Using mortality data to improve the quality and safety of patient care
December 2017

Version	Date Published	Notes
19.0	21/12/2017	19th publication
18.0	21/09/2017	18th publication
17.0	21/06/2017	17th publication
16.0	21/03/2017	16th publication
15.0	19/12/2016	15th publication
14.0	21/09/2016	14th publication
	21/06/2016	Not published
13.0	21/03/2016	13th publication
12.0	18/12/2015	12th publication
11.0	18/09/2015	11th publication
10.0	19/06//2015	10th publication
9.0	20/03/2015	9th publication
8.0	19/12/2014	8th publication

4.0	20/12/2013	4th publication
3.0	20/09/2013	3rd publication
2.1	28/08/2013	Figures revised in line with national guidance
1.0	22/03/2013	1st publication

Contents

Publication notes

This document is the Health Board's 19th release of data relating to mortality.

As in previous publications, the Health Board is publishing other contextual mortality data sourced from the Office for National Statistics (ONS). This provides context to the risk adjusted figures, and further evidence of the quality of care provided. As this data is published less frequently, it is now presented as a separate document.

All data that appear in the document are also available as Excel tables and charts on our web site[1].

Data has been sourced from the All Wales Benchmarking system and ONS.

---

[1]http://www.wales.nhs.uk/sitesplus/861/page/68460

Introduction

Quality and Safety

Betsi Cadwaladr University Health Board is committed to delivering safe and high quality healthcare services. Everyone who works for the Health Board has a part to play in driving up standards. We must always put the safety of our patients at the heart of everything we do. To support this, the Board is engaged in a wide range of activities to ensure patient safety, and provide patients with appropriate assurance about the quality and safety of our services.

A key element of this continual cycle of quality improvement is the analysis and understanding of mortality information. This, our 19th publication, contains updated figures for measures up to June 2017. For measures that do not rely on clinical coding, later data is available.

Why are we monitoring these figures?

The Health Board monitors mortality on a regular basis, with any concerns investigated. The focus is on continuous quality improvement and timely intervention to ensure the best outcome for our patients.

Focused on learning we firmly believe that every death deserves a review and have put extensive processes in place to ensure this happens.

What are we measuring?

Crude Mortality

A crude (or unadjusted) mortality rate takes no account of risk factors. The definition is therefore relatively simple (actual deaths in a month ÷ total discharges per month x 100). This figure, stated as a rate per 100 discharges naturally varies by the population served, as well as the mix of specialties provided – for example, Ysbyty Glan Clwyd has a Cancer Treatment Centre, and the time of year. As crude mortality is not affected by the clinical coding process, more recent data is provided.

Common Medical Emergencies

Stroke, heart attack and hip fracture are common medical emergencies associated with mortality. Monitoring mortality for these conditions provides us with further useful information on the quality of care in our hospitals. All three conditions are more prevalent in older people whose health may be more fragile so death cannot always be avoided.

Clinical Coding

Clinical Coding is the process of transcribing a patient's diagnosis and treatment from their case notes onto the Patient Administration System. The quality and timeliness of this data is essential to support reporting. Condition specific indicators reported in this document, such as stroke, heart attack, hip fracture, and the risk adjusted mortality indicators, rely on the clinical coding to define the condition and treatment.
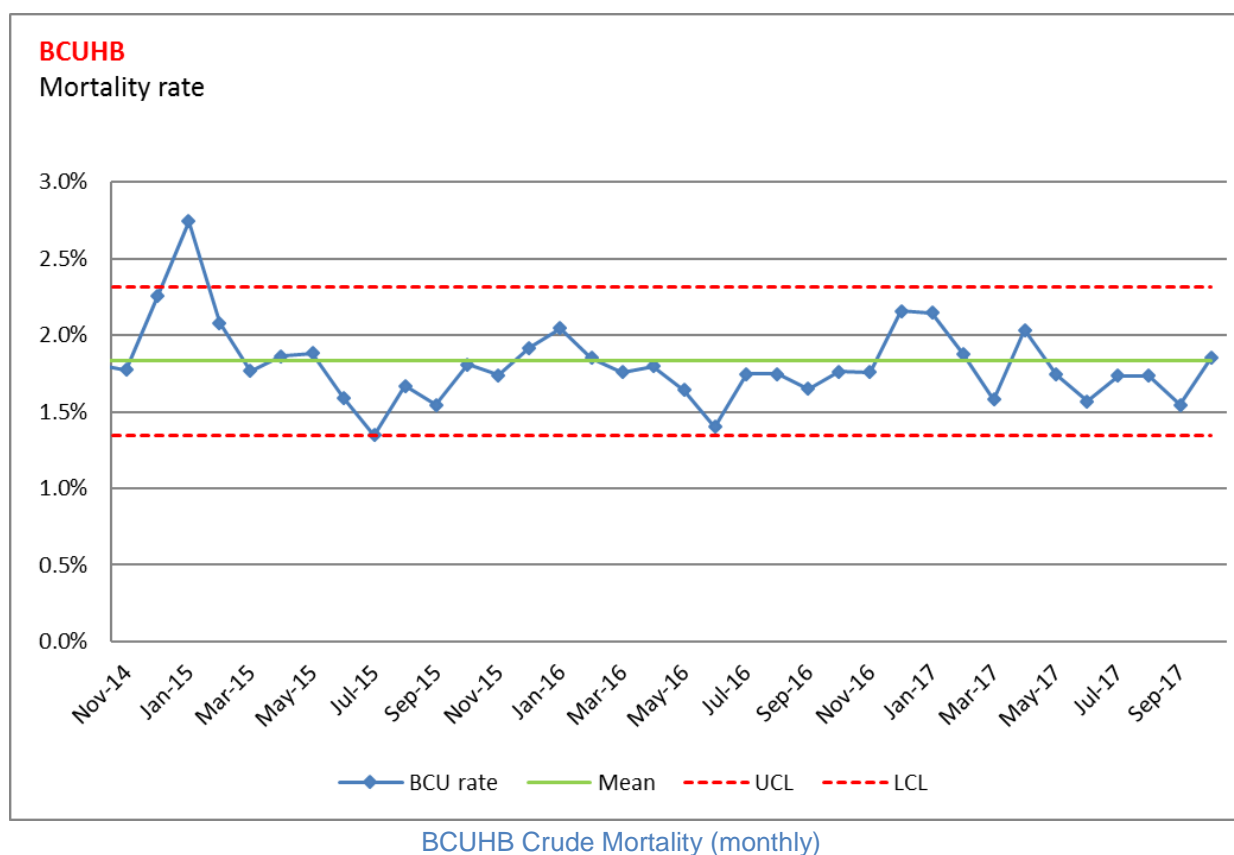
The national target is 95% completeness for any given month within 1 month of episode end date, and 98% for any rolling 12 months within 1 month of episode end date. The Health Board is not achieving the timeliness of these targets at present. Work is underway to recover this position. For the 12 month period covered by this report, the Health Board achieved 94.7% coding completeness.

What does this data tell us?

Health Board wide

For the 12 months to October 2017, the average number of deaths per month was 298 across the Health Board. The crude mortality rate for the 12 months to October 2017 was 1.81% (1 in 55 patients), which is on a par with the Welsh average at 1.83% (1 in 55 patients).

The following chart shows the monthly crude mortality for the Health Board as a control chart, with standard deviations of the mean 95% of the time. In Jan 15 there were more deaths than expected (based on the chart data). Previous analysis identified the cause of this to be a mutation in the flu strain.

BCUHB
Mortality rate
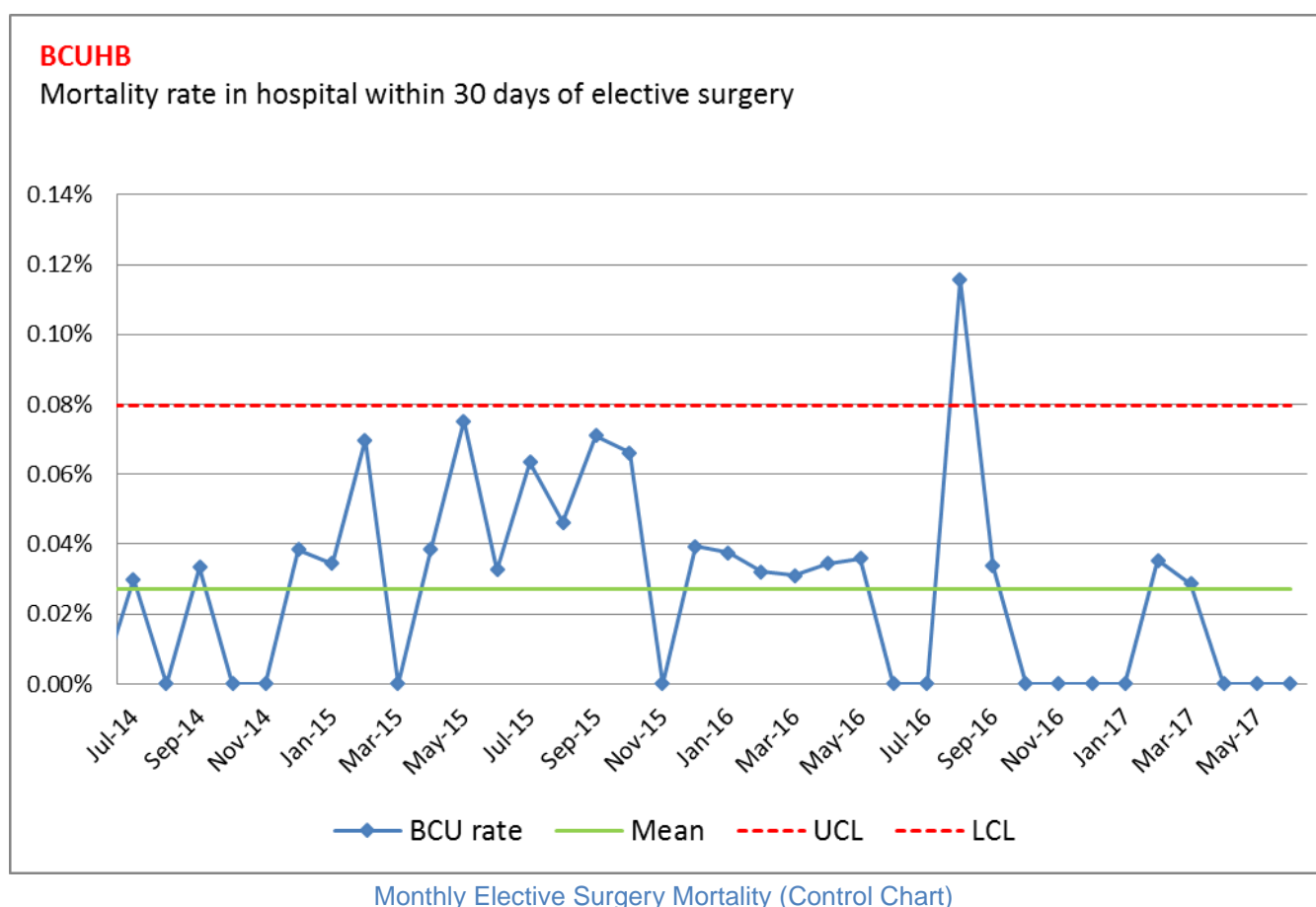
BCUHB Crude Mortality (monthly)

Mortality following Surgery

The following two indicators present information on mortality within 30 days of elective (planned) or non-elective (emergency) surgery. As the measures are not risk adjusted, they will be affected by the type of surgery, and patient population.
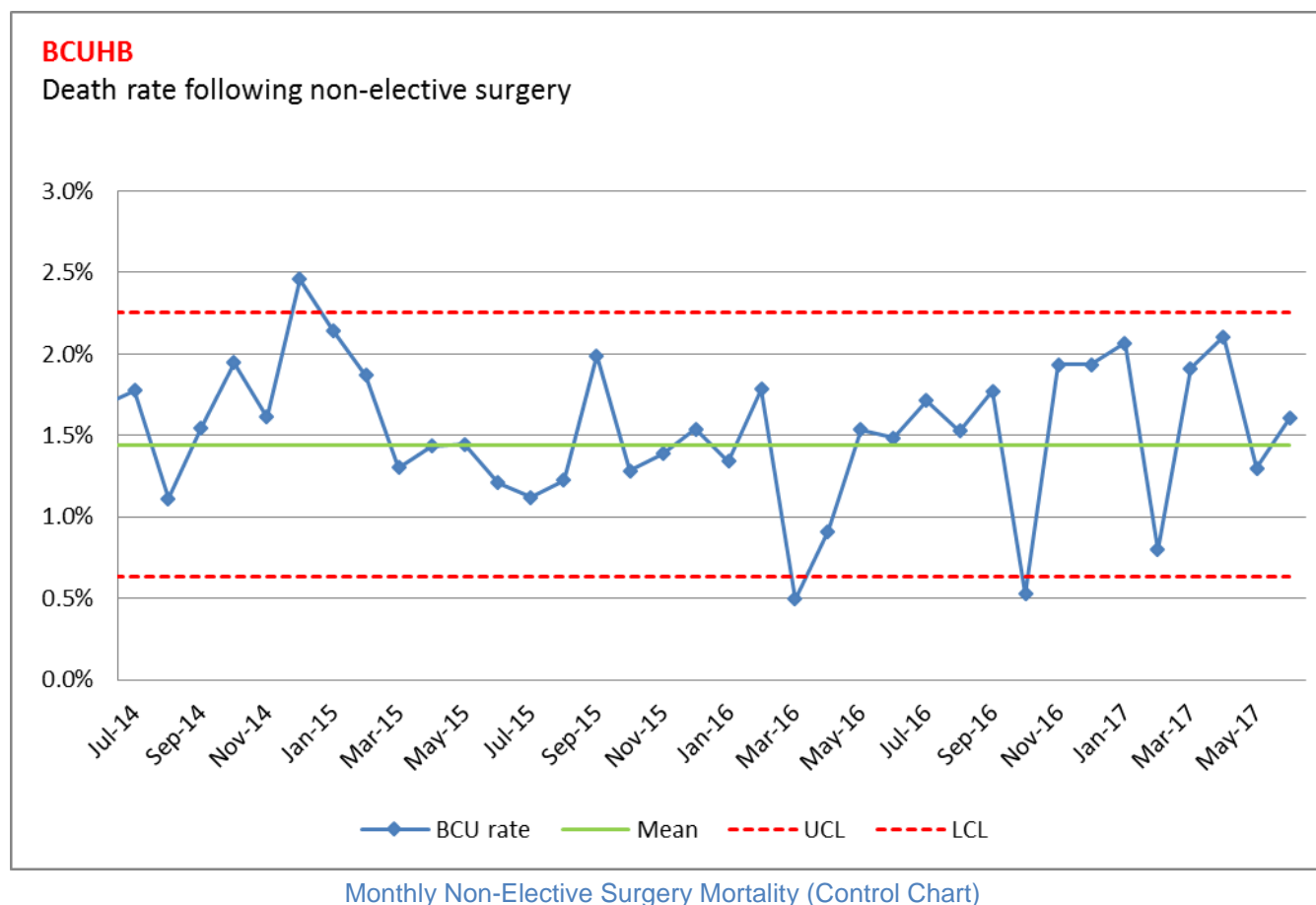
In both elective and non-elective surgery, the mortality rate within 30 days is very low. The 12 months to June 2017 shows a mortality rate of 0.018% for elective surgery (1 in 5632 patients), which was better than the Welsh average of 0.031% (1 in 3265 patients). For non-elective (emergency) surgery the rate was 1.59% (1 in 63 patients), which was better than the Welsh average of 1.67% (1 in 60 patients).

The following charts shows the monthly elective and non-elective mortality rates as control charts with mean, upper and lower control limits.

Monthly Elective Surgery Mortality (Control Chart)

All cases identified in Aug 2016 have been reviewed as part of the health board's mortality review process. No issues in care were identified during the review processes for all of the

deaths and all cases were complex as well as having significant high risk co-morbidities.

BCUHB
Death rate following non-elective surgery

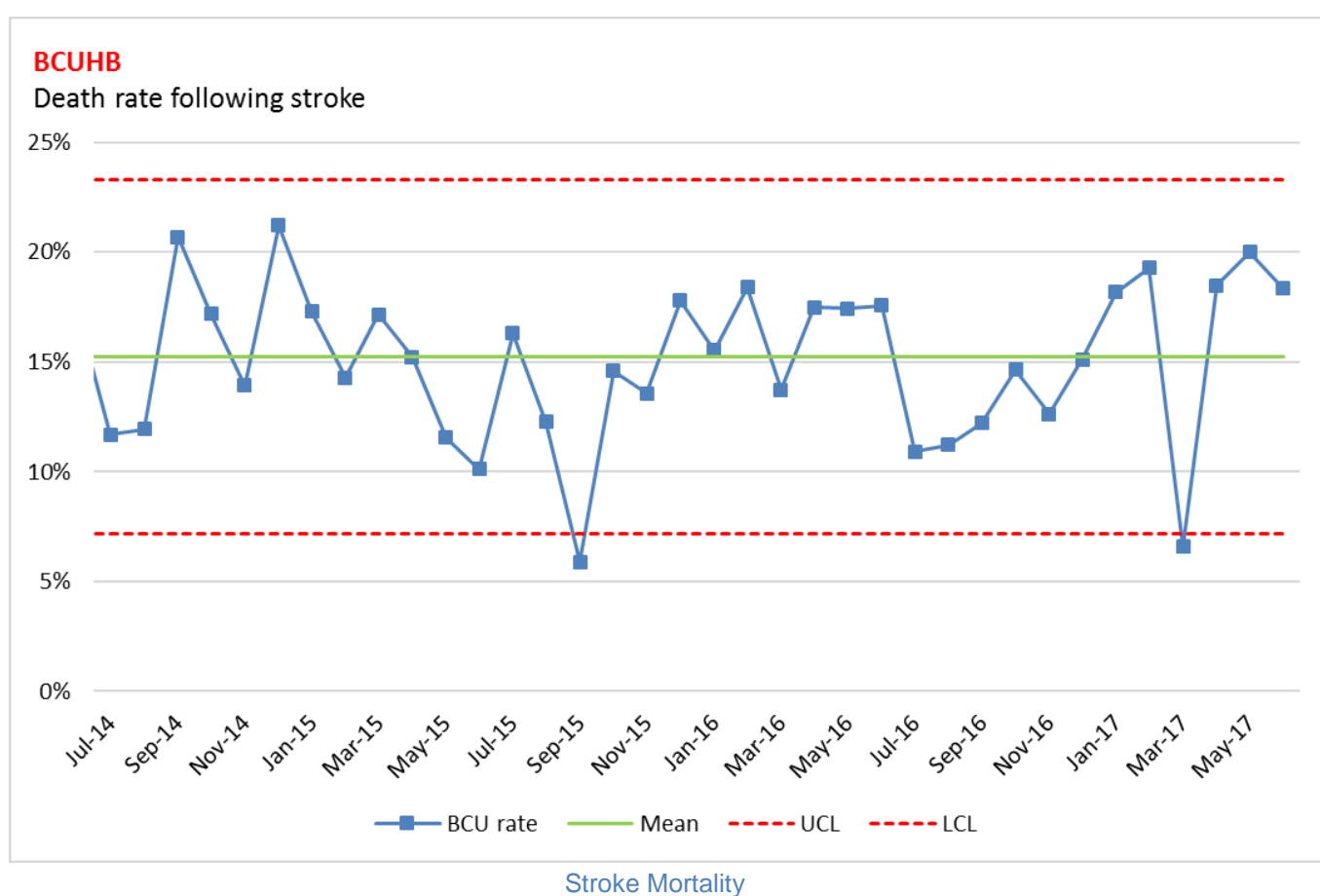Monthly Non-Elective Surgery Mortality (Control Chart)

Common medical emergencies

The following indicators present information on mortality following specific medical emergencies (stroke, hip fracture, and heart attack). This provides some information on the quality of care in each hospital. All three conditions are more prevalent in older people whose health may be more fragile so death cannot always be avoided.
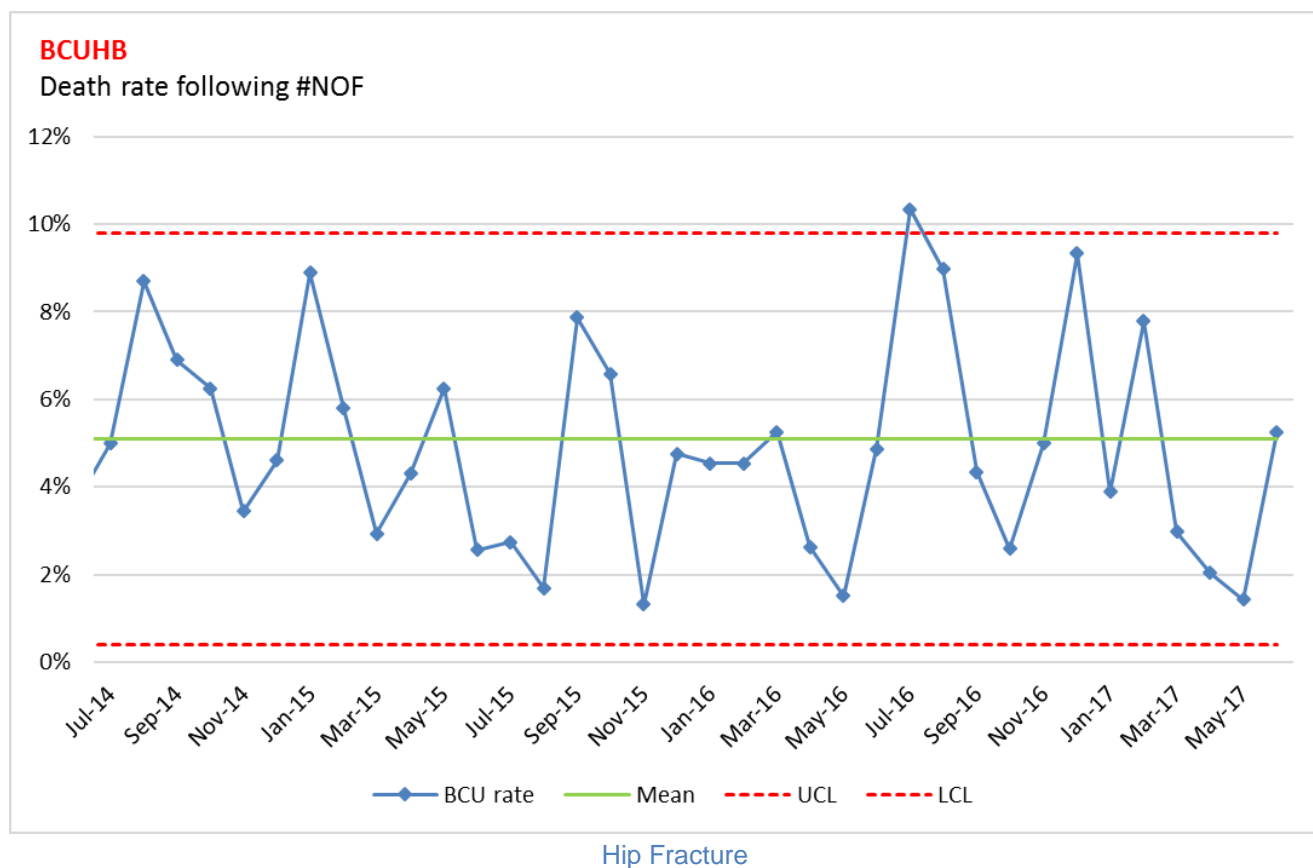
Stroke

The following chart shows the mortality within 30 days of an admission following a stroke. The latest data shows that 14.6% (1 in 7) patients died within 30 days of being admitted with a stroke, which is above the Welsh average at 12.8% (1 in 8).
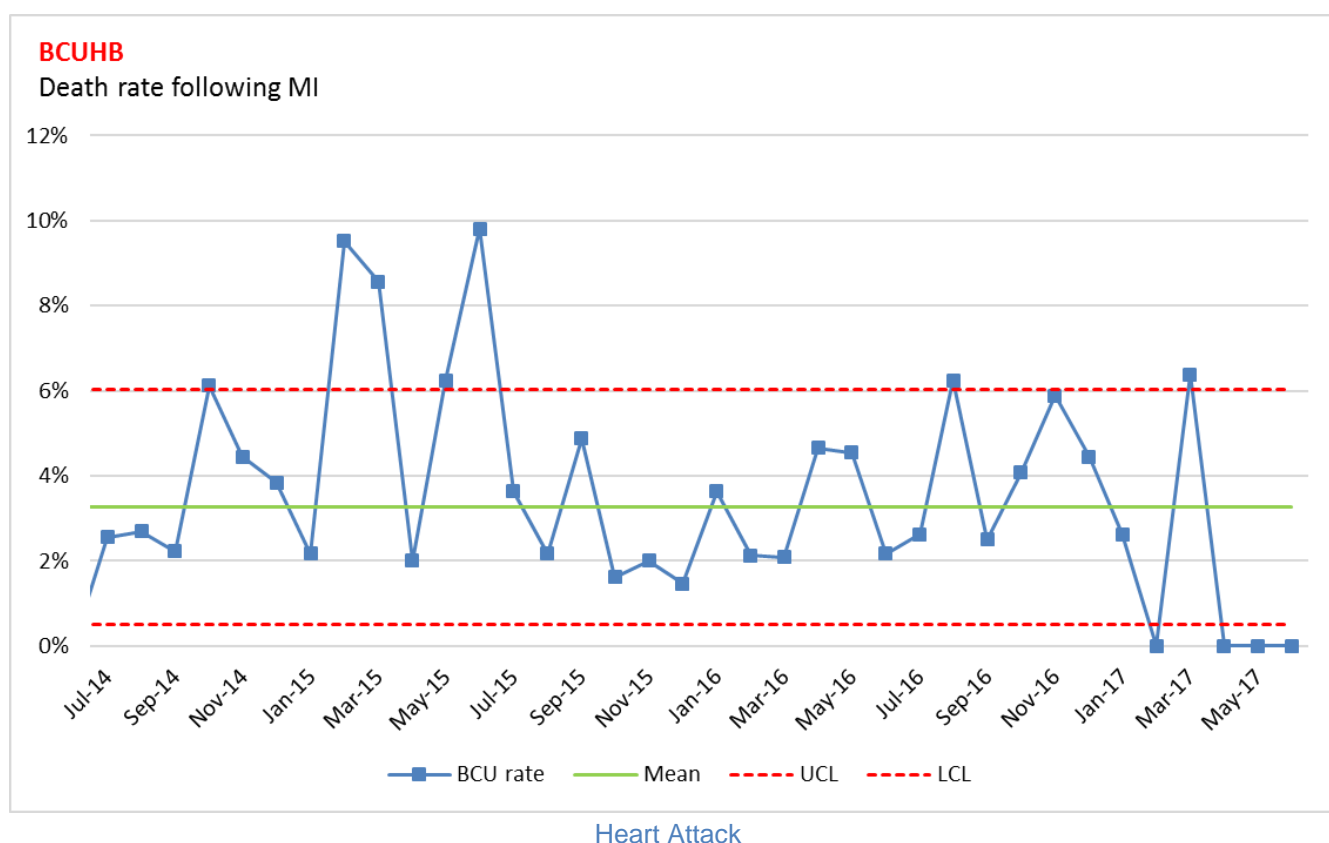

Stroke Mortality

Hip Fracture

The following chart shows the rolling 12 months mortality within 30 days of admission following a hip fracture (for those aged 65 and over). The latest data shows that 5.4% of patients died (1 in 19 patients), which is better than the Welsh average at 6.2% (1 in 16 patients).

BCUHB
Death rate following #NOF

Hip Fracture

Heart Attack

The following chart shows the rolling 12 month mortality within 30 days of admission with a heart attack for patients aged 35 to 74. The latest data (12 months to March 2017) shows that 3.5% of patients died (1 in 29), which is lower than the Welsh average of 4.0% (1 in 25 patients). The Health Board participate in the Myocardial Ischaemia National Audit Project (MINAP), and through this closely monitor the quality of care and delivery of best standards. Working with the Cardiac Network improvements are evident but work continues to see this progress further.

BCUHB
Death rate following MI

Heart Attack

Emergency Department Mortality

The following chart shows the number of deaths per 10,000 attendances for each major Emergency Department (A&E). It should be emphasised the figures reported are a crude mortality, and unlike deaths elsewhere in the hospital, no attempt is made to 'standardise'. As such there is no accommodation for factors such as age and severity of illness, factors known to impact on the risk of death.
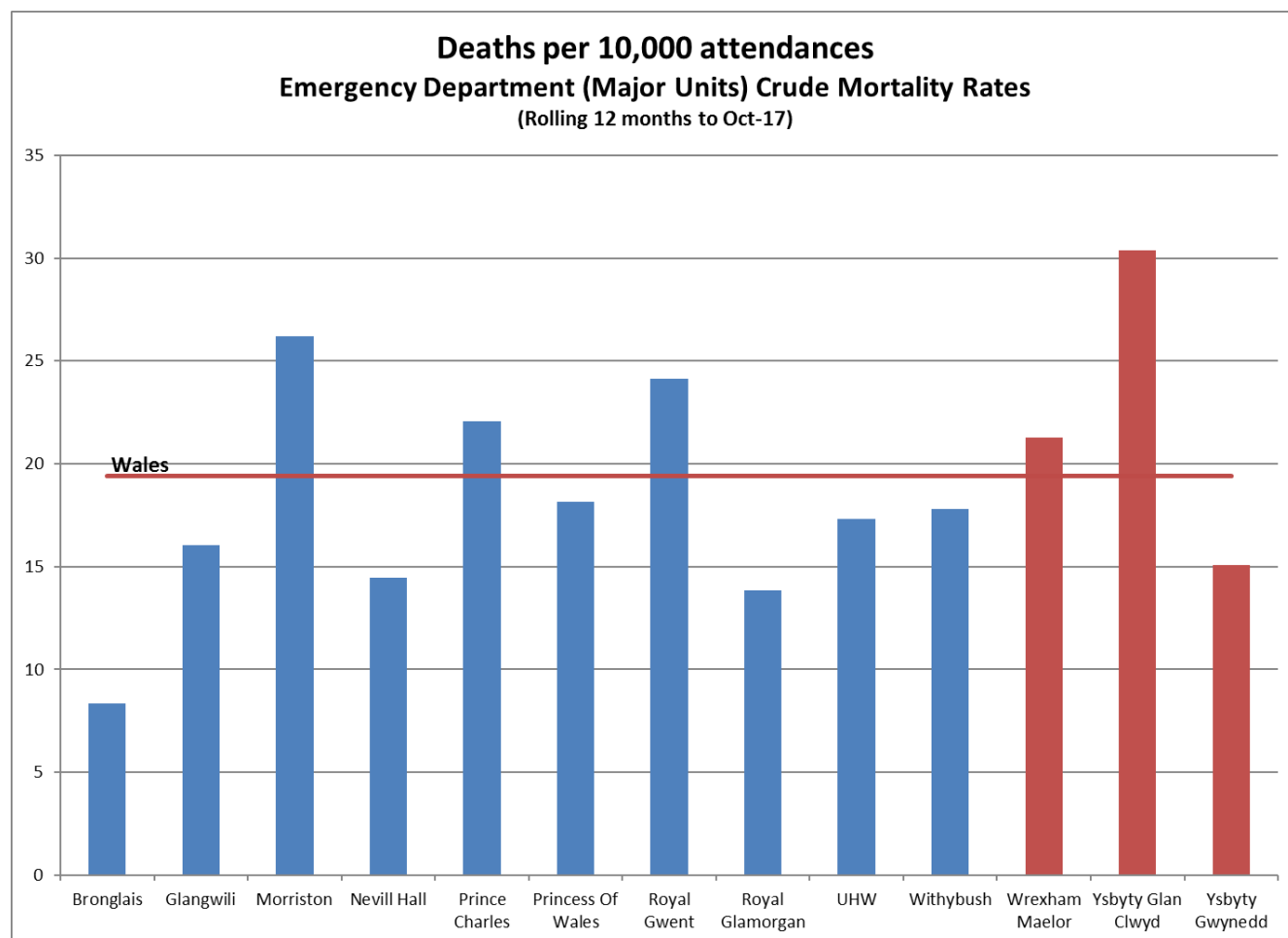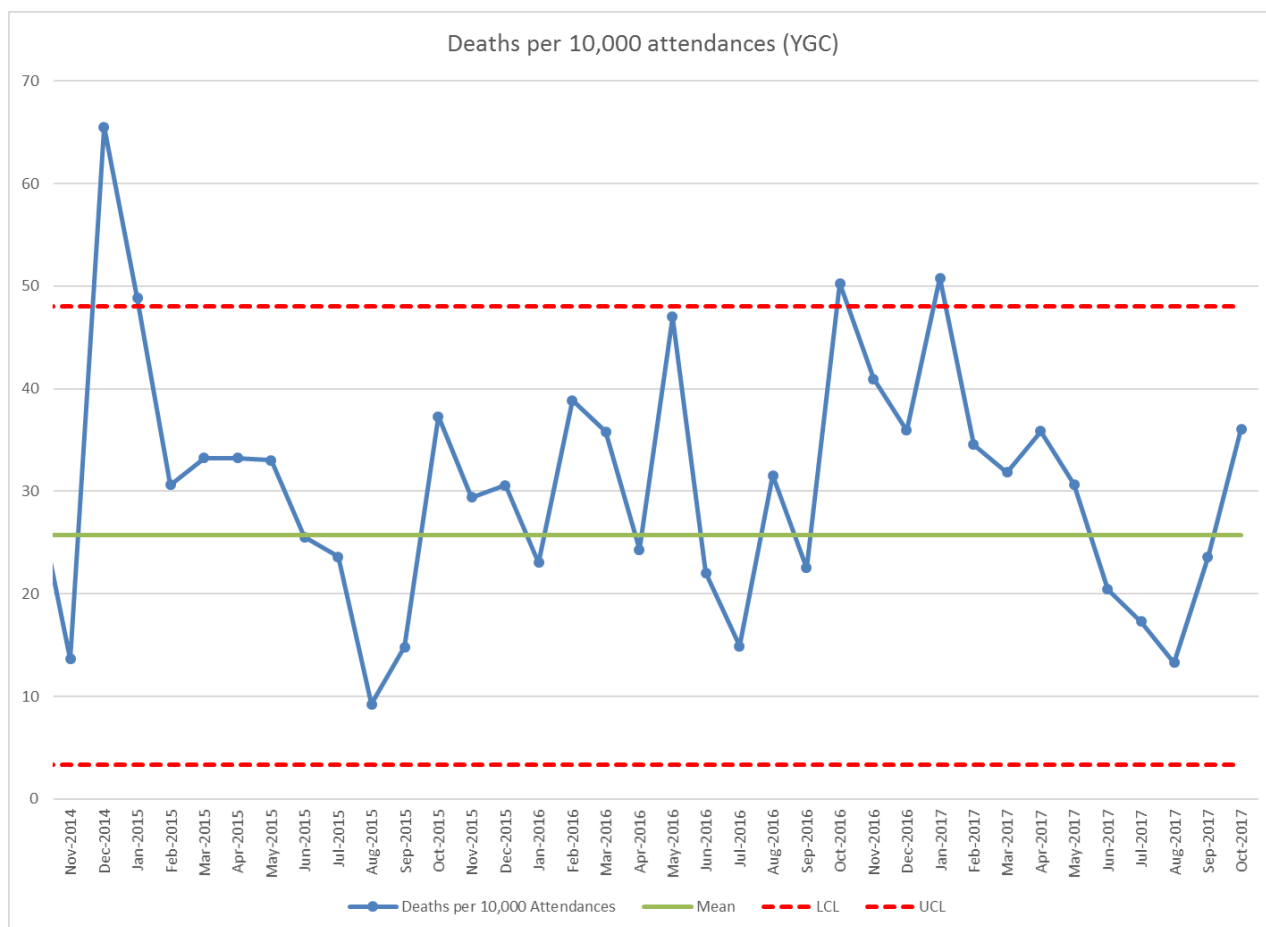

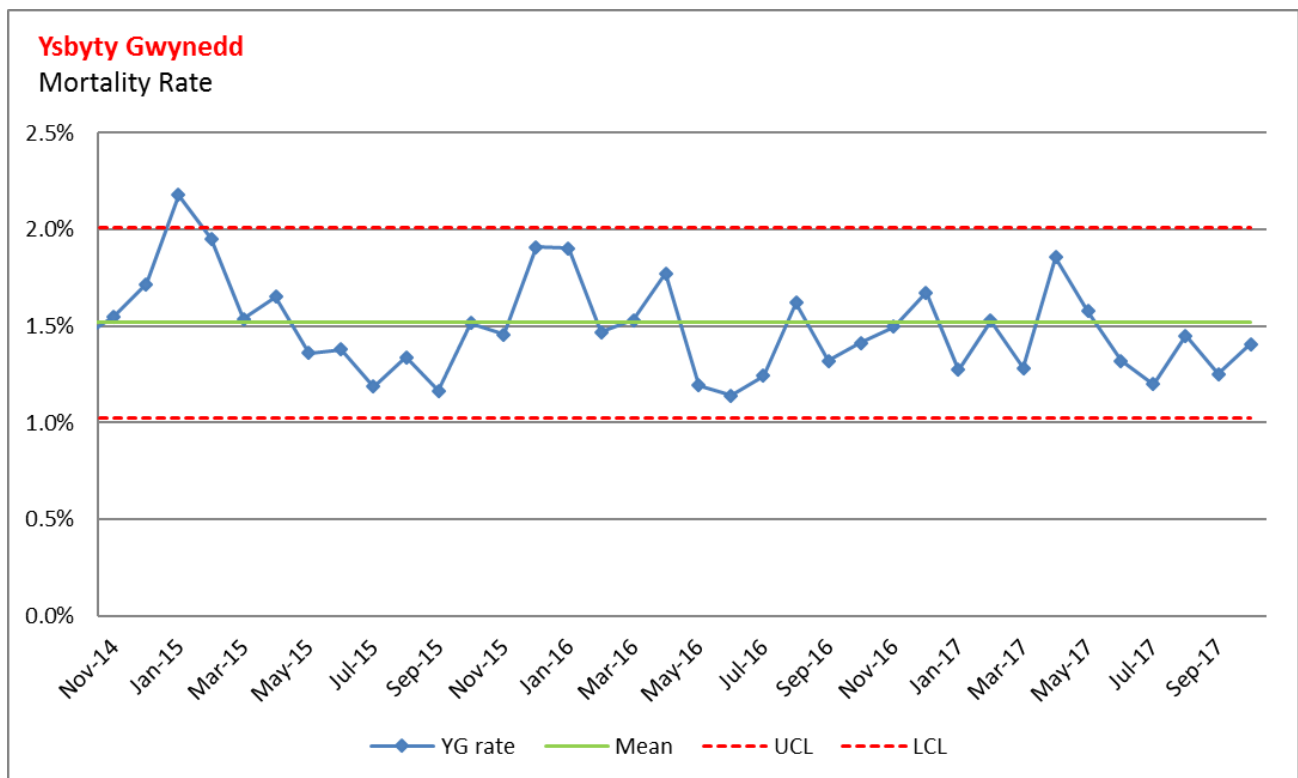Figure 1: Emergency Department Mortality

Data is for a rolling 12 months to July 2017. The 3 major departments in North Wales are highlighted in red. The Welsh average is 19.4 deaths per 10,000 attendances. The latest data shows the highest number of deaths at Ysbyty Glan Clwyd (30.4 deaths per 10,000 attendances), whilst the lowest are at Bronglais.

The following chart shows the Emergency Department mortality per 10,000 attendances for Ysbyty Glan Clwyd over the past three years.

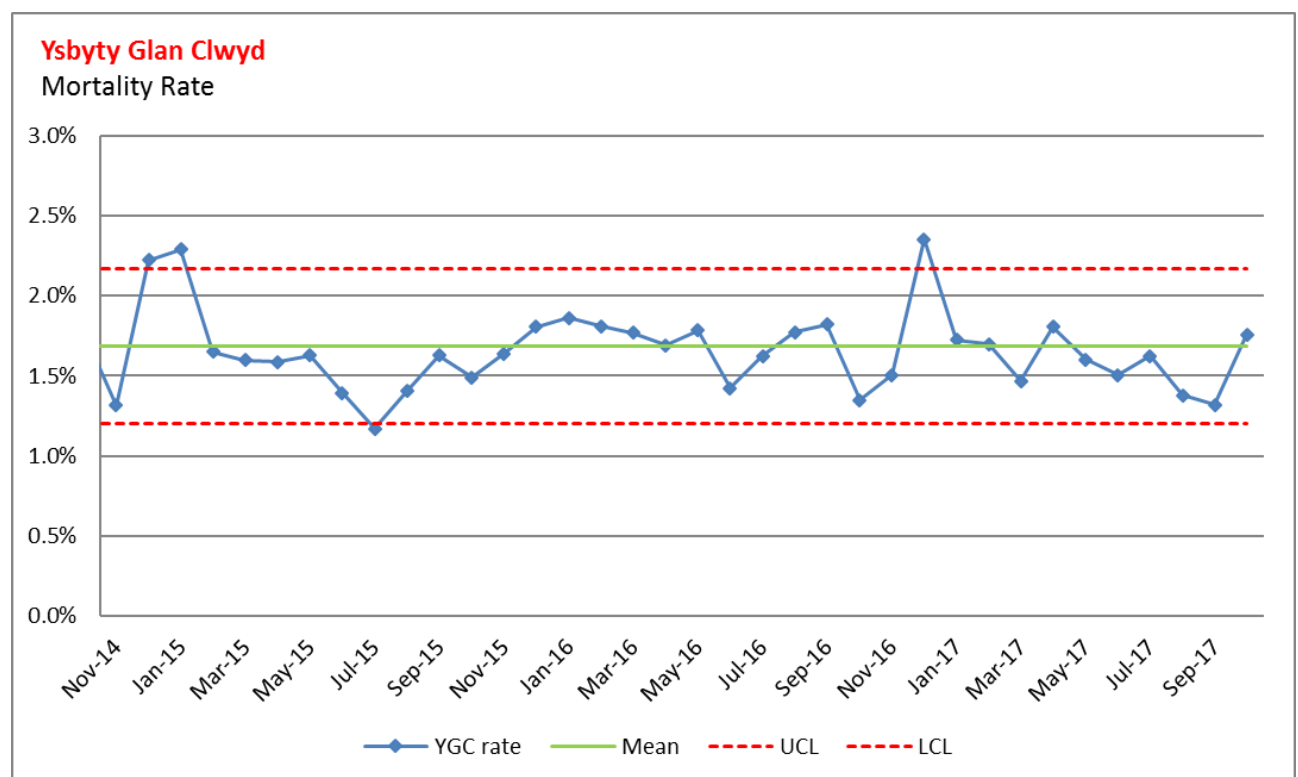Deaths per 10,000 attendances (YGC)

Mortality by District General Hospital (DGH)

BCUHB provides major DGH services at three hospitals, Ysbyty Gwynedd, Glan Clwyd and Wrexham Maelor. The following charts show the individual monthly crude mortality figures (as a control chart with mean, and upper and lower control limits) for the last three years. Increased mortality is to be expected in the winter months.
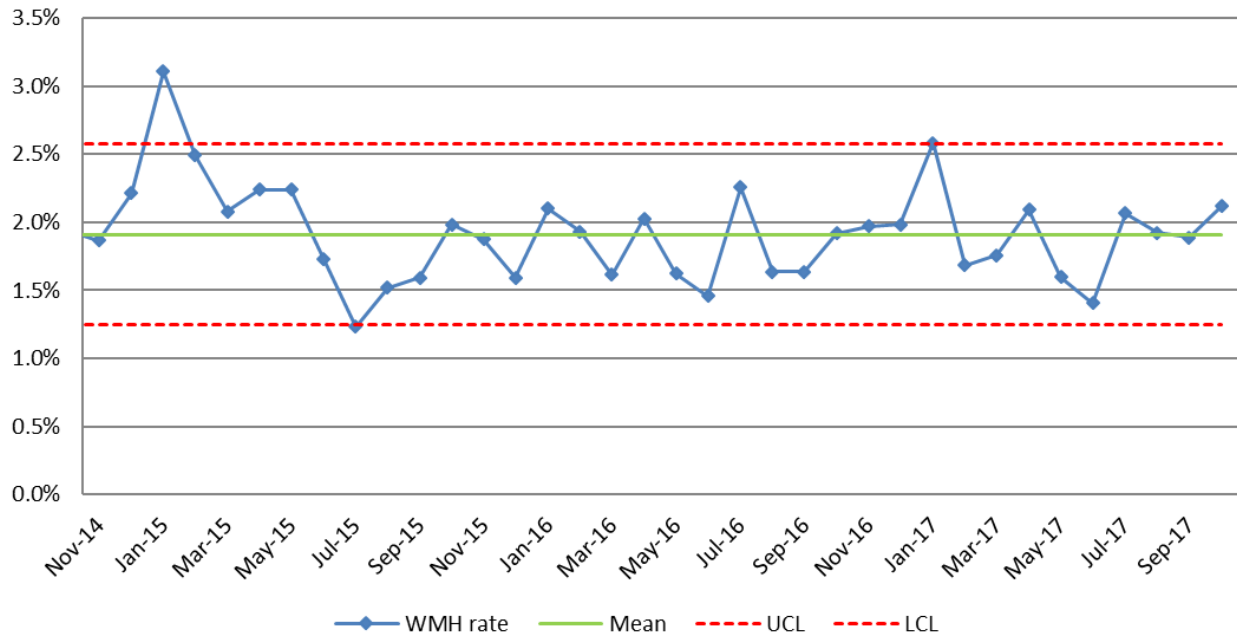
Ysbyty Gwynedd Crude Mortality (monthly)

Ysbyty Glan Clwyd Crude Mortality (Monthly)

Wrexham Maelor Hospital
Mortality Rate

Wrexham Maelor Crude Mortality (monthly)

Other Mortality Indicators

Detailed, longer term analysis provided by Public Health Wales of other mortality indicators that are measured in Wales is available on our [web site](http://www.wales.nhs.uk/sitesplus/861/page/68460)[2].

---

[2] http://www.wales.nhs.uk/sitesplus/861/page/68460