

Trends in available beds per death in England

Rodney P Jones, PhD (ACMA, CGMA)
Statistical Advisor

Healthcare Analysis & Forecasting
hcaf_rod@yahoo.co.uk

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Successful calculation of acute beds is a critical component of healthcare capacity delivery. Since 2010 this author has been highlighting the fact that end-of-life represents the most resource intensive part of individual health demand (Jones 2010), and that this inescapable fact is not part of acute capacity modelling. Standardized mortality rates are a distraction from the fact that it is the absolute number of persons dying that drives this type of demand (Jones 2017).

While the prevalence of poor health starts to rise about 5 years prior to death (Stenholm et al 2015), since the 1980's it has been known that the bulk of acute and community demand, including prescription costs, occurs in the last year of a person's life (Henderson et al 1990, Hanlon et al 1998, Busse et al 2002, Dixon et al 2004, Stearns and Norton 2004, Payne et al 2007, Kalbarczyk-Steclik and Nicinska 2015, Cubanski et al 2016, Moore et al 2017), and especially in the last six months (Jones et al 2016, Thorn et al 2016, Aaltonen et al 2017).

Around 45% and 55% of a person's lifetime admissions and bed occupancy respectively occurs in the last year of life (Hanlon et al 1998).

Given the concentration of acute intervention toward the last year of life the ratio of **occupied** beds per death has been noted to remain remarkably constant over long periods of time (Jones 2011a) and has been suggested as a good measure of the effectiveness of schemes to move care out of acute hospitals (Jones 2011b,d).

Regarding the provision of beds per death in England Fig. 1 demonstrates that available beds per death have decreased dramatically since 1987/88, despite the absolute number of deaths decreasing through to 2011 (Jones 2017b). After 2011 there has been a sustained and unexplained increase in deaths leading to a cessation of improvements in lifespan (Fransham and Dorling 2017).

The pause in the decline in beds during the 2000's largely arose due to the Wanless Report (Department of Health 2004) and the Hospital Beds Inquiry (Department of Health 2001),

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whose conclusions have been forgotten in a lemming-like dash to throw the NHS over the precipice of operational failure.

The troughs in beds per 1000 deaths occur in the years when deaths show unexplained increases (Jones 2018a-c).

At 264 beds per 1,000 deaths in 2017/18, England ranks 65th out of 185 countries with bed statistics, and now has a level of bed provision expected from developing countries such as Guyana, Rwanda, Botswana, Iraq, Paraguay and Costa Rica (Jones 2018d).

Evidence that the UK now has too few beds comes from the fact that acute (midnight) bed occupancy in England (excluding pediatric and specialist mainly elective hospitals) hit an average of 95.8% (median 96.6%, upper quartile 99.0%) on Wednesday the 3rd of January 2018 (NHS England 2018b) – despite hospitals being instructed to cancel elective surgery (RCS 2018).

Figure 1: Trend in available beds per death in English NHS hospitals



Footnote: Data on available beds covers general and acute, mental health, learning disability but excludes maternity, it includes overnight and day only beds and is from NHS England (2018a) while deaths are from the Office for National Statistics (2018a,b). Deaths in England are by financial year from 2000/01 onward. Earlier years are from calendar year totals.

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According to the European Health Information Gateway (2018) acute hospital bed occupancy in 2014 and 2015 for 31 European countries had a median value of 75% (interquartile range 69% to 83%).

A study of acute hospital bed occupancy showed that whole hospital occupancy of around 75% is required for large hospitals with around 1,000 beds (Jones 2011c). This low annual average occupancy is required to deliver delay free access throughout the whole year (Beeknoo and Jones 2016, Jones 2017c,d). No one is suggesting that these beds be staffed, and staffing must be flexed to follow occupancy (Beeknoo and Jones 2016, Jones 2011e).

A study of trends in end-of-life care in England and Wales has noted that between 2014 and 2040 the number of deaths per year is expected to increase by 27%. The same study concluded that end-of-life care in care homes and the community needs to double by 2040, and if this does not occur then hospital deaths will start rising by 2023 (Bone et al 2017).

Clearly, bed modelling in the UK is coming up with the wrong answers (Jones 2016, Jones 2017a, 2018c), and in the absence of any visible plans to increase the number of care homes it is suspected that current plans to increase community care, no matter how admirable or desirable, will fall short of the required impact.

In conclusion, deaths in England are set to continuously increase over the next 35 years, increasing by 27% at 2040. Unless community and nursing home provision is significantly expanded this will place increasing pressure on acute services. Large numbers of acute beds are required simply to restore the NHS to an adequate occupancy margin for efficient and safe care. While the STPs are bending over backward to attempt to bridge the gap, government policy needs a dramatic change to rescue the NHS from yet another policy-induced fiasco. The Lord Darzi review of Health and Care is long overdue (Institute for Public Policy Research 2018).

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