

30-day post operative mortality following major surgery - Help

Introduction

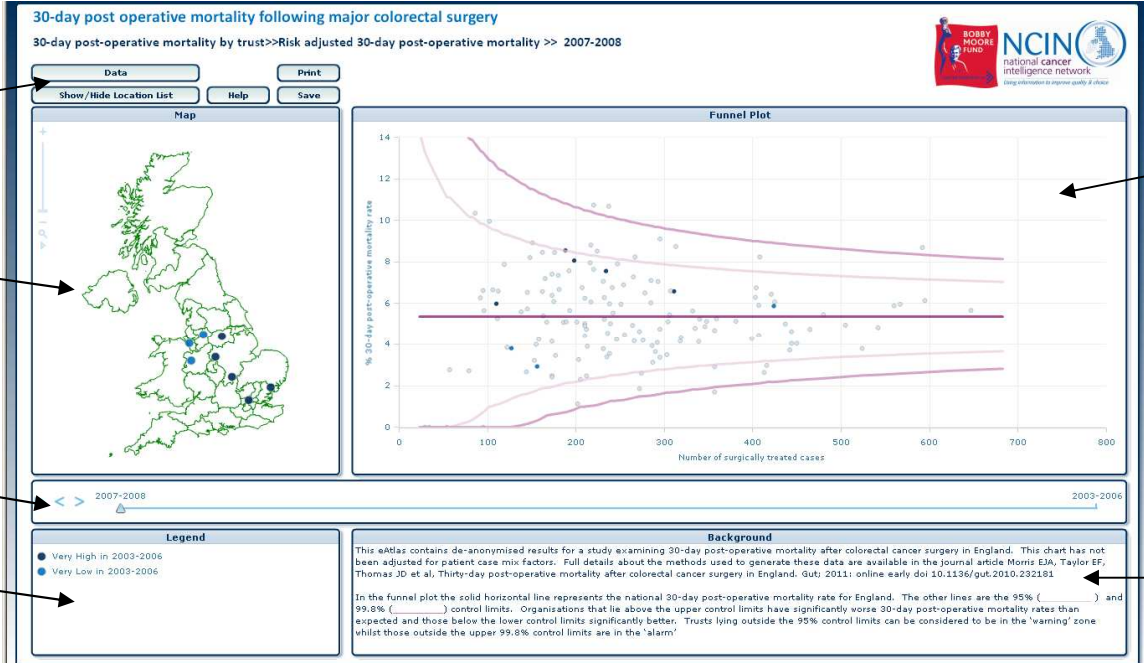
The 30-day post operative mortality e-Atlas provides a way to view 30-day post operative mortality data by NHS trust. It is an interactive tool which uses maps, funnel plots and data tables to display information relating to areas of the UK.

The 30-day post operative mortality e-Atlas contains de-anonymised results for a study examining 30-day post-operative mortality after colorectal cancer surgery in England. This chart has been adjusted for patient case mix factors. Full details about the methods used to generate these data are available in the journal article Morris EJA, Taylor EF, Thomas JD et al, Thirty-day post-operative mortality after colorectal cancer surgery in England. Gut; 2011; online early doi 10.1136/gut.2010.232181

The 2003-2006 funnel plot shows the performance of all trusts, but only outlying trusts are named on the map. The 2007-2008 funnel plot shows the updated performance of those outlying trusts.

This help document can be read as a walkthrough which will guide you through all of the features available on the maps in a logical order.

Using the e-Atlas



The screenshot shows the e-Atlas interface for 30-day post-operative mortality following major colorectal surgery. The interface is divided into several sections:

- 1:** Navigation and data selection section at the top, including buttons for 'Data', 'Print', 'Show/Hide Location List', 'Help', and 'Save'.
- 2:** A map of the United Kingdom showing the locations of various NHS trusts.
- 3:** A navigation bar for selecting different time periods, currently set to '2007-2008'.
- 4:** A funnel plot showing the percentage of 30-day post-operative mortality rate versus the number of surgically treated cases. The plot includes a solid horizontal line for the national rate and two sets of control limits (95% and 99.8%).
- 5:** A legend at the bottom left indicating that blue dots represent trusts that were 'Very High in 2003-2006' and red dots represent trusts that were 'Very Low in 2003-2006'.
- 6:** A background information section at the bottom right providing details about the study and the methodology used to generate the data.

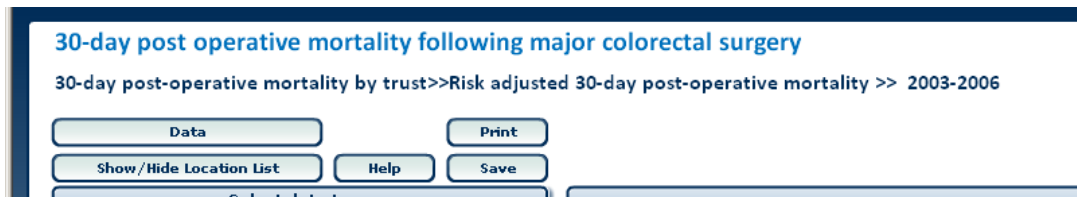
The interactive maps are split into six main areas:

1. A navigation and data selection section
2. A UK map allowing selection of outlying trust

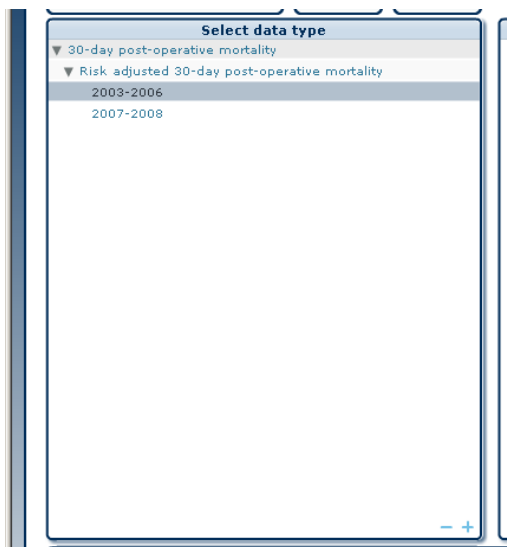
3. A time line to allow scrolling through the plots
 4. A funnel plot
 5. A key to the funnel plots
 6. A notes section describing each funnel plot
- Each of the areas is described in detail below

Navigation and data selection

The navigation section of the report contains five navigational buttons.



The Data button allows selection of the time period to view



The title section of the e-Atlas shows the current navigational position within the atlas. Therefore in the example above we are viewing:

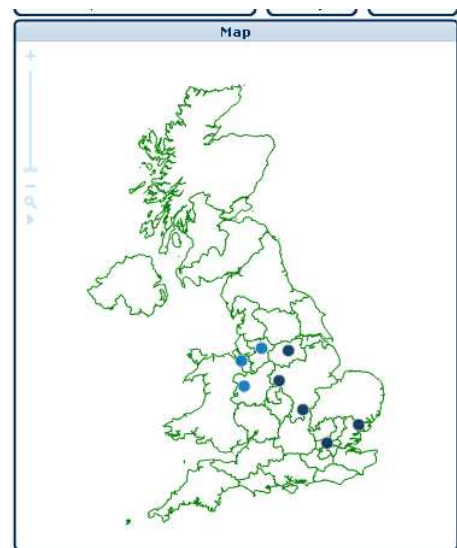
- Risk adjusted
- 2003-2006

To highlight a specific trust on the funnel plot they can be selected either by selecting from the map or by using the Show/Hide Location List button to select the location from a list. Only trusts who are outliers in the 2003-2006 period can be identified on an individual level.

The remaining buttons will take you to the help document or allow you to print or save the current page of the e-Atlas.

UK map allowing selection of NHS trust

To highlight the position of a particular trust on the funnel plot the relevant area can be selected on the map. Move the mouse over the map and the name of each trust will be shown next to the mouse pointer and its position will be highlighted on the funnel plot. Clicking on the trust will highlight the area on the map and the funnel plot.



Only trusts who are outliers in the 2003-2006 period can be identified on an individual level.

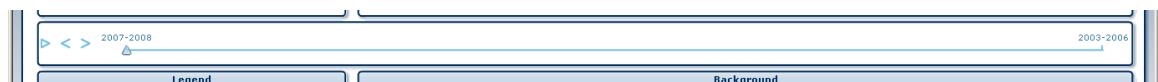
The colours on the map indicate which area of the funnel plot the trust falls into. Details of the colours used can be found in the Legend section.

Up to three areas can be compared by pressing the control (Ctrl) key on the keyboard and then selecting multiple areas on the map.

You can zoom in and out on the map using the + and – icons on the top left hand corner of the map. The map can then be dragged to show the area of interest in greater detail.

Timeline

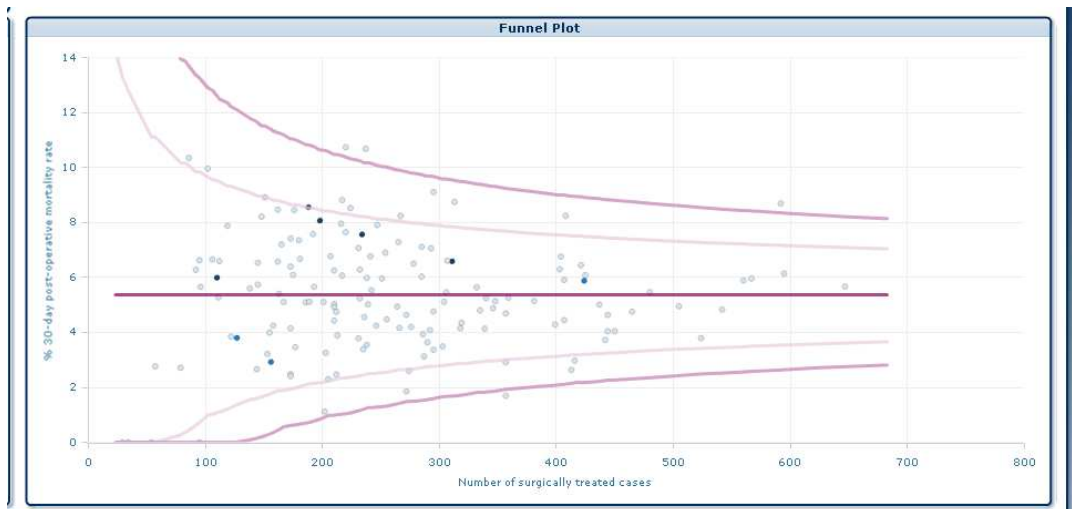
The timeline section of the report allowing scrolling between the two time periods (2002-2006 and 2007-2008) for either the adjusted data without having to enter the Data menu.



Funnel Plots

The funnel plots show the position of each trust with the proportion of deaths within 30 days of major colorectal surgery relative to the number of deaths. By floating the mouse pointer over a point in the funnel plot the same of the network/trust can be seen and an indication of which category it falls into.

The only trusts that can be identified on a named basis are those which are outliers in the 2003-2006 data.



In the funnel plot the solid horizontal line represents the national 30-day post-operative mortality rate for England. The other lines are the 95% () and 99.8% () control limits. Organisations that lie above the upper control limits have significantly worse 30-day post-operative mortality rates than expected and those below the lower control limits significantly better. Trusts lying outside the 95% control limits can be considered to be in the 'warning' zone whilst those outside the upper 99.8% control limits are in the 'alarm' zone. Such differences may warrant further investigation. For further information on interpreting funnel plots see Spiegelhalter D J, Funnel plots for comparing institutional performance. *Stats Med* 2005; 24:1185-1202.

Key to the funnel plots

The legend section of the report shows the colours allocated to each category (Very Low, Within 99.8% confidence interval, Very High) these can be defined in relation to the funnel plot as follows.

Category	Description	Funnel Plot Zone
Very Low	Outside the low 99.8% confidence limit in 2003-2006	
Within 99.8% confidence interval	All other trusts	
Very High	Outside the high 99.8% confidence limit in 2003-2006	Alarm

Notes section

For each funnel plot the notes section provides a brief description of the data displayed, how it should be interpreted and where to go for further information.