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

September 2018

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Contents

Publication notes

This document is the Health Board's 22nd 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 22nd publication, contains updated figures for measures up to March 2018. For measures that do not rely on clinical coding (e.g. crude mortality), 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. 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.

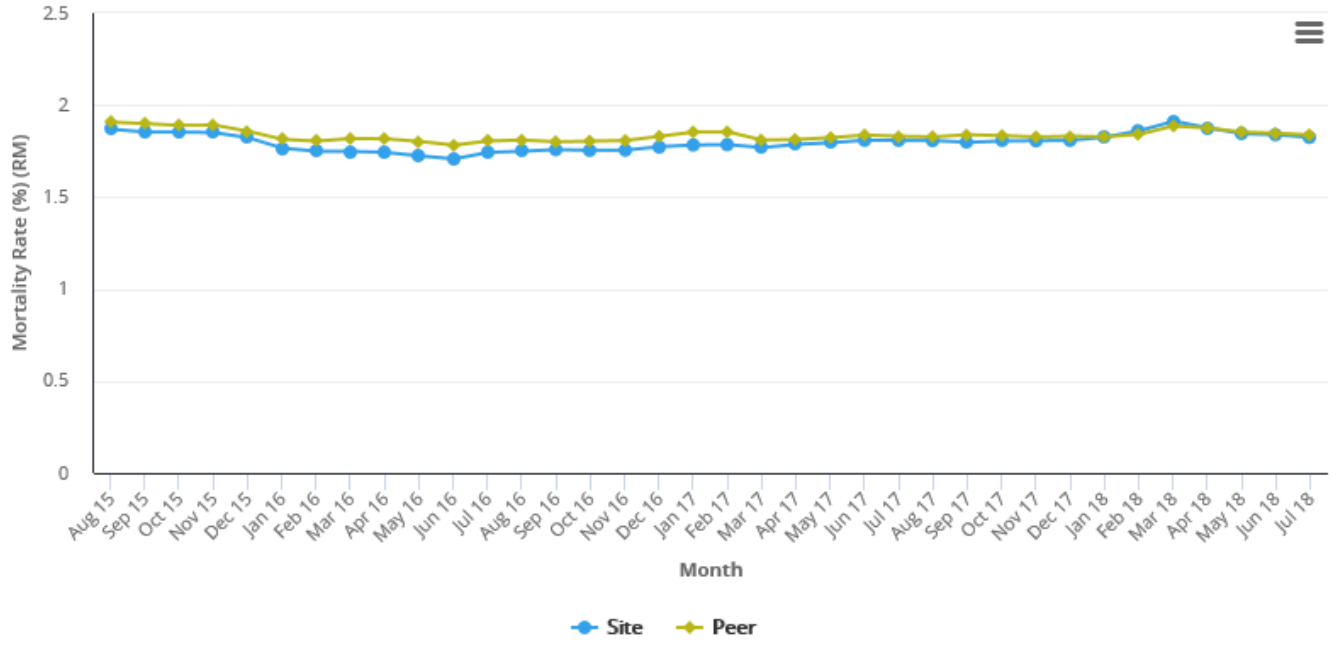
The national target is 95% completeness for any given month within 1 month of episode end date, and 98% for any rolling 12 months within 1 month of episode end date. The Health Board is not achieving the timeliness of these targets at present. Work is underway to recover this position. For the 12 month period covered by this report, the Health Board achieved 96.6% coding completeness.

What does this data tell us?

Health Board wide

For the 12 months to July 2018, the crude mortality rate was 1.82% (1 in 55 patients), which is on par with the Welsh average at 1.84% (1 in 54 patients).

The following chart shows the monthly rolling crude mortality for the Health Board.



BCUHB Crude Mortality (rolling 12month)

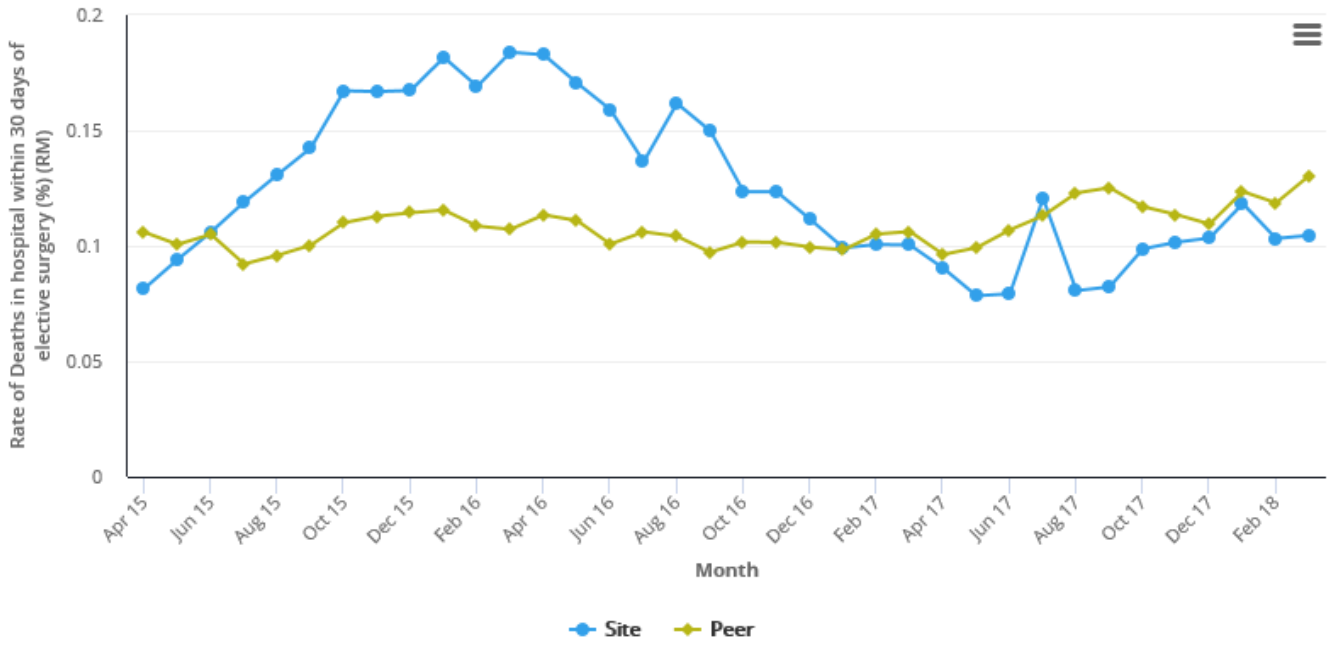
Mortality following Surgery

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.

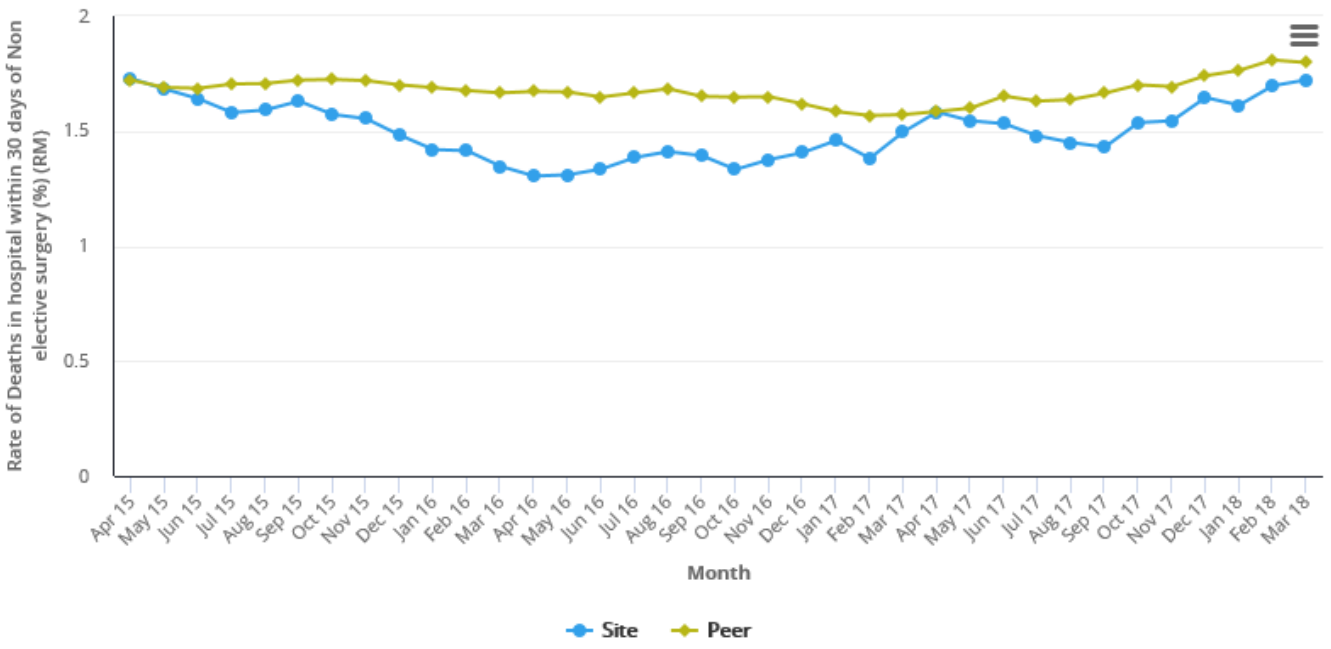
In both elective and non-elective surgery, the mortality rate within 30 days is very low. The 12 months to March 2018 shows a mortality rate of 0.10% for elective surgery (1 in 956 patients), which was better than the Welsh average of 0.13% (1 in 766 patients). For non-elective (emergency) surgery the rate was 1.72% (1 in 58 patients), which was better than the Welsh average of 1.80% (1 in 56 patients).

All cases are reviewed as part of the health board's mortality review process.

The following charts show the monthly elective and non-elective mortality rates.



Elective Surgery Mortality (rolling 12 month)



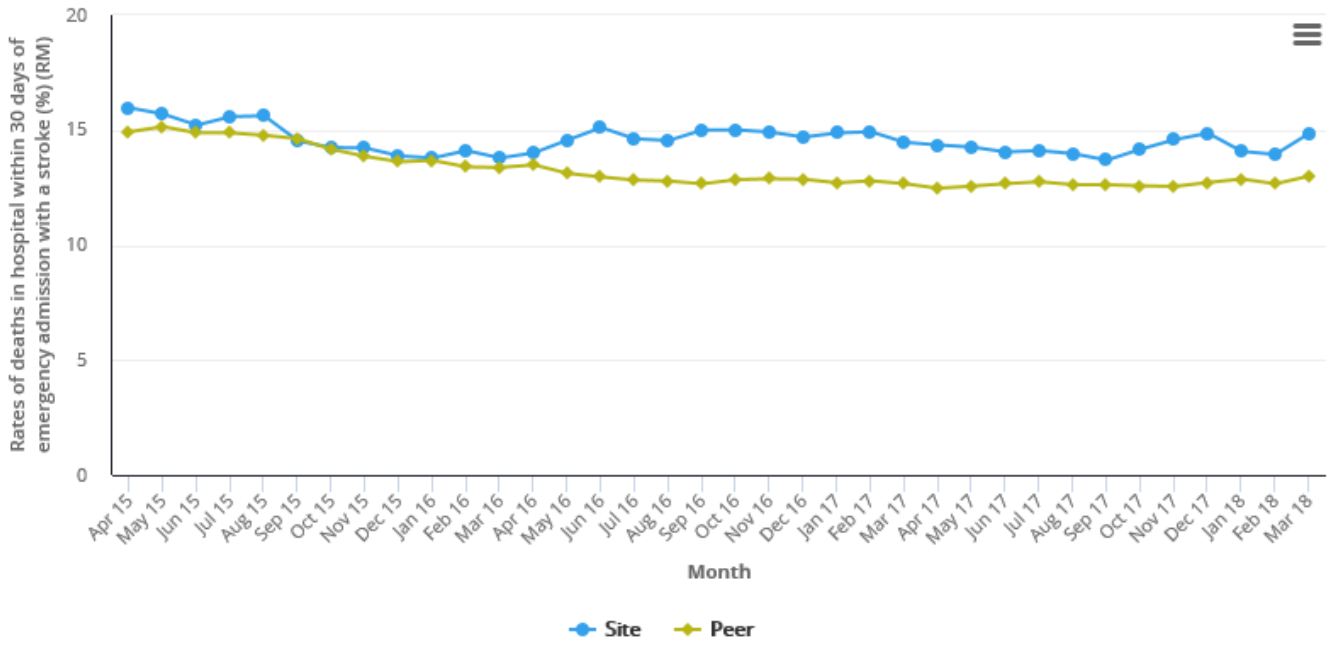
Non-Elective Surgery Mortality (rolling 12 month)

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

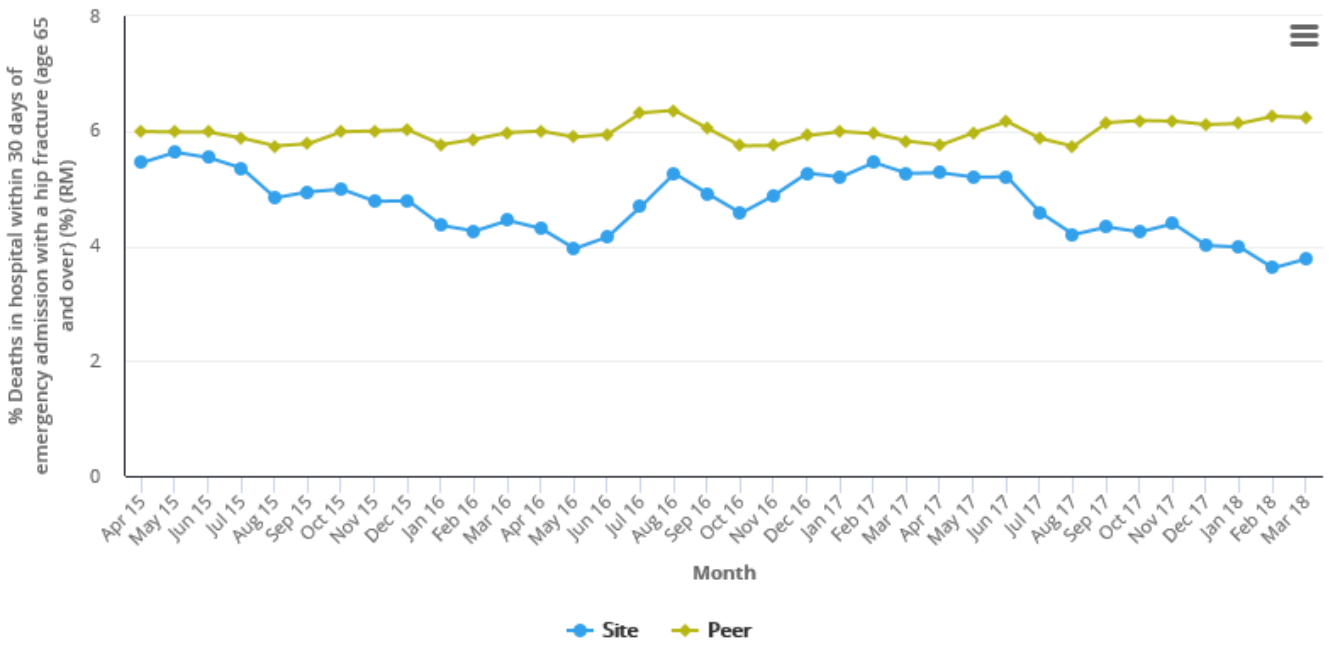
The following chart shows the mortality within 30 days of an admission following a stroke. The latest data shows that 14.9% (1 in 7) patients died within 30 days of being admitted with a stroke, which is above the Welsh average at 13.0% (1 in 8). Flagged, as an area for improvement, actions in progress have yet to impact on crude mortality.



Stroke Mortality (rolling 12 month)

Hip Fracture

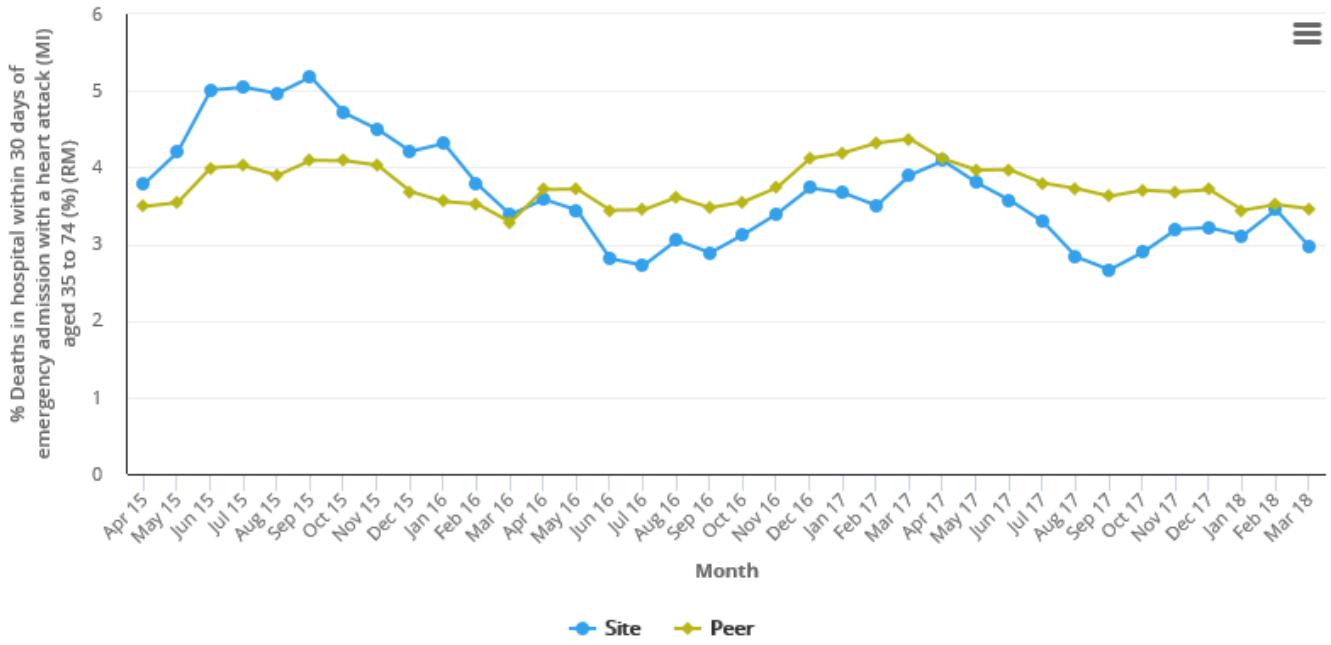
The following chart shows the rolling 12 months mortality within 30 days of admission following a hip fracture (for those aged 65 and over). The latest data shows that 3.8% of patients died (1 in 26 patients), which is better than the Welsh average at 6.2% (1 in 16 patients).



Hip Fracture (rolling 12 month)

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 shows that 3.0% of patients died (1 in 34), which is lower than the Welsh average of 3.5% (1 in 29 patients). The Health Board participates in the Myocardial Ischaemia National Audit Project (MINAP), and through this closely monitors the quality of care and delivery of best standards.



Heart Attack (rolling 12 month)

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.

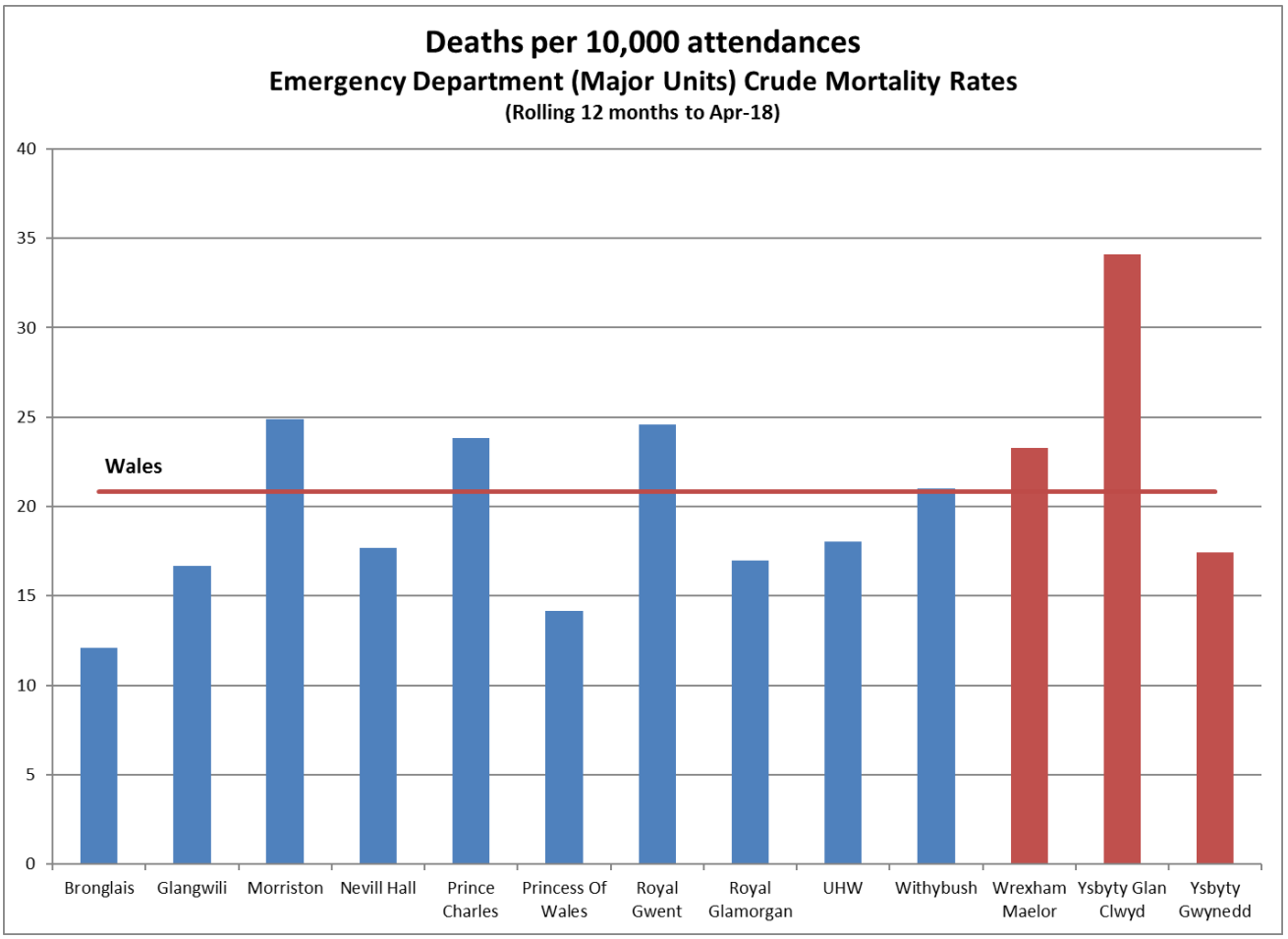
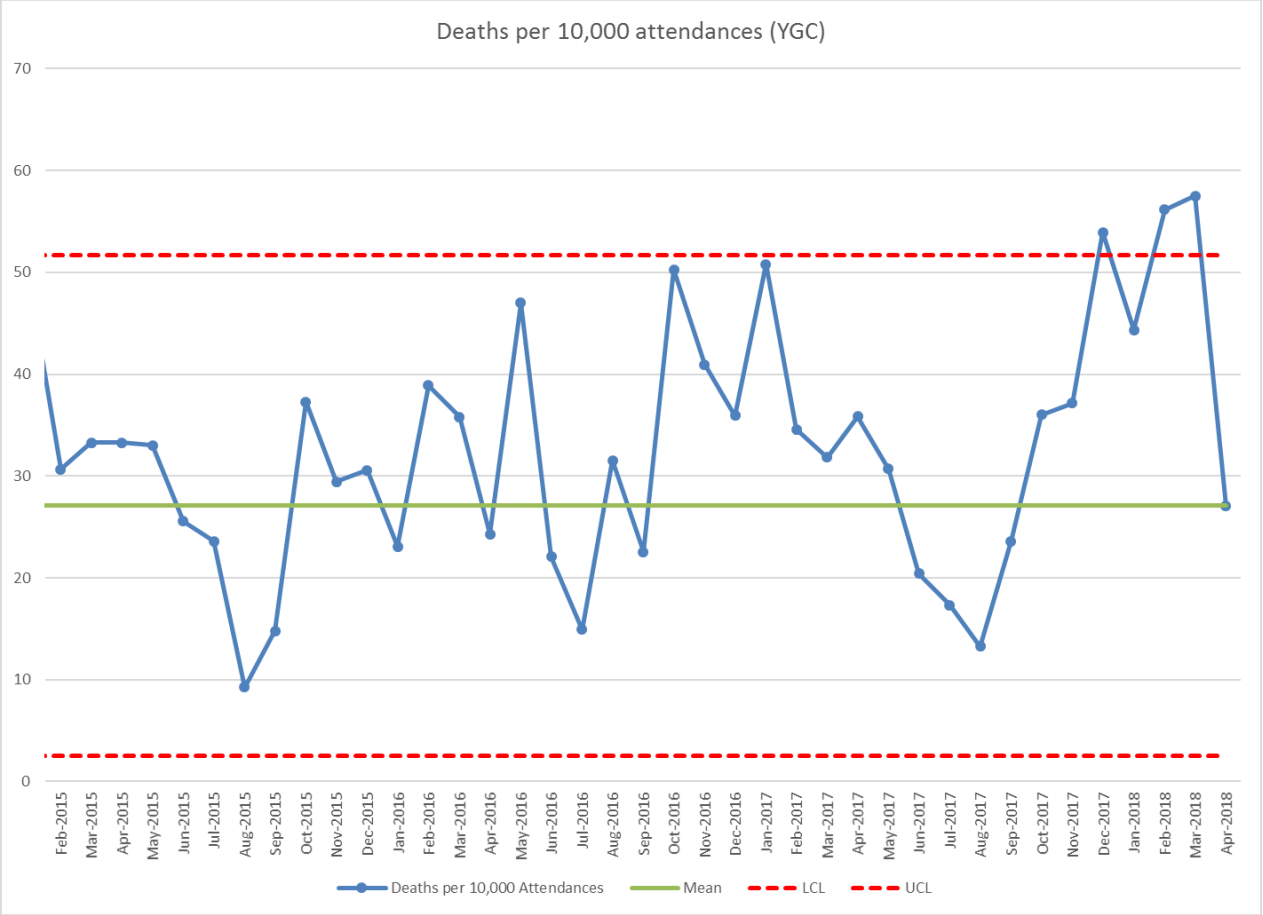


Figure 1: Emergency Department Mortality

The 3 major departments in North Wales are highlighted in red. The Welsh average is 20.9 deaths per 10,000 attendances. The latest data shows the highest number of deaths at Ysbyty Glan Clwyd (34.1 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.



For ED mortality at YGC, progress continues with greater clarity on relevant factors. Work is progressing to address those amenable to improvement, with the caveat, mortality ultimately may still remain higher when all such concerns are addressed.

Work to date has concluded:

There is no single factor to explains this

Flow management plays a part

Glan Clwyd does not move patients to a ward based area such as medical assessment units as quickly as other hospitals. As a consequence deaths which would normally occur in the main hospital, occur and are counted instead against the Emergency Department. The combined Emergency Department and hospital mortality for Glan Clwyd is below the all Wales figure.

Audit and routine mortality review and analysis have failed to identify any areas of poor practice or recurrent care issues

This is consistent with findings from previous clinical audits. Moreover, it is supported by consultant led routine review of all deaths, conducted in line with the rest of BCU.

Population factors

Age

The population attending YGC have an older age profile. Adjusting for age, the rate falls to 22 per 10,000 attendances. While this remains above the Welsh average, it is not significantly higher than 7 of the 12 other Welsh hospitals.

While age standardised rates for people aged 85+ and 65+ show YGC to be in line with the rest of Wales. However for those aged 64 years and below it is almost twice as high as the rest of Wales (11.2 *v* 6.1/10,000) and a higher mortality in those < 64 may be playing a part in the raised death rate.

Disease profiles- Cardiovascular & Coronary Artery Disease

There is a higher rate of cardiovascular disease mortality within the catchment area (particularly Denbighshire). This reflects disease patterns within some deprived communities leading to a high acuity patient group. This may in part explain the increased rate in the 50-64 year olds.

Acuity

YGC has the highest proportion of attendances to the Emergency Department (ED) that arrive by ambulance – 35.8%. This is significantly higher than Wales (25.87%). A higher proportion dying in ED, and a greater percentage of presentations requiring admission (30 v a Welsh average of 25%), with a lower in-patient mortality (fifth lowest in Wales), in combination supports a view, the population served is 'sicker'.

Very early deaths

Approximately 30% of deaths occur within an hour of arrival. A significant number present having had an out of hospital cardiac arrest. Though 21% of all deaths, 84% of those under 65 had collapse or cardiac arrest as the principle diagnosis recorded. This in part may explain the observed increased mortality in this age group.

"Dead on Arrival"

There is variation in the way DoA (Dead on Arrival) is classified across BCU and more widely (this has been passed to the Royal College of Emergency Medicine). As a consequence, data for early deaths are not comparable across Wales.

Deprivation

This has not been shown to have a significant impact on ED mortality at YGC.

Geography

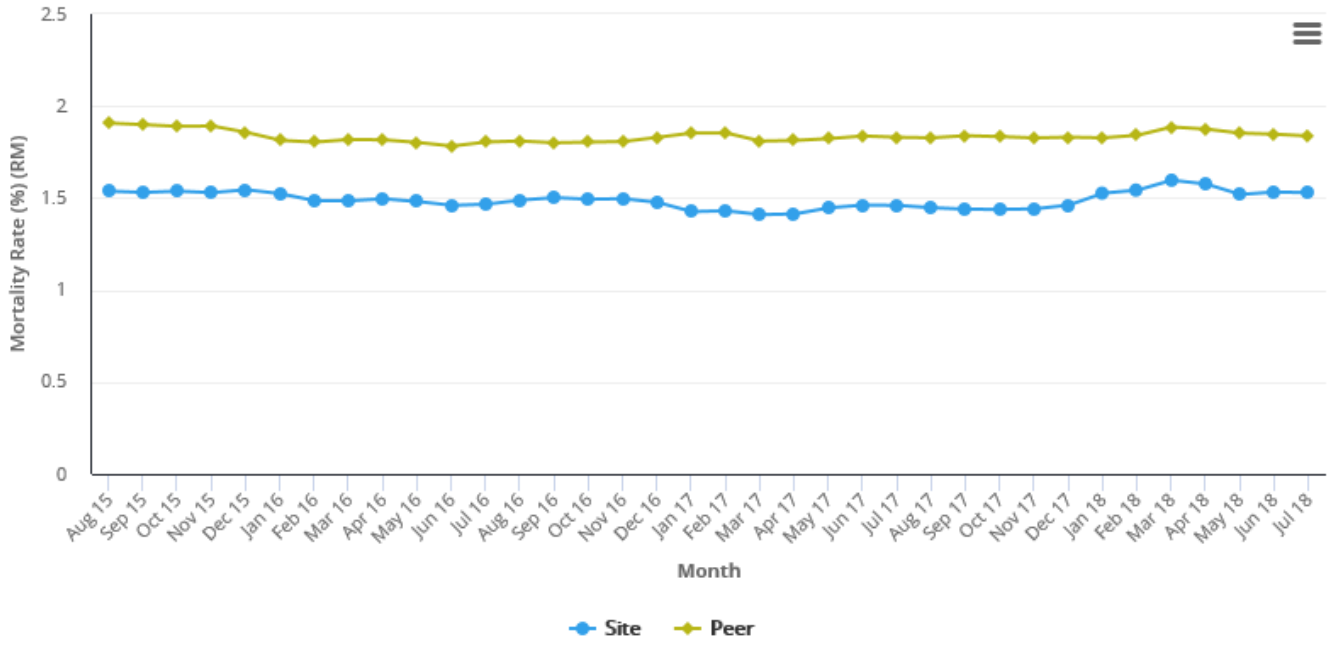
A Large geographical catchment area for ambulances puts pressure on services and could impact on the time it takes to be conveyed. Although this was not seen in the patients who had arrested, it has been noted in local audit.

Care at the end of Life

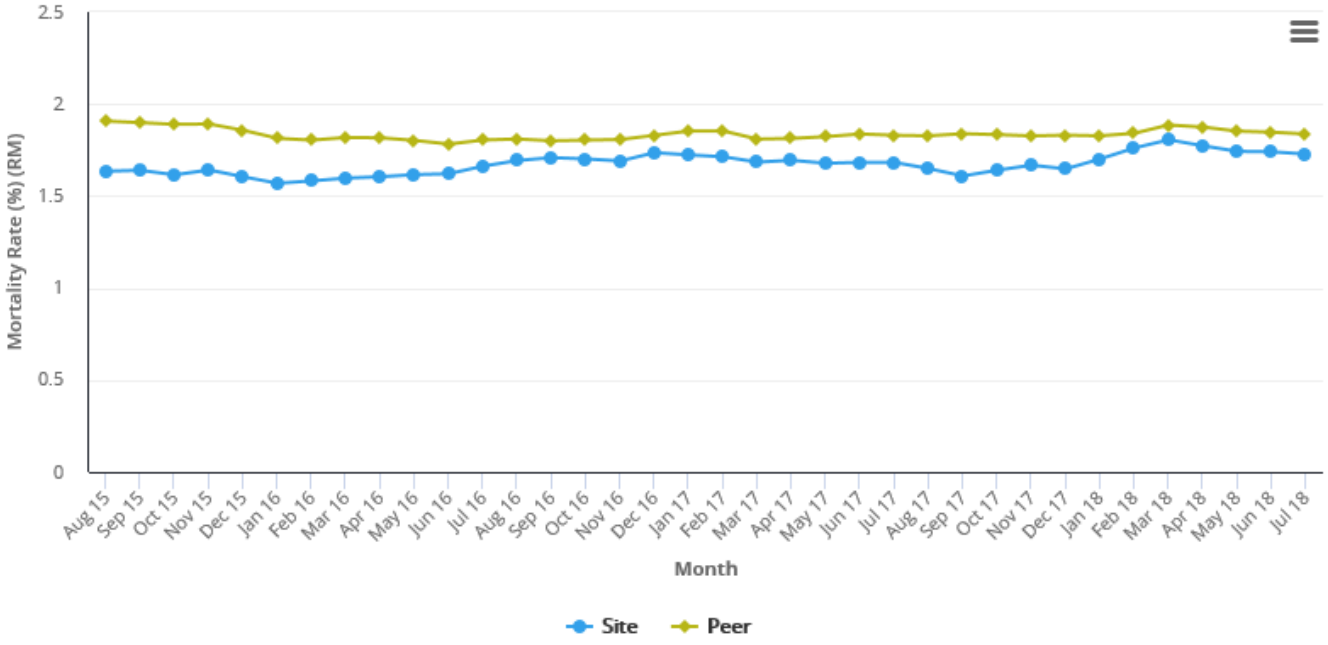
A further group are those sent in from Nursing / Care Homes at end of life. Work is progressing to improve end of life planning and care in the community

Mortality by District General Hospital (DGH)

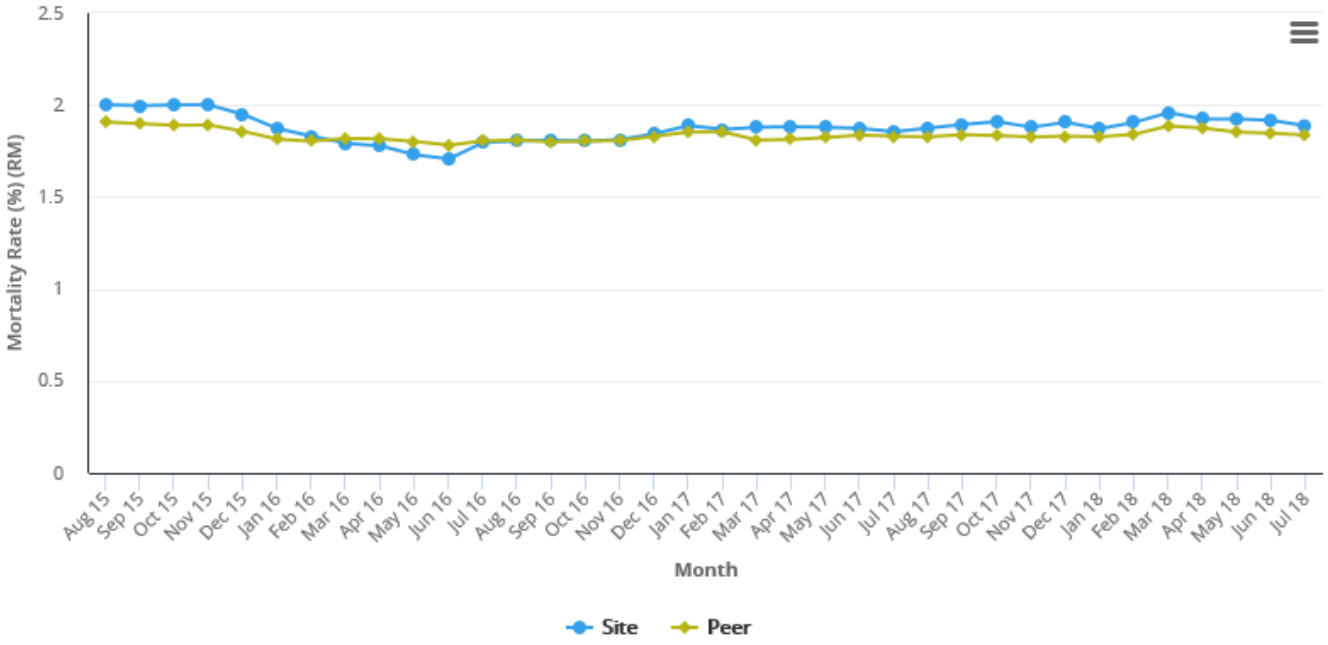
BCUHB provides major DGH services at three hospitals, Ysbyty Gwynedd, Glan Clwyd and Wrexham Maelor. The following charts show the individual monthly crude mortality figures for the last three years. Increased mortality is to be expected in the winter months.



Ysbyty Gwynedd Crude Mortality (rolling 12 month)



Ysbyty Glan Clwyd Crude Mortality (rolling 12 month)



Wrexham Maelor Crude Mortality (rolling 12 month)

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[2].

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