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# Bed occupancy, efficiency and infectious outbreaks

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Many years of government policy can be summarized in the mantra that the NHS is inefficient and that higher than expected growth in emergency admissions is arising from this inefficiency. While it is true that some factors may lead to higher acute health care utilization, it does not automatically follow that the factors responsible for higher utilization are the same factors driving the increase in emergency admissions.

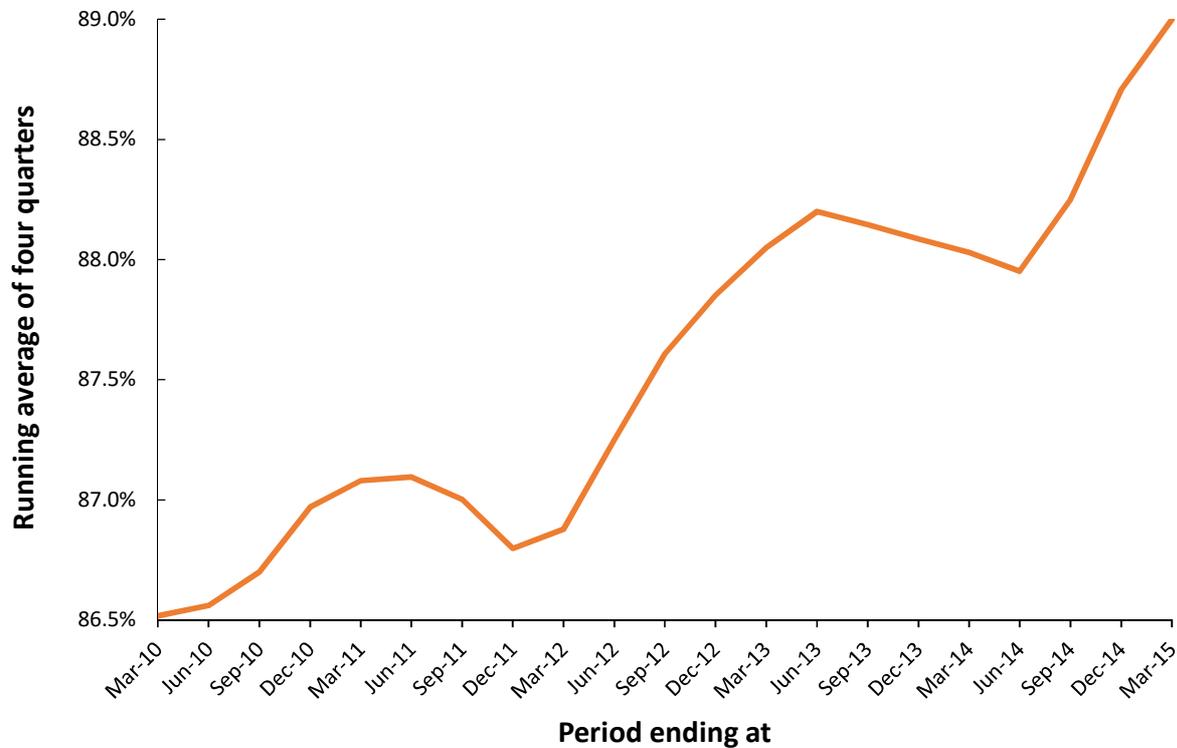
It has recently been pointed out that the unexplained growth in emergency admissions is restricted to a particular set of medical conditions, and that the surgical specialties and trauma admissions are not displaying the same unexplained growth [Jones 2015a,b]. It is also true that the periods of unexplained growth in medical emergency admissions only ever happens during periods of unexplained higher all-cause mortality, and that this unexplained mortality is also condition specific (Jones 2015a-c).

These peculiar periods of growth are most readily demonstrated using running 12 month totals. In a running 12 month total an abrupt step-like increase in activity is revealed as a ramp, where the foot of the ramp marks the onset of the step-change and the point 12 months on from the foot of the ramp gives the value of the step-like change. This approach is essential when the underlying data is highly seasonal (Jones 2015a,b).

With all of the above in mind, Fig. 1 gives a running 12 month total of average bed occupancy for acute hospitals in England. As can be seen three step-like increases in average occupancy for the whole of England are revealed commencing somewhere after June 2010, March 2012 and June 2014.

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**Figure 1: Running 12 month average of general and acute bed occupancy in England**



Footnote: Data is from <http://www.england.nhs.uk/statistics/statistical-work-areas/bed-availability-and-occupancy/bed-data-overnight/> and utilizes quarterly data from Q1 of the 2010/11 financial year onward. Quarterly data for the 2009/10 financial year was estimated from average occupancy for the whole year using average quarterly occupancy from 2010/11 to 2014/15 apportioned across 2009/10.

Firstly, please explain how acute hospitals across the length and breadth of England ‘conspired’ to increase average occupancy in an apparently synchronous manner around the same time that both deaths and medical admissions (and only medical admissions) show the same unexplained increase. Next, please explain why rational management in independent hospital Foundation Trusts would inflict upon themselves the deleterious effects of higher occupancy and thereby deliberately threaten A&E performance, increase cancelled operations (Jones 2011a-b,2014,2015a), and general length of stay and re-admission inefficiency arising from bed borrowing (Jones 2013a).

Lastly, why do this three times as seen in Fig 1 – although there is evidence that the same has happened on repeated occasions during previous events (Jones 2011c-d,2012,2013a,2015b).

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Whitehall can no doubt concoct an explanation suited to policy-based evidence (Jones 2013b); however an evidence-based explanation simply cannot support the policy-correct view. Either an incredibly powerful and infectious-like event has happened or something equally mysterious has occurred which is capable of increasing all-cause mortality (Jones 2015c), sending people to hospital and rapidly filling beds. Hence the 2010, 2012 and 2014 events caused step-like increases in occupancy of 0.52%, 0.97% and 1.05% (percentage point increases). Hence for the 2014 event around 1,100 occupied beds worth of medical patients was suddenly 'dumped' upon the acute care system, the equivalent to suddenly needing two new hospitals.

At a minimum average cost of around £300 per day this increase was the equivalent to a £121 million cost 'shock'. Why are we surprised that large deficits abound? It is about time that the politicians owned up to the fact that the policy-correct explanations simply do not add up.

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