

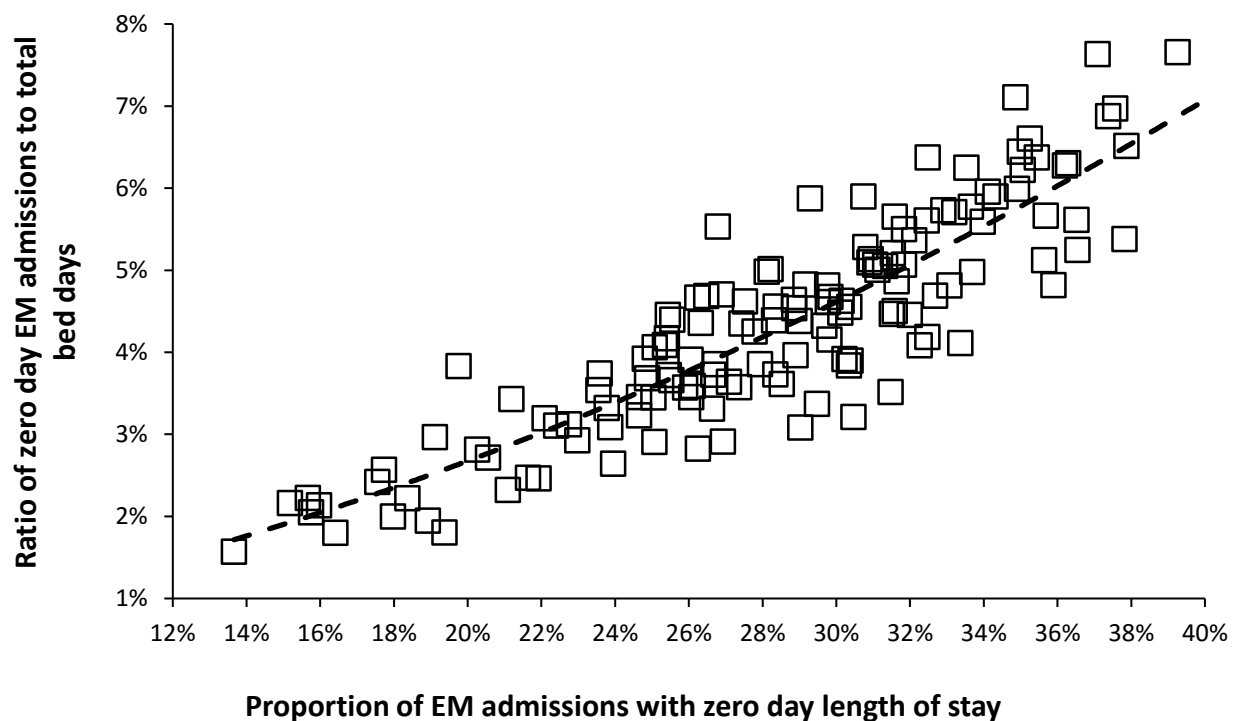
Hospital deaths and length of stay

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All of us would like to think that whatever tools are used to evaluate hospital deaths are soundly based and without obvious flaws. Whenever I tell clinicians that neither Hospital Standardised Mortality Ratio (HSMR) nor Summary Hospital-level Mortality Indicator (SHMI) contain any adjustment for length of stay, they respond with 'that is stupid, length of stay is a clear indicator of patient acuity/frailty'. Most zero day stay emergency admissions have been 'admitted' to assessment units. My own analysis reveals that zero day stay emergency admissions have a much lower risk of death, and if the patient happens to die it is highly likely this was not due to any fault of the hospital.

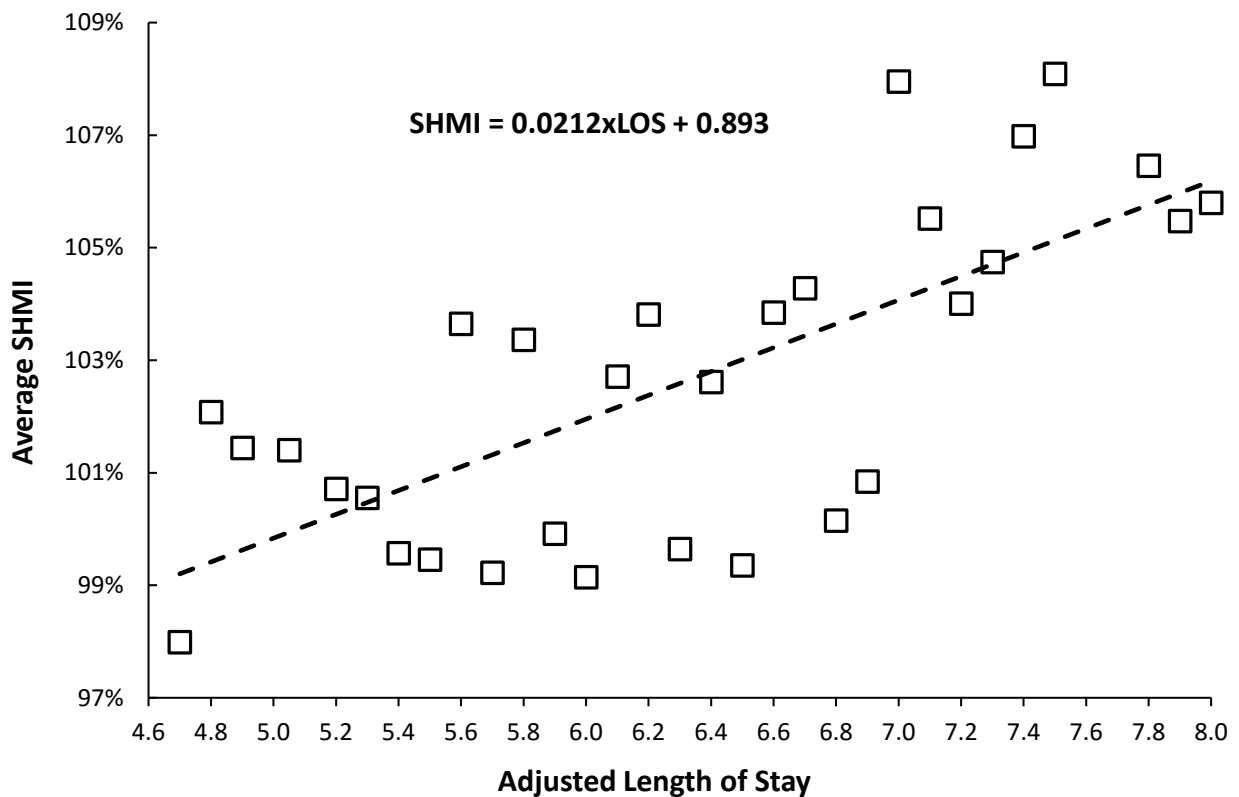
Figure 1: Zero day stay emergency admissions as a proportion of total emergency admissions or total bed days in English NHS hospitals, 2014/15



Footnote: Both SHMI, and HES data (zero day stay and LOS) are from the Health and Social Care Information Centre (HSCIC) website.

Indeed, the huge variation in the number of zero stay emergency admissions between hospitals (see Figure 1) suggests that some hospitals can manipulate their HSMR/SHMI score via dilution with zero day stay 'emergency admissions'. To determine if this is possible hospital average length of stay (LOS) in 2014/15 was adjusted to remove the effect of zero day stay emergency admissions and this was then matched with the 2014/15 SHMI score for each hospital. Data is an average based on 0.1 day increments in average LOS. The result of this analysis is shown in Figure 2 where it can be seen that average SHMI score does indeed increase with average LOS such that hospitals with the highest (zero day free) LOS have an average SHMI score which is 5% above average, while those with lowest average LOS are around 1% below average.

Figure 2: Relationship between SHMI and zero day free length of stay in English hospitals, average for 2014/15



Footnote: Adjusted LOS is spell-based

A final comment regarding the hospital average LOS in Figure 2 is required. Figure 2 gives the (real) average overnight stay LOS. Hence while it may seem that no NHS hospital has an average LOS of 8 days, it is a sad fact that large numbers of zero day stay 'admissions' which have appeared since 2002 are clouding the issue. Hence the removal of zero day stay admissions typically increases the hospital average LOS by 42% (range 20% to 84%). Hence my assertion that real average LOS is probably not reducing to the extent that everyone believes (Jones 2009, 2010, 2013, 2015a,b).

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Having spent over 25 years engaged in the analysis NHS data I have observed an endless array of supposed bullet-proof tools foisted on the NHS in the name of efficiency. Organisations are then kicked and cajoled to improve their 'performance' based on these supposed best-in-class tools. Non-executive Directors then react to supposed deviations from 'best performance' and managers scurry around trying to find causes, when the real cause so often lies in the seriously flawed tools used to uncover supposed instances of poor performance.

Of course this is not an excuse to do nothing or avoid well placed criticism; however, my initial reaction is to look for seemingly often serious flaws in the tool. As they say 'cest la vie' no one bothers about reality these days do they?

References

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