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Trends in emergency admissions per death

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Decease terminates the opportunity for further emergency admissions and hence the number of emergency admissions per death may be a useful way of gauging the number of admissions per person over a lifetime, i.e. at any point in time emergency admissions are occurring at all points of the population's life-cycle.

In this respect Figure 1 gives the monthly number of emergency admissions per death (both in and out of hospital) from Feb-09 to Feb-14. A seasonal profile is evident and this is shown in Figure 2.

Figure 1: Emergency admissions per death

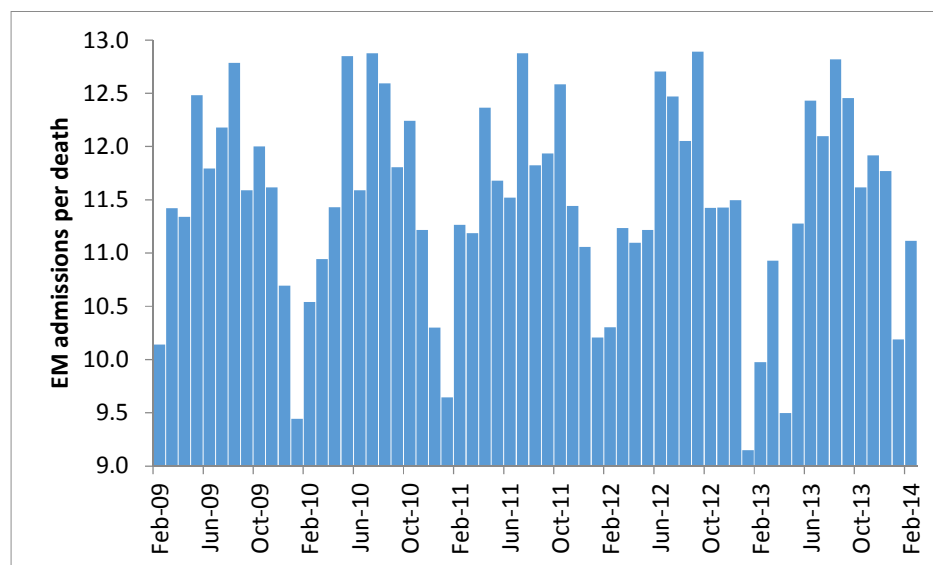
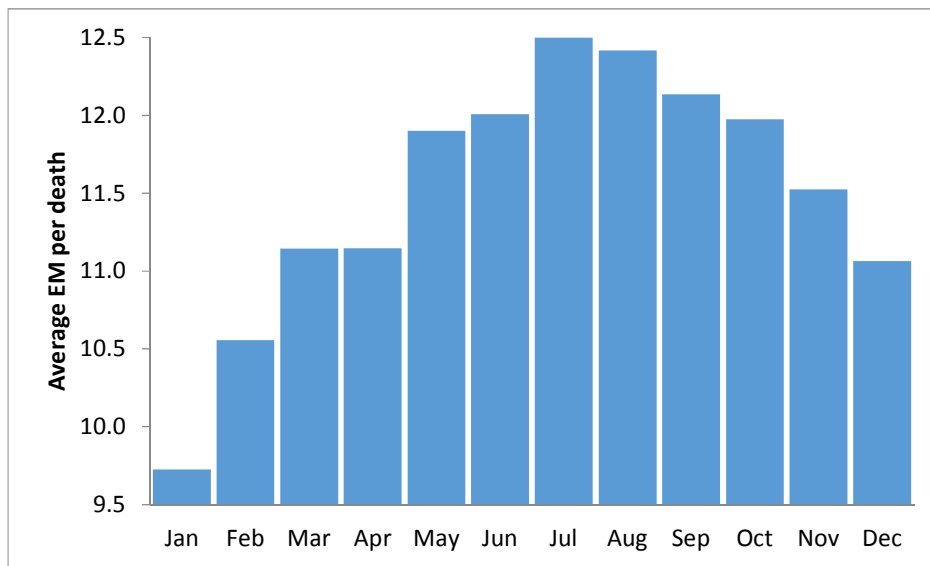


Table 1: Proportion of emergency admissions by specialty

Specialty	2009/10	2010/11	2011/12	2012/13
Medical	45.8%	46.3%	47.0%	47.7%
Surgical	18.1%	18.0%	18.4%	17.8%
Paediatrics	11.8%	11.9%	11.8%	12.4%
A&E	12.3%	12.2%	11.2%	11.0%
Orthopaedic	6.0%	5.7%	5.7%	5.3%
Other	6.1%	5.8%	5.9%	5.8%

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Figure 2: Seasonal profile in emergency admissions per death



Deaths generally peak in January/February, as do emergency admissions, however, deaths peak more strongly than emergency admissions and this leads to the summer peak in the ratio of emergency admissions per death.

Since many emergency admissions are not directly linked to end-of-life we can use this ratio as a rough snapshot of the average emergency admissions per person per lifetime. This assumption holds roughly true when births and deaths are matched. There were 1.43 births per death in England in 2013 and so any ratio will be biased toward childhood emergency admissions. So how do we explain the very high figure of 11.5 (annual average) per death. Firstly we adjust for the current ratio of 1.43 births per death which brings the figure of 11.5 down to somewhere around 8 per death. Table 1 provides further useful insight.

Admission to specialty Accident & Emergency (A&E) are mainly assessment unit admissions and prior to 2002/03 was fairly constant at 2.2% of total emergency admissions. The A&E 4 hour target changed all that and by 2009/10 this had risen to 12.3% of emergency admissions. Hence we could say that around 10% of these admissions would probably be called A&E attendances in any other country of the world. This takes us down to 7.2 admissions per death. Very few paediatric admissions and many of the other non-medical group specialty admissions end in death, hence, we can roughly say that at least a further 40% of the remaining admissions are not directly end-of-life related leaving an approximate upper estimate of 4.3 admissions per death which could be directly end-of-life related, how be it over the last decade of life with multiple admissions and re-admissions in those with long-term conditions.

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I have never seen an estimate of the likely lifetime emergency admissions for the NHS however, whichever way you look at it this figure is still fairly high and goes a long way to explaining why acute care takes up such a large proportion of the total health service budget.

These figures are however remarkably consistent with a study conducted in England in 1999/2000 which investigated admissions (all admission types) in the three years prior to death for persons who died in hospital.

Average admissions in the three years prior to death were around 3.6 (not far off the 4.3 estimate above). This peaked at 10.4 admissions for patients aged 5-9 and declined to around 2.2 for those aged 85+ (Dixon et al 2004). Some 78% of the bed days occurred in the last year of life (the key bottle neck for bed pressures) and upper quartile admissions were around 8 for those aged 5-15 to around 3 for those aged 85+.

Hence it seems that along with the ratio of bed days per death (Jones 2011a,b) the ratio of emergency admissions per death may be a useful metric for CCGs seeking to show that the trends are going in the right direction.

References

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