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are included
- All ages
- Female sex.

Numerator

Death recorded 0-29 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included

Indicator type/number: Mortality 4A

Definition

Proportion of emergency CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) in which an operative procedure took place, that died 0-89 days after the start of the index admission.

Denominator

Emergency CIPS starting with a gynaecology FCE in which no operative procedure took place, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-89 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included.

Indicator type/number: Mortality 5A

Definition

Proportion of emergency CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) in which no operative procedure took place, that died 0-89 days after the start of the index admission.

Denominator

Emergency CIPS starting with a gynaecology FCE in which no operative procedure took place, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are included
- All ages
- Female sex.

Numerator

Death recorded 0-89 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included.

Indicator type/number: Mortality 6A

Definition

Proportion of transfer CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) that died 0-89 days after the start of the index admission.

Denominator

CIPS started by a transfer from another hospital and starting with a gynaecology FCE, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-89 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included.

Indicator type/number: Mortality 7A

Definition

Proportion of CIPS with mode of admission not known and starting with a gynaecology FCE (excluding those with a cancer diagnosis), that died 0-29 days after the start of the index admission.

Denominator

CIPS with mode of admission not known and starting with a gynaecology FCE, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-29 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included.

Indicator type/number: Mortality 8A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) and having abdominal excision of the uterus recorded as the main operation, that died 0-29 days after the start of the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE having abdominal excision of the uterus recorded as the main operation, occurring first in the calendar year for an individual:

- Operative code Q07
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-29 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included

Indicator type/number: Mortality 9A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) and having excision of adnexae recorded as the main operation, that died 0-29 days after the start of the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE having excision of the adnexae recorded as the main operation, occurring first in the calendar year for an individual:

- Operative codes Q22 (bilateral excision) and Q23 (unilateral)
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- All ages
- Female sex.

Numerator

Death recorded 0-29 days after start of index admission:

- Recorded on HES record and/or death certificate
- Deaths for all causes are included

4. MORTALITY INDICATOR PLOTS

Funnel plots

Exhibits 2 and 3 show for each indicator the number of:

- trusts that had consistent codes across the three years that were analysed and had more than 100 eligible admissions
- admissions
- deaths.

The figures in Exhibit 2 are obtained from a file of gynaecology FCEs occurring first in a CIPS in 2000 and those in Exhibit 3 are CIPS starting with a gynaecology FCE in 1999-2001.

Exhibit 4 shows for the years 1999-2001 for indicators selected to proceed to plots:

- crude case fatality rate
- number and proportion of trusts that had CFRs which were significant at the 95% significance level using confidence intervals (CI) on the observed deaths.

Only the operation-based indicators had adequate numbers of admissions and deaths and high enough case fatality rates to proceed to doing plots showing relative trust performance. The plots for indicators 8A and 9A are shown in Exhibits 5 and 6.

Funnel charts are a type of control chart which are useful when the sample size of plot data points vary. Control charts attempt to compare the degree of variation in some performance measure which was observed, compared to what would statistically be expected. The funnel charts we have presented show how SCFRs vary with expected deaths around the national average mortality rate. The Poisson confidence intervals represent the variation in SCFR we expect statistically. If only random variation is present for any given condition we would see 95% (for example), of the data points to be within these limits (for that level of confidence). In only presenting one set of confidence limits (for the expected deaths) the charts are clear and allow an idea of how much variation is present in the data to be ascertained quickly.

Thus the comparison of SCFRs (with confidence limits) to a national average to determine statistical significance means that the number of trusts appearing in Exhibit 4 will not correspond entirely to the number of trusts appearing outside the funnel limits, since they are calculated by two different methods.

Exhibit 2: Numbers of trusts, admissions, deaths and CFRs (year 2000) using FCE file

Indicator (days)	Number of trusts	Number of admissions	Number of deaths	CFR %
1A Day cases 0-29	189	346849	23	0.01
2A Elective with op 0-29	190	140179	89	0.06
3A Elective no op 0-29	182	20442	43	0.21
4A Emergency with op 0-89	173	56089	45	0.08
5A Emergency no op 0-89	170	141851	34	0.24
6A Transfer 0-89	158	2781	18	0.65
7A Mode not known 0-29	148	3237	21	0.65

Exhibit 3: Numbers of trusts, admissions and deaths 1999-2001 using CIPS file

Indicator (days)	Number of trusts	Number of admissions	Number of deaths
8A Elective uterus 0-29	148	75848	42
9A Elective adnexae 0-29	151	13859	8

Exhibit 4: 0-29 and 0-89 day crude CFRs and the number and proportion of trusts with CFR values outside the 95% observed confidence intervals 1999-2001 using CIPS file

Indicator (days)	CFR %	Number and (%) trusts outside CIs
8A Elective uterus 0-29	0.06	2 (1.4)
9A Elective adnexae 0-29	0.06	1 (0.7)

Exhibit 5: Mortality indicator 8A

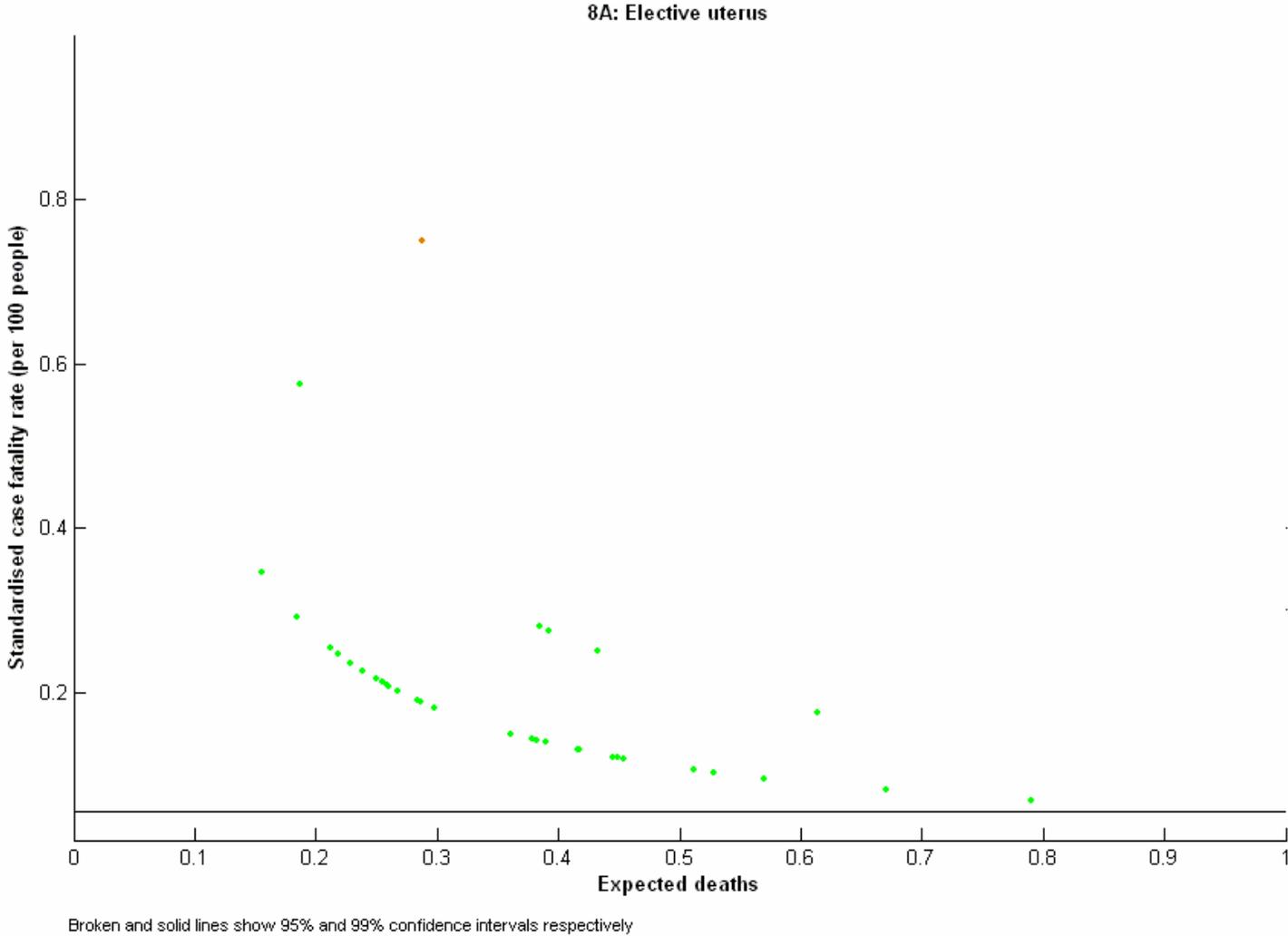
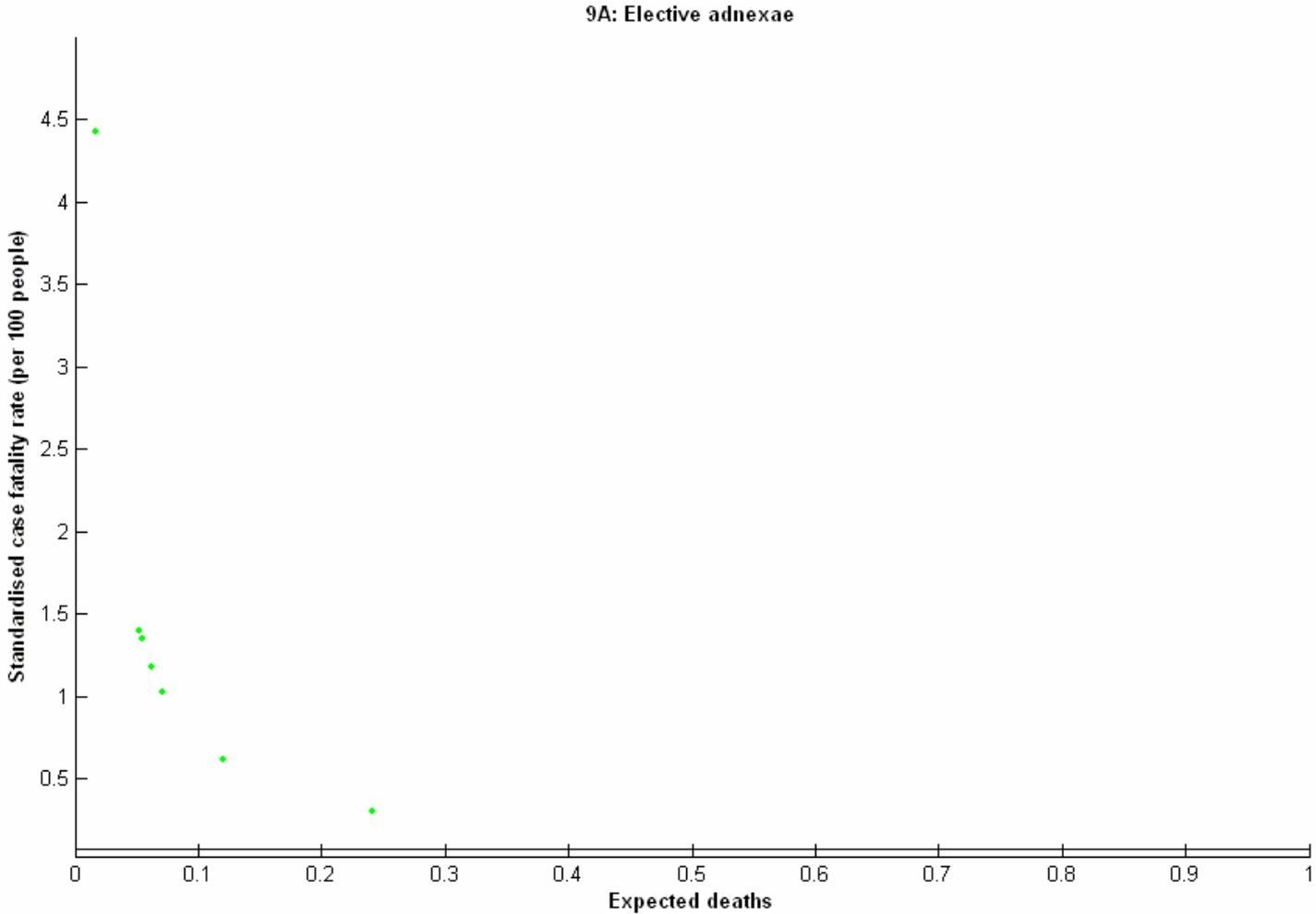


Exhibit 6: Mortality indicator 9A



Broken and solid lines show 95% and 99% confidence intervals respectively

5. EMERGENCY RE-ADMISSION INDICATOR SPECIFICATIONS

Introduction

Emergency re-admission (ERA) after hospital care may be a consequence of a wide range of factors including:

- natural progression of a patient's disease
- too early discharge from hospital
- sub-optimal care during the initial admission
- inadequate resources outside hospital.

Indicators based on emergency re-admission rates are considered to be a potentially useful means of comparing hospital performance and have been recommended in seven of the ten reports on specific conditions published in 1999 by NCHOD, namely:

- asthma
- acute myocardial infarction
- cataract
- fractured proximal femur
- incontinence
- severe mental illness
- stroke.

Re-admission rates are used as clinical indicators and in star ratings. Those produced have included indicators for emergency re-admission within 30 days of an admission:

- in which a hysterectomy was performed
- in which a hip replacement operation was performed
- for fractured hip
- for stroke
- of an older person (also 0-7 and 7-28 day re-admissions for this group of patients)
- of a child.

General specification issues

The index admissions used were CIPS with a gynaecology first FCE (excluding cancer diagnoses) which were:

- Day cases
- Elective admissions with an overnight stay which did have an operation.
- Elective admissions with an overnight stay which did not have an operation
- Emergency admissions which did have an operation.
- Emergency admissions which did not have an operation
- Admissions starting with a transfer from another hospital
- Admissions with mode of admission unknown.

In addition analyses were done for the following groups of operations:

- Elective abdominal excision of uterus
- Elective unilateral and bilateral excision of adnexae.

The issues that needed to be considered, in specifying the indicators, were:

- Time interval from end of an index admission to start of first emergency re-admission.

- Inclusion of:
 - deaths occurring in specified time period after end of index admission
 - same day re-admissions
 - index admissions with disposals other than home.
- Inclusion of all first emergency re-admissions or only those with specific diagnostic codes.

For day case, elective admission and mode not known indicators, the time interval chosen was 0-29 days from end of index admission. For emergency and transfer admission indicators, the time interval chosen was 0-89 days as the SMR, a proxy for the occurrence of adverse events, for this period was markedly raised.

Admissions were excluded from the analyses if the patient died during the index admission or during the time over which the index was being derived (29 days elective and 89 days for emergency admissions).

Index admissions were specified to include only those with a discharge home and, in these circumstances, same day re-admissions were included in the denominator. If admissions with other methods of disposal are included, it is difficult to distinguish genuine same day re-admissions from coding errors.

Initial analyses were done for all first emergency re-admissions regardless of diagnostic codes.

Emergency re-admission rates were age/sex standardised. In common with the clinical indicator specifications, indirect standardisation was used and the indicators were standardised for age and sex. Indirect standardisation is to be preferred because it is:

- More robust with small numbers and avoids the distortions caused by direct standardisation based on unstable age-specific rates.
- More flexible with respect to future requirements such as standardising for other factors such as deprivation.

Specifications

The emergency re-admission indicators are:

- 1A. 0-29 day ERA for day cases
- 2A. 0-29 day ERA for overnight elective admissions which had an operation
- 3A. 0-29 day ERA for overnight elective admissions which did not have an operation
- 4A. 0-89 day ERA for emergency admissions which had an operation
- 5A. 0-89 day ERA for emergency admissions which did not have an operation
- 6A. 0-89 day ERA for transfer admissions for all causes of re-admission
- 7A. 0-29 day ERA for admissions with mode of admission unknown
- 8A. 0-29 day ERA for elective abdominal excision of uterus
- 9A. 0-29 day ERA for elective excision of adnexae.

RE-ADMISSION INDICATOR SPECIFICATIONS

Indicator type/number: Re-admission 1A

Definition

Proportion of gynaecology day cases (excluding those with a cancer diagnosis) that had a first emergency re-admission starting 0-29 days after discharge from the index admission.

Denominator

Gynaecology elective day case admission, occurring first in the calendar year:

- Day case defined as intended to be a day case and discharged same day
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions with disposals other than home are excluded
- Admissions with death occurring within 29 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-29 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included
- Same day re-admissions are included.

Indicator type/number: Re-admission 2A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding day cases and those with a cancer diagnosis) in which an operative procedure took place, that had a first emergency re-admission starting 0-29 days after discharge from the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE that had an operative procedure, occurring first in the calendar year for an individual:

- Day case admissions are excluded
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the op codes listed in Annex A are excluded
- Admissions with disposals other than home are excluded
- Admissions ending in death or with death occurring within 29 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-29 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included
- Same day re-admissions are included.

Indicator type/number: Re-admission 3A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) in which no operative procedure took place, that had a first emergency re-admission starting 0-29 days after discharge from the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE in which no operative procedure took place, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are included
- Admissions with disposals other than home are excluded
- Admissions ending in death or with death occurring within 29 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-29 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included.
- Same day re-admissions are included.

Indicator type/number: Re-admission 4A

Definition

Proportion of emergency CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) in which an operative procedure took place, that had a first emergency re-admission starting 0-89 days after discharge from the index admission.

Denominator

Emergency CIPS starting with a gynaecology FCE in which an operative procedure took place, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are excluded
- Admissions with disposals other than home are excluded
- Admissions ending in death or with death occurring within 89 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-89 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included.
- Same day re-admissions are included.

Indicator type/number: Re-admission 5A

Definition

Proportion of emergency CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) in which no operative procedure took place, that had a first emergency re-admission starting 0-89 days after discharge from the index admission.

Denominator

Emergency CIPS starting with a gynaecology FCE in which no operative procedure took place, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions which only have the operation codes listed in Annex A are included
- Admissions with disposals other than home are excluded
- Admissions ending in death or with death occurring within 89 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-89 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included.
- Same day re-admissions are included.

Indicator type/number: Re-admission 6A

Definition

Proportion of transfer CIPS starting with a gynaecology FCE (excluding those with a cancer diagnosis) that had a first emergency re-admission starting 0-89 days after discharge from the index admission.

Denominator

CIPS starting with a transfer from another hospital and starting with a gynaecology FCE, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions with disposals other than home are excluded
- Admissions with death occurring within 89 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-89 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included
- Same day re-admissions are included.

Indicator type/number: Re-admission 7A

Definition

Proportion of CIPS with mode of admission unknown and starting with a gynaecology FCE (excluding those with a cancer diagnosis) that had a first emergency re-admission starting 0-29 days after discharge from the index admission.

Denominator

CIPS with mode of admission unknown and starting with a gynaecology FCE, occurring first in the calendar year for an individual:

- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions with disposals other than home are excluded
- Admissions with death occurring within 29 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-29 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included
- Same day re-admissions are included.

Indicator type/number: Re-admission 8A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) and having abdominal uterus excision recorded as the main operation, that had a first emergency re-admission starting 0-29 days after discharge from the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE that had abdominal uterus excision recorded as the main diagnosis, occurring first in the calendar year for an individual:

- Operative code Q07
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions with disposals other than home are excluded
- Admissions ending in death or with death occurring within 29 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-29 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included
- Same day re-admissions are included.

Indicator type/number: Re-admission 9A

Definition

Proportion of elective CIPS, starting with a gynaecology FCE (excluding those with a cancer diagnosis) and having excision of the adnexae recorded as the main operation, that had a first emergency re-admission starting 0-29 days after discharge from the index admission.

Denominator

Elective CIPS starting with a gynaecology FCE that had excision of the adnexae recorded as the main diagnosis, occurring first in the calendar year for an individual:

- Operative codes Q22 (bilateral) and Q23 (unilateral)
- Admissions with cancer diagnoses C00-97, D37-48 and Z51.1 are excluded
- Admissions with disposals other than home are excluded
- Admissions ending in death or with death occurring within 29 days of discharge from the index admission, without an earlier emergency re-admission, are excluded
- All ages and female sex.

Numerator

Emergency re-admission starting 0-29 days after discharge from index admission:

- Only first re-admissions after discharge are included
- Re-admissions for all causes are included
- Same day re-admissions are included.

6. RE-ADMISSION INDICATOR PLOTS

Funnel plots

Exhibits 7 and 8 show for each indicator the number of:

- trusts that had consistent codes across the three years that were analysed
- admissions
- emergency re-admissions.

The figures in Exhibit 7 are obtained from a file of gynaecology FCEs occurring first in a CIPS in 2000 and those in Exhibit 8 are CIPS starting with a gynaecology FCE in 1999-2001.

Exhibit 9 shows for the years 1999-2001 for indicators selected to proceed to plots:

- crude ERA rate
- number and proportion of trusts that had ERA rates which were significant at the 95% significance level using confidence intervals (CI) on the observed re-admissions.

The indicators 1A-5A and 8A had adequate numbers of admissions and ERAs and high enough ERA rates to proceed to doing plots showing relative trust performance. The plots are shown in Exhibits 10-15.

Funnel charts are a type of control chart which are useful when the sample size of plot data points vary. Control charts attempt to compare the degree of variation in some performance measure which was observed, compared to what would statistically be expected. The funnel charts we have presented show how standardised ERA rates vary with expected ERAs around the national average rate. The Poisson confidence intervals represent the variation in standardised ERA rates we expect statistically. If only random variation is present for any given condition we would see 95% (for example), of the data points to be within these limits (for that level of confidence). In only presenting one set of confidence limits (for the expected deaths) the charts are clear and allow an idea of how much variation is present in the data to be ascertained quickly.

Thus the comparison of standardised ERA rates (with confidence limits) to a national average to determine statistical significance means that the number of trusts appearing in Exhibit 9 will not correspond entirely to the number of trusts appearing outside the funnel limits, since they are calculated by two different methods.

Exhibit 7: Number of trusts, admissions and re-admissions and ERA rates for year 2000 using FCE file.

Indicator (days)	Number of trusts	Number of admissions	Number of re-admissions
1A Day cases 0-29	157	255321	4111
2A Elective with op 0-29	151	116148	4805
3A Elective no op 0-29	152	15776	768
4A Emergency with op 0-89	142	45260	3118
5A Emergency no op 0-89	148	94944	19279
6A Transfer 0-89	133	2195	204
7A Mode not known 0-29	51	1904	57

Exhibit 8: Number of trusts, admissions and re-admissions and ERA rates for 1999-2001 using CIPS file

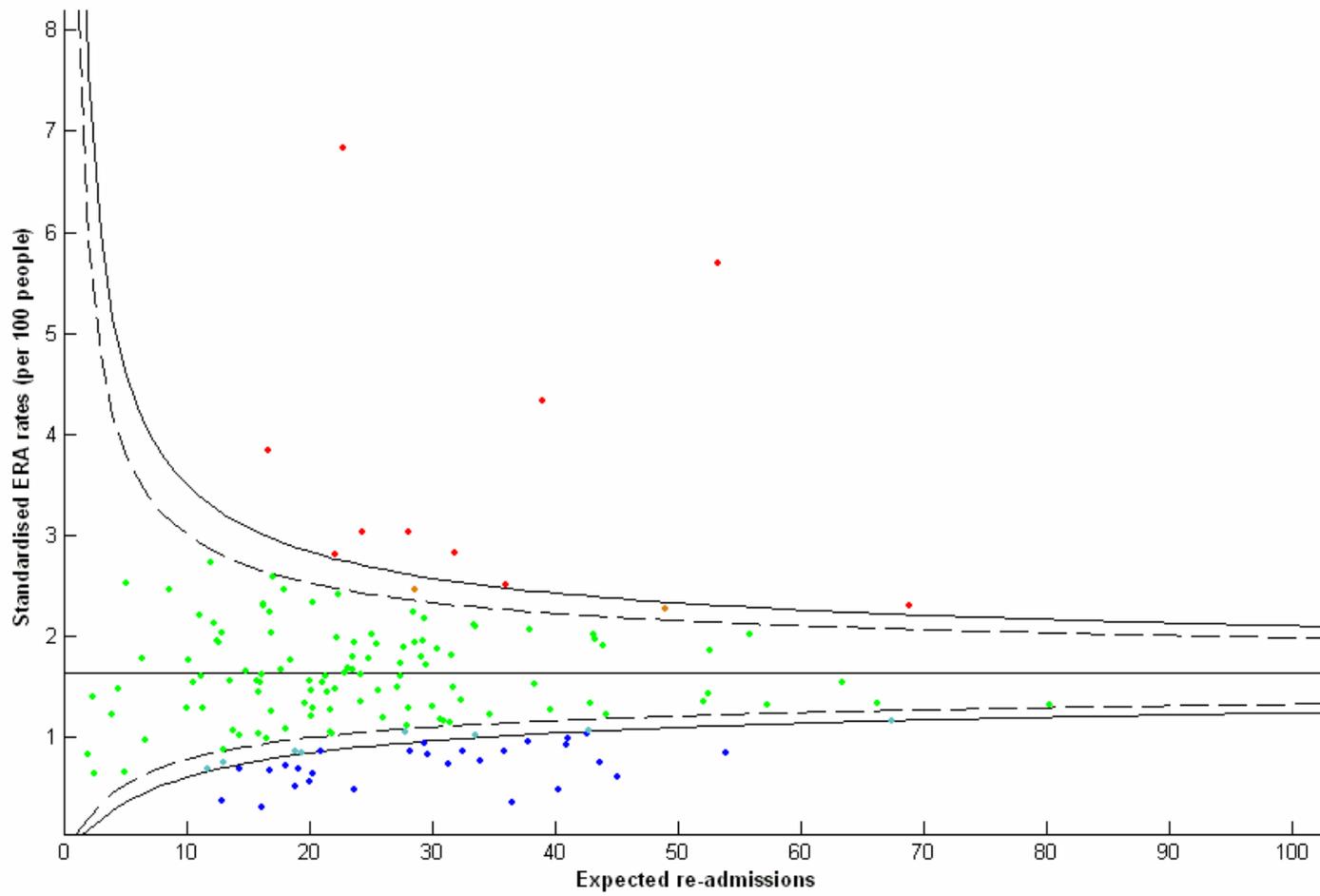
Indicator (days)	Number of trusts	Number of admissions	Number of re-admissions
8A Elective uterus 0-29	148	75195	4268
9A Elective adnexae 0-29	151	13724	630

Exhibit 9: 0-29 and 0-89 ERA rates and the number and proportion of trusts with ERA values which were significantly different from the national rate at the 95% confidence level for 1999-2001 using CIPS file

Indicator (days)	ERA %	Number and (%) trusts outside CIs
1A Day cases 0-29	2	49 (31)
2A Elective with op 0-29	4	33 (22)
3A Elective no op 0-29	5	12 (8)
4A Emergency with op 0-89	7	31 (22)
5A Emergency no op 0-89	20	84 (57)
6A Transfer 0-89	9	7 (5)
7A Mode not known 0-29	3	5 (10)
8A Elective uterus 0-29	6	25 (17)
9A Elective adnexae 0-29	5	4 (3)

Exhibit 10: Re-admission indicator 1A

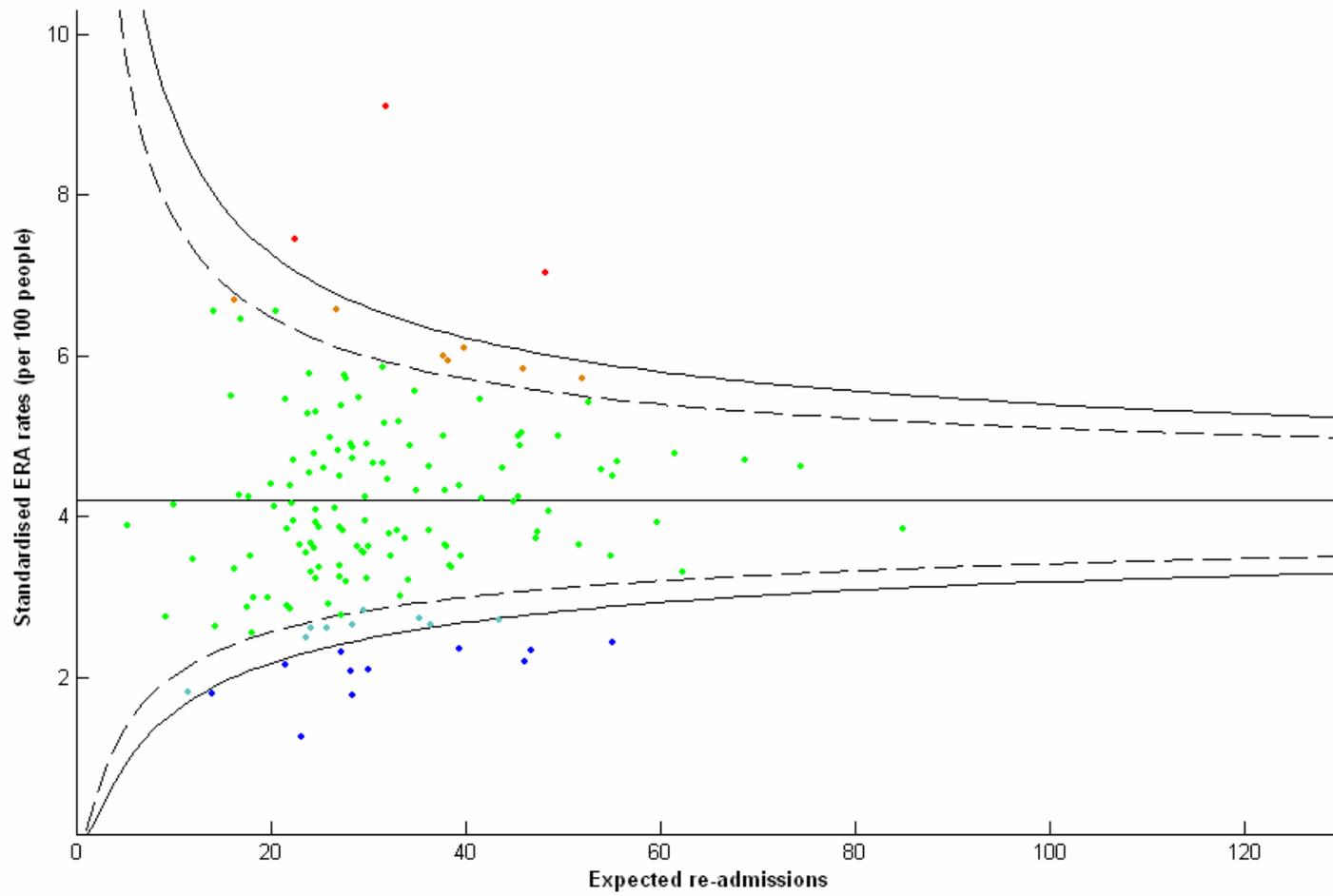
1A 0-29 day ERA for day cases for all causes of re-admissions



Broken and solid lines show 95% and 99% confidence intervals respectively

Exhibit 11: Re-admission indicator 2A

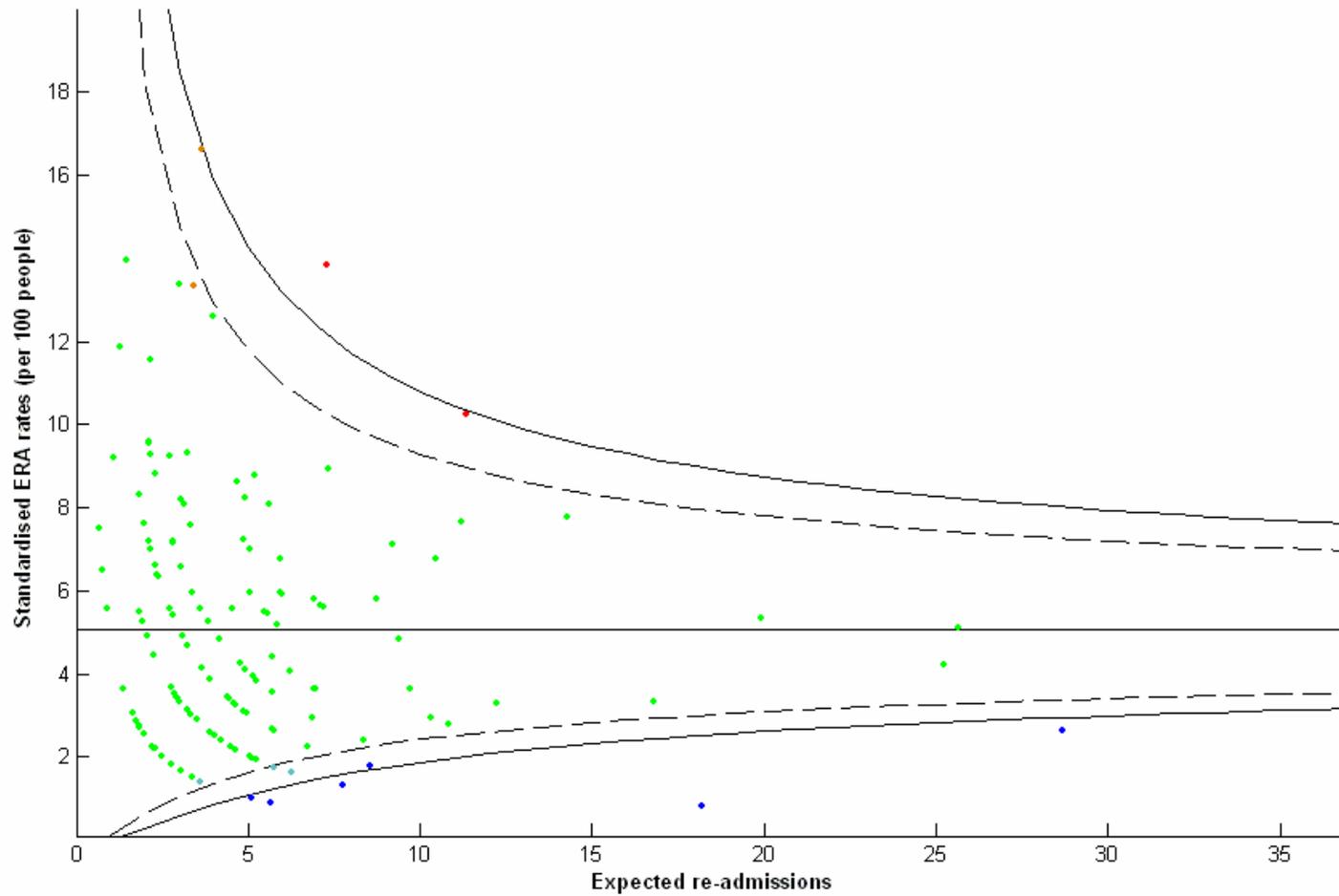
2A 0-29 day ERA for overnight elective admissions which had an operation for all causes of re-admission



Broken and solid lines show 95% and 99% confidence intervals respectively

Exhibit 12: Re-admission indicator 3A

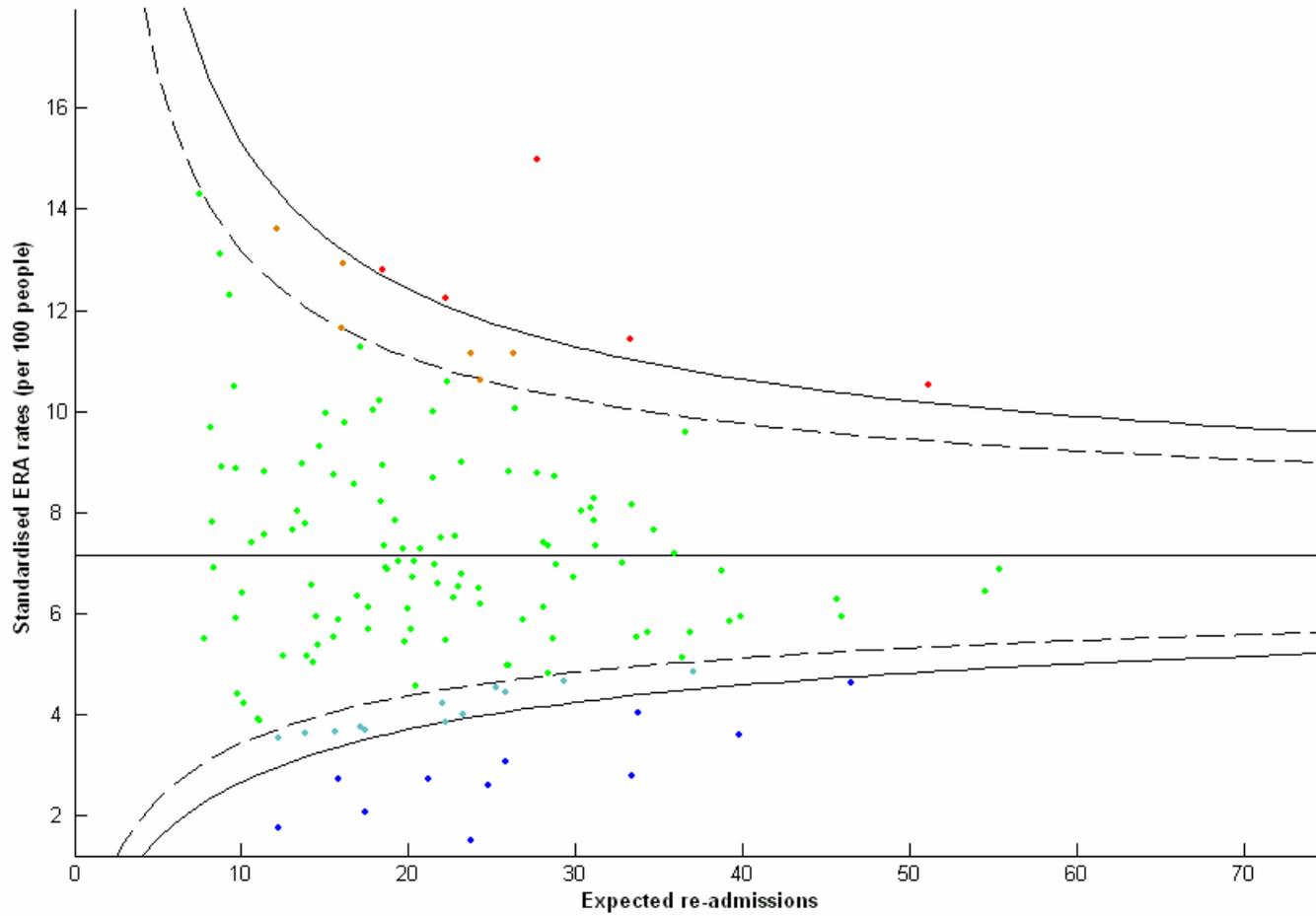
3A 0-29 day ERA for overnight elective admissions which did not have an operation for all causes of re-admission



Broken and solid lines show 95% and 99% confidence intervals respectively

Exhibit 13: Re-admission indicator 4A

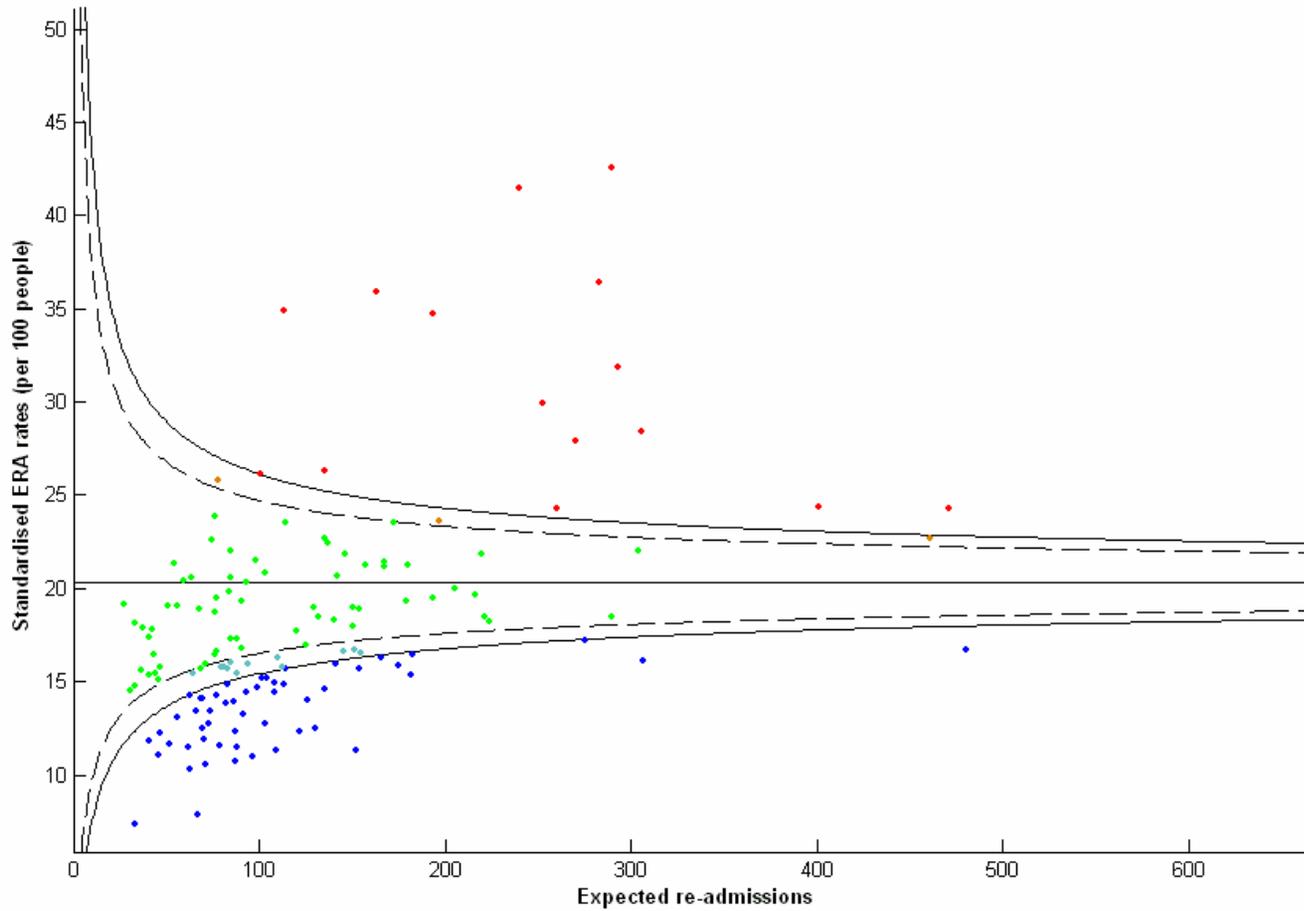
4A 0.89 day ERA for emergency admissions which had an operation for all causes of re-admission



Broken and solid lines show 95% and 99% confidence intervals respectively

Exhibit 14: Re-admission indicator 5A

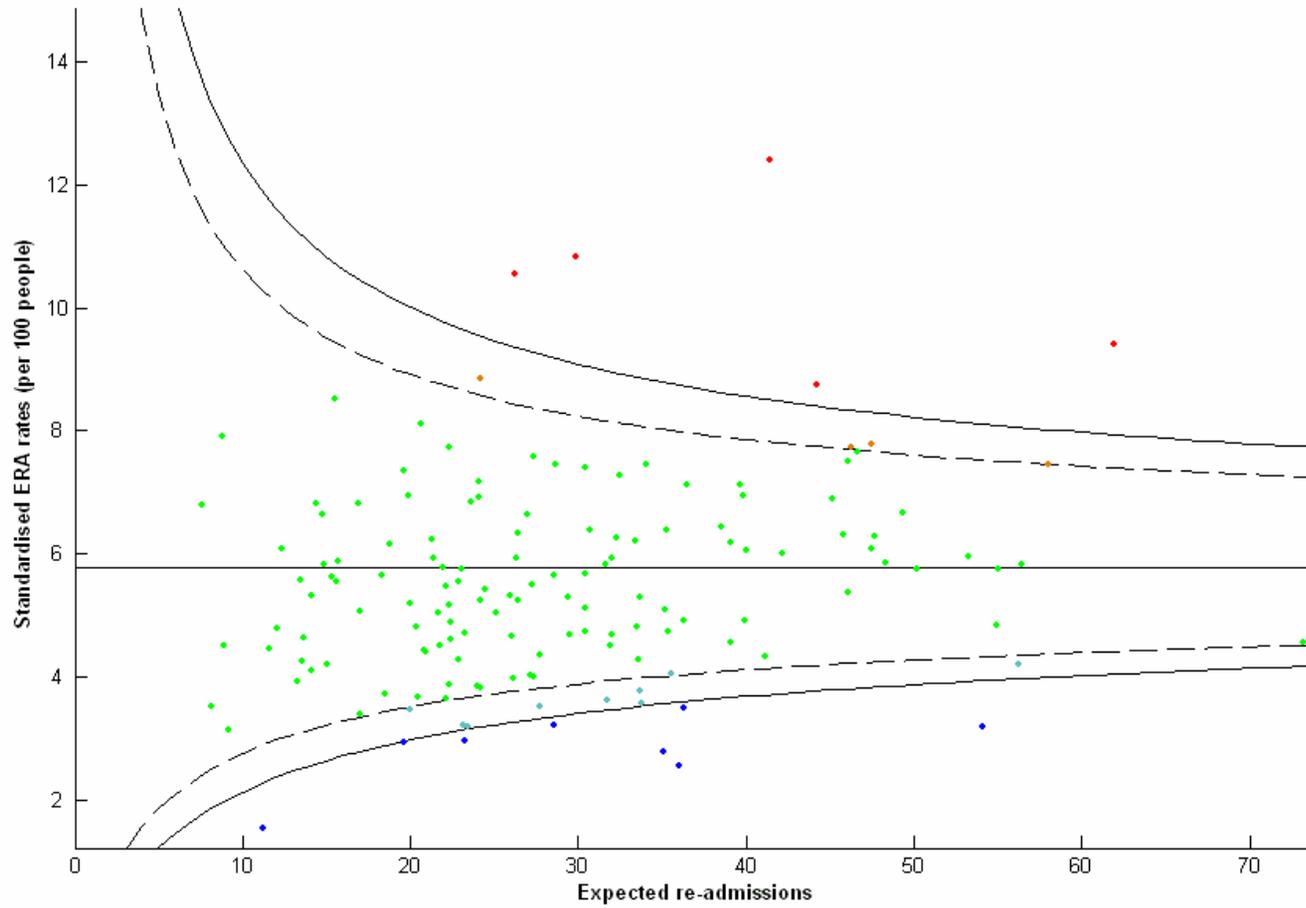
5A 0-89 day ERA for emergency admissions which did not have an operation for all causes of re-admission



Broken and solid lines show 95% and 99% confidence intervals respectively

Exhibit 15: Re-admission indicator 9A

9A 0-29 day ERA for elective abdominal uterus excision for all causes of re-admission



Broken and solid lines show 95% and 99% confidence intervals respectively

7. OUTLIER TRUSTS AND RECOMMENDATIONS

Outlier trusts

No trusts had low CFR values at the 95% significance level. Trusts which had high CFR values at the 95% significance level for:

- Mortality indicator 8A were:
 - Southend
 - Greenwich
 - University Coventry & Warwickshire.
- Mortality indicator 9A were:
 - Liverpool Womens
 - North Manchester.

Exhibit 16 shows for elective admission indicators 1A-3A and 8A those trusts that had ERA rate values higher (marked H) or lower (marked L) than the national rate at the 95% significance level.

Exhibit 17 shows for emergency admission indicators 4A-5A those trusts that had ERA rate values higher (marked H) or lower (marked L) than the national rate at the 95% significance level.

Recommendations

The results have been discussed with collaborating clinicians. They have agreed that none of the case fatality indicators addressed is suitable as an outcome measure for screening comparative gynaecological performance. It was agreed that there were no further potential CFR indicators that should be investigated.

Great care is required in interpreting the results of comparative ERA rate analyses. After discussions with collaborating clinicians, it is recommended that the following indicators could be used for comparing trust performance:

- General indicators:
 - day cases
 - elective admissions with an operation
 - elective admissions without an operation
 - emergency admissions with an operation
 - emergency admissions without an operation.
- High volume operation:
 - elective abdominal uterus excision.

The more clinically specific an indicator, the less case-mix and disease severity are likely to be confounders. The most specific measures of this set of indicators are ERA rates for day cases and elective abdominal uterus excision .

Exhibit 16: Trusts with more than two standardised elective re-admission rates (ERAs) significantly different from the national ERA rate for indicators 1A-3A and 8A. H and L denote an ERA significantly higher and lower than the national ERA rate respectively. Statistical significance was assessed using 95% confidence intervals which were based on a Poisson distribution on the observed number of re-admissions.

ELECTIVE ADMISSION INDICATORS

Trust	1A	2A	3A	8A	Number Hs/Ls
ROTHERHAM GENERAL	H	H	H	H	4
THE KINGS MILL CENTRE		H	H	H	3
UNIVERSITY COVENTRY & WARWICKS	H	H		H	3
BIRMINGHAM HEARTLANDS & SOLIHULL		H		H	2
CHESTERFIELD & NORTH DERBYSHIRE	H	H			2
KINGS LYNN & WISBECH	H	H			2
NORTH DURHAM		H		H	2
NORTHUMBRIA	H			H	2
NOTTINGHAM CITY	H	H			2
SOUTH TEES		H		H	2
CHORLEY & SOUTH RIBBLE		L		L	2
JAMES PAGET	L			L	2
NORTH WEST LONDON	L	L			2
PORTSMOUTH	L	L			2
PRESTON	L	L			2
SOUTHPORT & ORMSKIRK		L		L	2
ST GEORGE'S	L		L		2
TAMESIDE & GLOSSOP	L			L	2
UNIVERSITY COLLEGE LONDON	L	L			2
KINGSTON	L	L		L	3
NORTHERN DEVON	L	L		L	3
SOUTH MANCHESTER UNIVERSITY	L	L		L	3
FRIMLEY PARK	L	L	L	L	4

Exhibit 17: Trusts with two standardised emergency re-admission rates (ERAs) significantly different from the national ERA rate for indicators 4A-5A. H and L denote an ERA significantly higher and lower than the national ERA rate respectively. Statistical significance was assessed using 95% confidence intervals which were based on a Poisson distribution on the observed number of re-admissions.

EMERGENCY ADMISSION INDICATORS

Trust	4A	5A	Number Hs/Ls
BIRMINGHAM HEARTLANDS & SOLIHULL	H	H	2
BLACKPOOL VICTORIA	H	H	2
GATESHEAD	H	H	2
OLDHAM	H	H	2
THE KINGS MILL CENTRE	H	H	2
WARRINGTON	H	H	2
BASILDON & THURROCK	L	L	2
BROMLEY	L	L	2
EALING	L	L	2
KINGSTON	L	L	2
MID ESSEX	L	L	2
MID STAFFORDSHIRE	L	L	2
NORTH HAMPSHIRE	L	L	2
NORTH WEST LONDON	L	L	2
SOUTHPORT & ORMSKIRK	L	L	2
ST GEORGE'S	L	L	2
STOKE MANDEVILLE	L	L	2
WEST SUFFOLK	L	L	2

ANNEX A: OPCS4 CODES EXCLUDED FROM GROUPS WITH OPERATIONS

A18	Diagnostic endoscopic exam of ventricle of brain	M47	Urethral catheterisation of bladder
A52	Therapeutic epidural injection	M77	Diagnostic endoscopic exam of urethra
ASS	Diagnostic spinal puncture	Q12	Intrauterine contraceptive device
A84	Neurophysiological operations	Q55	Exam of female genital tract
B32	Biopsy of breast	R02	Diagnostic endoscopic exam of foetus
B37	Other operations on breast	R05	Diagnostic percut exam of foetus
E25	Diagnostic endoscopic exam of pharynx	R14	Surgical induction of labour
E36	Diagnostic endoscopic exam of larynx	R15	Other induction of labour
E42.3	Exteriorisation of trachea - temporary tracheostomy	R24	Normal delivery
E49	Diagnostic fiberoptic endoscopic exam of lower resp tract	R27	Other operations to facilitate delivery
E51	Diagnostic endoscopic exam of lower resp tract using rigid bronchoscope	S13	Punch biopsy of skin
E63	Diagnostic endoscopic exam of mediastinum	S14	Shave biopsy of skin
G16	Diagnostic fiberoptic endoscopic exam of oesophagus	S15	Other biopsy of skin
G19	Diagnostic endoscopic exam of oesophagus using rigid oesophagoscope	S50	Introduction of other inert substance into subcutaneous tissue
G45	Diagnostic fiberoptic endoscopic exam of UGI tract	S51	Introduction of destructive substance into subcutaneous tissue
G55	Diagnostic endoscopic exam of duodenum	S52	Introduction of therapeutic substance into subcutaneous tissue
G65	Diagnostic endoscopic exam of jejunum	S53	Introduction of substance into skin
G80	Diagnostic endoscopic exam of ileum	T11	Diagnostic endoscopic exam of pleura
H22	Diagnostic endoscopic exam of colon	T12	Puncture of pleura
H25	Diagnostic endoscopic exam of lower bowel using fiberoptic sigmoidoscope	T43	Diagnostic endoscopic exam of peritoneum
H28	Diagnostic endoscopic exam of colon using rigid sigmoidoscope	T46	Other drainage of peritoneal cavity
J09	Diagnostic endoscopic exam of liver using laparoscope	T81	Biopsy of muscle
J13	Diagnostic percut liver operation	T86	Lymph node sampling
J25	Diagnostic percut gall bladder operation	T90	Lymphangiography
J43	Diagnostic endoscopic retro exam of bile & pancreatic duct	V47	Biopsy of spine
J44	Diagnostic endoscopic retro exam of bile duct	V49	Exploration of spine
J45	Diagnostic endoscopic retro exam of pancreatic duct	W36	Diagnostic bone puncture
J67	Diagnostic percut pancreatic operation	W87	Diagnostic endoscopic exam of knee joint
K58	Diagnostic transluminal heart operation	W88	Diagnostic endoscopic exam of other joint
L71.4	Therapeutic transluminal artery operation	X29	Cont infusion of therapeutic substance
L72	Diagnostic transluminal artery operation (not femoral/iliac)	X30- X39	Injection/transfusion
L91	Other vein related operations	X40- X49	Dialysis/donation
L95	Diagnostic transluminal vein operation	X50	External resuscitation
M11	Diagnostic endoscopic exam of kidney	X51	Body temperature change
M30	Diagnostic endoscopic exam of ureter	X55.8	Other operations on unspecified organ other specified
M45	Diagnostic endoscopic exam of bladder	X55.9	Other operations on unspecified organ other unspecified

Z and Y codes (sites and methods) are also excluded from these indicators.

**ANNEX B: FREQUENCY OF OPERATIVE PROCEDURE CODES
(LESS ADMISSIONS WITH CANCER DIAGNOSES)
Codes in italics are those listed in Annex A**

ELECTIVE ADMISSIONS (LESS DAY CASES)

Operative procedure code	Per annum
H02	268
<i>L71</i>	<i>183</i>
M37	318
M38	626
M43	409
<i>M45</i>	<i>3584</i>
<i>M47</i>	<i>1651</i>
M49	465
M51	430
M52	4590
M53	3328
M56	403
M76	365
M79	297
P03	422
P05	1240
P06	206
P09	1602
P11	138
P13	841
P20	624
P22	523
P23	19754
P24	1857
P25	659
P26	504
P27	753
P29	690
P31	251
Q01	2322
Q02	1480
Q03	2586
Q05	270
Q07	31763
Q08	15842
Q09	1505
Q10	7062
Q11	4237
<i>Q12</i>	<i>2708</i>
Q14	2517
Q15	363
Q16	531

Q17	Therapeutic endoscopic operations on uterus	5433
Q18	Diagnostic endoscopic examination of uterus	17312
Q20	Other operations on uterus	532
Q22	Bilateral excision of adnexa of uterus	23114
Q23	Unilateral excision of adnexa of uterus	6423
Q24	Other excision of adnexa of uterus	661
Q25	Partial excision of fallopian tube	248
Q27	Open bilateral occlusion of fallopian tubes	484
Q29	Open reversal of female sterilisation	355
Q30	Other repair of fallopian tube	480
Q31	Incision of fallopian tube	132
Q32	Operations on fimbria	145
Q34	Other open operations on fallopian tube	229
Q35	Endoscopic bilateral occlusion of fallopian tubes	5857
Q37	Endoscopic reversal of female sterilisation	148
Q38	Other therapeutic endoscopic operations on fallopian tube	336
Q39	Diagnostic endoscopic examination of fallopian tube	704
Q41	Other procedures on fallopian tube	2456
Q43	Partial excision of ovary	2656
Q44	Open destruction of lesion of ovary	200
Q47	Other open operations on ovary	807
Q49	Therapeutic endoscopic operations on ovary	2620
Q50	Diagnostic endoscopic examination of ovary	219
Q52	Operations on broad ligament of uterus	160
Q54	Operations on other ligament of uterus	462
Q55	<i>Other examination of female genital tract</i>	2603
R12	Operations on gravid uterus	403
S06	Other excision of lesion of skin	243
S52	<i>Introduction of therapeutic substance into subcutaneous tissue</i>	1306
S60	Other operations on skin	181
T25	Primary repair of incisional hernia	183
T30	Opening of abdomen	1492
T31	Other operations on abdominal wall	130
T33	Open extirpation of lesion of peritoneum	128
T36	Operations on omentum	2361
T41	Other open operations on peritoneum	2046
T42	Therapeutic endoscopic operations on peritoneum	2770
T43	<i>Diagnostic endoscopic examination of peritoneum</i>	9266
T46	<i>Other drainage of peritoneal cavity</i>	707
T87	Excision or biopsy of lymph node	157
X29	<i>Continuous infusion of therapeutic substance</i>	340
X30	<i>Injection of therapeutic substance</i>	152
X33	<i>Other blood transfusion</i>	1522
X35	<i>Other intravenous injection</i>	160
X37	<i>Intramuscular injection</i>	140
Y06	<i>Excision of lesion of organ noc</i>	208
Y08	<i>Laser therapy to organ not otherwise classifiable</i>	772
Y11	<i>Other destruction of organ noc</i>	595

Y13	<i>Other destruction of lesion of organ noc</i>	507
Y22	<i>Drainage of organ not otherwise classifiable</i>	251
Y25	<i>Suture of organ not otherwise classifiable</i>	206
Y33	<i>Puncture of organ not otherwise classifiable</i>	152
Y36	<i>Introduction of non removable material into organ not otherwise</i>	136
Y50	<i>Approach through abdominal cavity</i>	3490
Y53	<i>Percutaneous approach to organ under image control</i>	132
Y71	<i>Late operations not otherwise classifiable</i>	337
Y80	<i>General anaesthetic</i>	2876
Y81	<i>Spinal anaesthetic</i>	452
Y82	<i>Local anaesthetic</i>	268
Z38	<i>Terminal branch of aorta</i>	152
Z44	<i>Vagina</i>	157
Z45	<i>Uterus</i>	147
Z46	<i>Other female genital tract</i>	145
Z49	<i>Skin of trunk</i>	307
Z53	<i>Abdominal wall</i>	167
Z94	<i>Laterality of operation</i>	10755

EMERGENCY ADMISSIONS

Operative procedure code	Per annum
G45 <i>Diagnostic endoscopic examination upper gastrointestinal tract</i>	137
H01 Emergency excision of appendix	423
H02 Other excision of appendix	195
M45 <i>Diagnostic endoscopic examination of bladder</i>	364
M47 <i>Urethral catheterisation of bladder</i>	862
P03 Operations on Bartholin gland	2732
P05 Excision of vulva	293
P09 Other operations on vulva	1254
P25 Other repair of vagina	214
P26 Introduction of supporting pessary into vagina	327
P27 Exploration of vagina	428
P29 Other operations on vagina	312
P31 Operations on pouch of Douglas	129
Q01 Excision of cervix uteri	412
Q02 Destruction of lesion of cervix uteri	437
Q03 Biopsy of cervix uteri	252
Q05 Other operations on cervix uteri	169
Q07 Abdominal excision of uterus	714
Q10 Curettage of uterus	5304
Q11 Other evacuation of contents of uterus	33210
Q12 <i>Intrauterine contraceptive device</i>	1332
Q14 Injection of abortifacient into uterine cavity	2056
Q17 Therapeutic endoscopic operations on uterus	231
Q18 Diagnostic endoscopic examination of uterus	1290
Q20 Other operations on uterus	177
Q22 Bilateral excision of adnexa of uterus	829
Q23 Unilateral excision of adnexa of uterus	4742
Q24 Other excision of adnexa of uterus	751
Q25 Partial excision of fallopian tube	981
Q30 Other repair of fallopian tube	454
Q31 Incision of fallopian tube	829
Q35 Endoscopic bilateral occlusion of fallopian tubes	160
Q39 Diagnostic endoscopic examination of fallopian tube	176
Q43 Partial excision of ovary	834
Q47 Other open operations on ovary	346
Q49 Therapeutic endoscopic operations on ovary	854
Q55 <i>Other examination of female genital tract</i>	537
R28 Instrumental removal conception products from delivered uterus	276
S47 Opening of skin	210
T30 Opening of abdomen	939
T34 Open drainage of peritoneum	165
T36 Operations on omentum	318

T41	Other open operations on peritoneum	387
T42	Therapeutic endoscopic operations on peritoneum	367
T43	<i>Diagnostic endoscopic examination of peritoneum</i>	5443
T46	<i>Other drainage of peritoneal cavity</i>	614
X29	<i>Continuous infusion of therapeutic substance</i>	1481
X30	<i>Injection of therapeutic substance</i>	1302
X33	<i>Other blood transfusion</i>	2511
X35	<i>Other intravenous injection</i>	613
X37	<i>Intramuscular injection</i>	184
X55	<i>Other operations on unspecified organ</i>	253
Y22	<i>Drainage of organ not otherwise classifiable</i>	223
Y50	<i>Approach through abdominal cavity</i>	1958
Y53	<i>Percutaneous approach to organ under image control</i>	280
Y71	<i>Late operations not otherwise classifiable</i>	259
Y80	<i>General anaesthetic</i>	1589
Y82	<i>Local anaesthetic</i>	126
Y90	<i>Other non-operations</i>	440
Z44	<i>Vagina</i>	137
Z45	<i>Uterus</i>	532
Z46	<i>Other female genital tract</i>	186
Z49	<i>Skin of trunk</i>	159
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Z94	<i>Laterality of operation</i>	8992