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Deaths in 2017 reached a new (unexpected) high

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Part of a longer series available at http://www.hcaf.biz/2010/Publications_Full.pdf
The published version is available via an Athens login at www.bjhcm.co.uk

Abstract

For many years Office for National Statistics forecasts for deaths in England shows a minimum between 2011 and 2018. However, contrary to all previous forecasts deaths suddenly rose in 2012, and have continued to rise. The rise is location specific and a rolling (or moving) 12-month total of deaths show that local authority deaths reach a maximum at points throughout 2017, i.e. we are NOT dealing with a seasonal phenomenon. Sub-local authority small area studies of both deaths and medical admissions show evidence for something resembling infectious spread of a new type or kind of disease which initiates on/off switching in both deaths and medical admissions. This small area behaviour totally contradicts the theory that increased deaths are due to government austerity. Urgent research is required to elucidate the exact mechanisms.

The NHS has just experienced a horrible winter with average (midnight) occupancy, which includes children's wards, children's and specialist elective hospitals reaching 95.8% (median 96.6%, upper quartile 99%) on the 3rd January 2018 (NHS England 2018). This was largely before the influenza outbreak took hold. How does this have anything to do with end-of-life and deaths?

End-of-life can account for 45% and 55% of a person's entire lifetime admissions and usage of a hospital bed respectively. This has been known and well documented since the 1990's (Hanlon et al 1998, Seshamani & Gray 2003, Dixon et al 2004, Jones 2011). The marginal changes in bed demand are therefore largely driven by the marginal changes in the absolute number of deaths (Beeknoo and Jones 2017a).

All current hospital demand forecasts rely on the entirely fallacious assumption that activity (and beds) is entirely driven by age. For many years I have pointed out that these models are open to 'political' manipulation to get whatever answer is desired (Jones 2001, 2002, 2009a,b, 2010).

In view of the high acute demand in the last year of life, deaths in England and Wales reached a maximum 5-year average of 589,203 per annum in the interval 1972-1976, and due to increasing life expectancy this was followed by a gradual decline to 1999. From 2000 to 2011 there was a more rapid decline to a minimum of 484,367 deaths in 2011 (ONS 2018a). Figure 1 presents the trend from 2001 onward as a rolling (moving) 12-month total plus the ONS 2010-based forecast.

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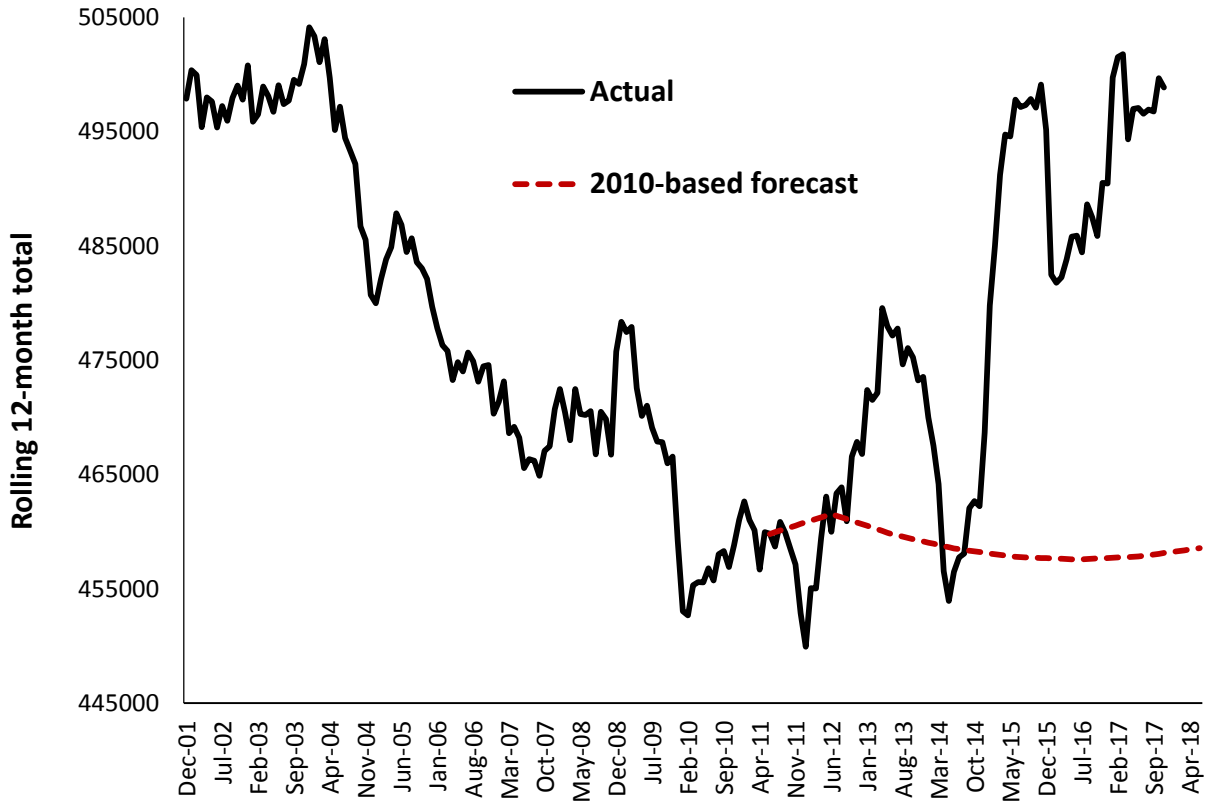
Figure 1: Rolling (moving) 12-month total deaths in England and Wales from 2001 and ONS 2010-based forecast



Footnote: Data is from ONS 2011 and 2018b

For many years the Office for National Statistics has been forecasting that deaths would reach a ***minimum*** in recent years (Jones 2017a) – as in Figure 1. Hence, the fact that 42% of local authorities and regions reached a rolling total ***maximum*** number of deaths in 2017 (72% reaching >95%) compared to any time since 2001, is of vast medical and NHS capacity importance (Jones 2017b,c, 2018a,b). Table 1 lists the local authorities who have been worst affected (>30% increase) by the unexpected increase.

This reversal in the number of deaths since 2011 (Figure 1) is totally unprecedented in rapidity and magnitude (Jones 2017a, 2018a,b). The rise in deaths since 2015 may have even been exacerbated by the 2014/15 winter influenza vaccination, which was a very poor antigenic match (Jones 2017d).

Also note the entirely unexplained saw-tooth behaviour in the rolling 12-month total which is indicative of on/off switching, and which leads to high spatiotemporal (space-time) granularity with some area affected far worse than others and at different times, as in Table 1 (Jones 2017e). Also note that 12-month long periods of higher deaths are not aligned to financial years. Hence Surrey and Wokingham experience their highest pressure in the 2016/17 financial year, while Babergh in Suffolk has the pressure split over two financial years. Also note that a disproportionate number of locations experiencing maximum deaths in 2017 lie in the Eastern parts of England. Unfortunately, the NHS resource allocation formula is not structured to reflect these realities, and local management are blamed.

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Table 1: Local authority areas experiencing the greatest unexplained increase in deaths during 2017

Region	County	Local Authority	Maximum within 2017	Minimum since 2001	2017/ Minimum	12-months ending
EAST	Bedford UA	Bedford	1,473	948	55%	Nov-17
EAST	Essex	Uttlesford	775	551	41%	Feb-17
EAST	Essex	Harlow	790	580	36%	Mar-17
EAST	Essex	Castle Point	1,061	797	33%	Jan-17
EAST	Essex	Chelmsford	1,540	1,158	33%	Oct-17
EAST	Essex	Brentwood	803	604	33%	Nov-17
EAST	Essex	Braintree	1,506	1,163	29%	Oct-17
EAST	Hertfordshire	Stevenage	811	593	37%	Nov-17
EAST	Hertfordshire	Watford	820	624	31%	Oct-17
EAST	Suffolk	St. Edmundsbury	1,124	860	31%	Nov-17
EAST	Suffolk	Babergh	1,037	798	30%	Sep-17
E. MIDLANDS	Leicestershire	Blaby	935	651	44%	Jan-17
E. MIDLANDS	Lincolnshire	South Kesteven	1,488	1,133	31%	Jul-17
E. MIDLANDS	Lincolnshire	North Kesteven	1,251	954	31%	Nov-17
E. MIDLANDS	Northamptonshire	Wellingborough	783	575	36%	Aug-17
E. MIDLANDS	Northamptonshire	S. Northamptonshire	785	586	34%	Oct-17
E. MIDLANDS	Northamptonshire	Corby	597	453	32%	Jul-17
E. MIDLANDS	Northamptonshire	E. Northamptonshire	919	702	31%	Oct-17
E. MIDLANDS	Nottinghamshire	Mansfield	1,225	944	30%	Jul-17
E. MIDLANDS	Rutland UA	Rutland	380	271	40%	Oct-17
NORTH WEST	Lancashire	Ribble Valley	637	489	30%	Feb-17
NORTH WEST	Merseyside (MC)	St. Helens	3,214	1,783	80%	Feb-17
SOUTH EAST	Buckinghamshire	South Bucks	731	531	38%	Feb-17
SOUTH EAST	Hampshire	Hart	728	510	43%	May-17
SOUTH EAST	Hampshire	Fareham	1,263	939	35%	Jan-17
SOUTH EAST	Hampshire	Basingstoke and Deane	1,392	1,058	32%	Oct-17
SOUTH EAST	Milton Keynes UA	Milton Keynes	1,790	1,380	30%	Jul-17
SOUTH EAST	Oxfordshire	Cherwell	1,274	978	30%	Feb-17
SOUTH EAST	Surrey	Surrey Heath	821	579	42%	Mar-17
SOUTH EAST	Wokingham UA	Wokingham	1,236	939	32%	Mar-17
SOUTH WEST	Devon	West Devon	659	485	36%	Jan-17
SOUTH WEST	Dorset	North Dorset	774	594	30%	Jan-17
SOUTH WEST	S. Gloucestershire UA	South Gloucestershire	2,367	1,804	31%	Oct-17
WALES	WALES	Monmouth	1,055	806	31%	Jun-17
WEST MIDLANDS	Warwickshire	North Warwickshire	756	549	38%	Jan-17
Y'SHIRE & HUMBER	E Riding Yorks UA	E Riding of Yorks	4,009	2,628	53%	Oct-17
Y'SHIRE & HUMBER	North Yorkshire	Selby	822	611	35%	Mar-17
Y'SHIRE & HUMBER	North Yorkshire	Hambleton	966	740	31%	Nov-17

Footnote: Data is from ONS 2018b

To rephrase the implications of the above, from 1972 to 2011 the NHS was experiencing an amelioration of bed demand due to decreasing total deaths (and associated end-of-life bed demand), which was offsetting any non-end-of-life associated increase due to the ageing population. Commencing in 2012 increasing deaths and ageing have been operating in the same direction leading to high pressure on beds – made worse (but not caused) by reductions to social care budgets.

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Such mysterious periods of higher deaths have happened before but were ignored (Jones 2018b). Yet, no one in government is seemingly (publicly) investigating, and policy-based evidence is busy blaming the NHS for being inefficient (Beeknoo and Jones 2017b). While continuous improvement will always be a necessity in healthcare, the need for 'change' may simply be addressing the symptoms and not the cause.

A recent study regarding the relative contribution of age versus nearness to death into prescribing costs concluded that "The evidence presented refutes age as a driver of prescription expenditure and highlights the importance of accounting for mortality in future expenditure projections" (Moore et al 2017). Policy makers simply cannot become dissociated from reality. Welcome to a world where policy takes precedence over reality, and perhaps even the common good?

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