

Trends in clinical workload per death

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Key Points

- The last year of life marks a period of rapidly escalating clinical workload.
- The absolute number of deaths rather than age-standardized mortality is therefore a good proxy for end-of-life workload
- The number of NHS clinical staff divided by the number of deaths in England gives a good measure of staff workload
- Number of clinical staff appear to lag one-year behind rises in number of deaths
- The ratio of staff per death shows considerable fluctuation over time

Workforce planning 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).

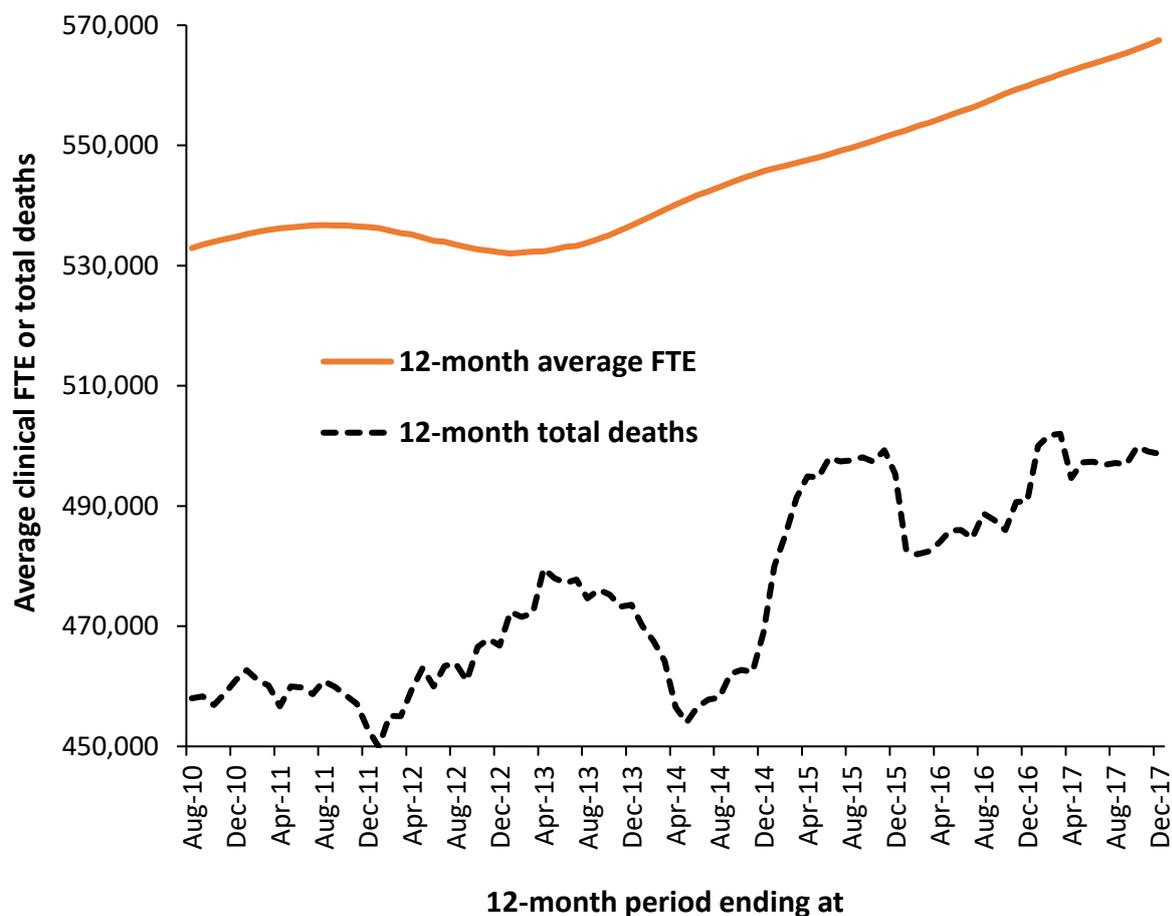
While the prevalence of poor health starts to rise about 5 years prior to death (Stenholm et al 2015), since the 1980's it has been known that the bulk of acute and community demand, including prescription costs, occurs in the last year of a person's life (Henderson et al 1990, Hanlon et al 1998, Busse et al 2002, 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).

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).

While it is very difficult to know exactly who is in the last year of their life, frailty and loss of functional ability appear to be excellent predictors of both rising healthcare costs and nearness to death (Kalbarczyk-Steclik and Nicinska 2015, Hajek et al 2017, Torisson et al 2017). In those who die, anorexia, fatigue, pain and dyspnea are the most prevalent symptoms in the last year of life (Singer et al 2015).

Figure 1: Rolling 12-month average clinical staff (WTE) employed in acute and community care in England and deaths in England over the same period

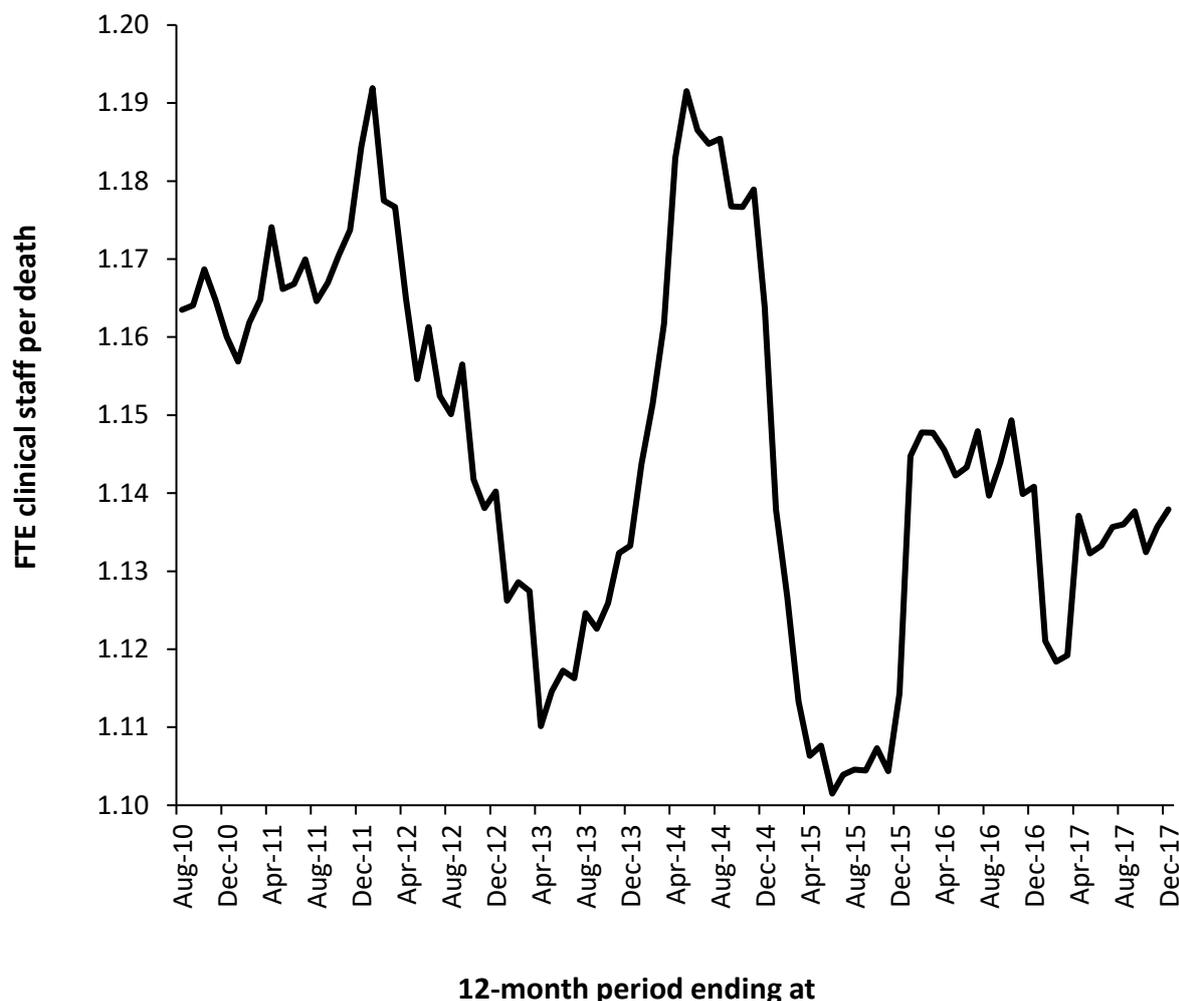


Footnote: Data on clinical staff is from NHS Digital (2017) while deaths are from the Office for National Statistics (2018).

It is therefore useful to investigate the trends in clinical staff per death. Figure 1 shows the trend in the average full-time equivalent (FTE) clinical staff employed in acute and community care in England (excluding GPs) since 2010 and the corresponding number of deaths which have occurred over the same period. Both FTE clinical staff increase over the time-period. Both trends are rolling (moving) 12-month views of average FTE or total deaths. The trend for staff is a continuous line due to somewhat steady state training of new staff and then mostly full-time employment. The trend for death is far more volatile and for England is a composite picture of small-area on/off switching (Jones 2017). In theory such on/off switching is not supposed to exist, yet it is also a distinct feature of the trends in small-area medical admissions (Jones 2015a-c), and staff sickness absence (Jones 2016).

The interplay between the two creates the trend in Figure 2 for the ratio of FTE clinical staff per death which ranges between 1.1 to 1.9 FTE per death. Staff workload for those patients in the end-of-life stage of their morbidity/mortality journey therefore can vary by up to 72% higher in some years. Workload per member of clinical staff was highest, i.e. fewest staff per death, in the 12-month period ending April 2013 and the 12-month period June 2015.

Figure 2: Ratio of FTE clinical staff per death (all-cause mortality) in England, 2010 to 2017.



Workload was lowest in the 12-month periods ending January 2012 and May-2014. The minimum number of deaths in the 12-month period ending December 2011 appears to have had a lagged effect of staffing leading to a minimum number of staff in the 12-month period ending December 2012.

Since deaths have risen faster than staff numbers the workload has increased, and this creates the dilemma that while acute trusts may be attempting to contain costs by limiting staff numbers they are unable to do so due to the higher workload imposed by the higher deaths.

It should be clear that end-of-life workload is not restricted to death in hospital. The mid-1990's study of Busse et al (2002) calculated 23.2 (age 85+) to 40.6 (age 55-64) days in an acute hospital bed for those in the last year of life in Germany. The 1999-2000 study of Dixon et al (2004) calculated 28.4 (age 0-4) to 32.3 (age 25-44) days in hospital in the last year of life in England.

In conclusion, deaths in England and Wales 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. The above ratio of acute and community clinical staff per death is likely to remain unaltered, except that acute staff may be redeployed to community delivery. It remains to be seen if STP plans to reduce acute bed numbers will become a reality in the face of this increase in end-of-life related demand.

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