



DISCUSSION PAPER PI-1906

Deaths in England and Wales are falling – does the austerity theory still apply?

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May 2019

ISSN 1367-580X

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Deaths in England and Wales are falling – does the austerity theory still apply?

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Abstract

An alarming rise in deaths since early 2012 has led to a deterioration of life expectancy in the UK and elsewhere in the world. In the UK several studies sought to implicate austerity as the cause of the increased deaths. However, these studies did not cite other studies which document behaviour of deaths inconsistent with the austerity theory. This short paper presents further evidence which is inconsistent with the austerity theory and poses the possibility that deaths are now falling back to levels expected to apply in the original actuarial forecasts. Possible reasons for the temporary blip in deaths are discussed. This paper uses the direct count of deaths to follow the trends rather than age standardized mortality, because complex trends in age-specific changes in deaths suggest that the process of age standardization may be acting to disguise the underlying causes for the trends.

Introduction

A series of recent papers by academics has promoted the notion that austerity directly led to increased deaths and stalling mortality and life expectancy improvements in England and Wales since 2011 [1-12]. However, as others have pointed out, correlation does not prove causation and other explanations are possible [13,14]. Recent reports and studies have noted that this is an international phenomenon [15,16]. In the USA life expectancy stalled between 2012 and 2014 [17], and then progressively declined in 2015, 2016 and 2017 [18-21], which clearly has nothing to do with UK austerity.

Indeed, the austerity theory contains several key flaws [22], and a series of papers highlighting small-area behaviour of deaths inconsistent with austerity [see http://www.hcaf.biz/2010/Publications_Full.pdf] have not been cited by the studies seeming to support austerity as a cause of increased deaths.

This short study will highlight several additional facts relating to deaths which do not support the austerity theory.

Deaths Have Declined Since 2018

Austerity is still ongoing in the UK, and as such there is no reason that deaths in England and Wales should suddenly decline. However, as Figure 1 demonstrates deaths have indeed begun to show evidence for a rapid decline in England and Wales since April 2018.

Figure 1: Rolling 12-month total deaths in England and Wales. 12-months ending Dec-01 to 12-months ending Mar-19. Data is from

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/monthlyfiguresondeathsregisteredbyareaofusualresidence>



Figure 2: Rolling 12-month total deaths for several areas in England and Wales. Deaths are relative to the maximum for each area.

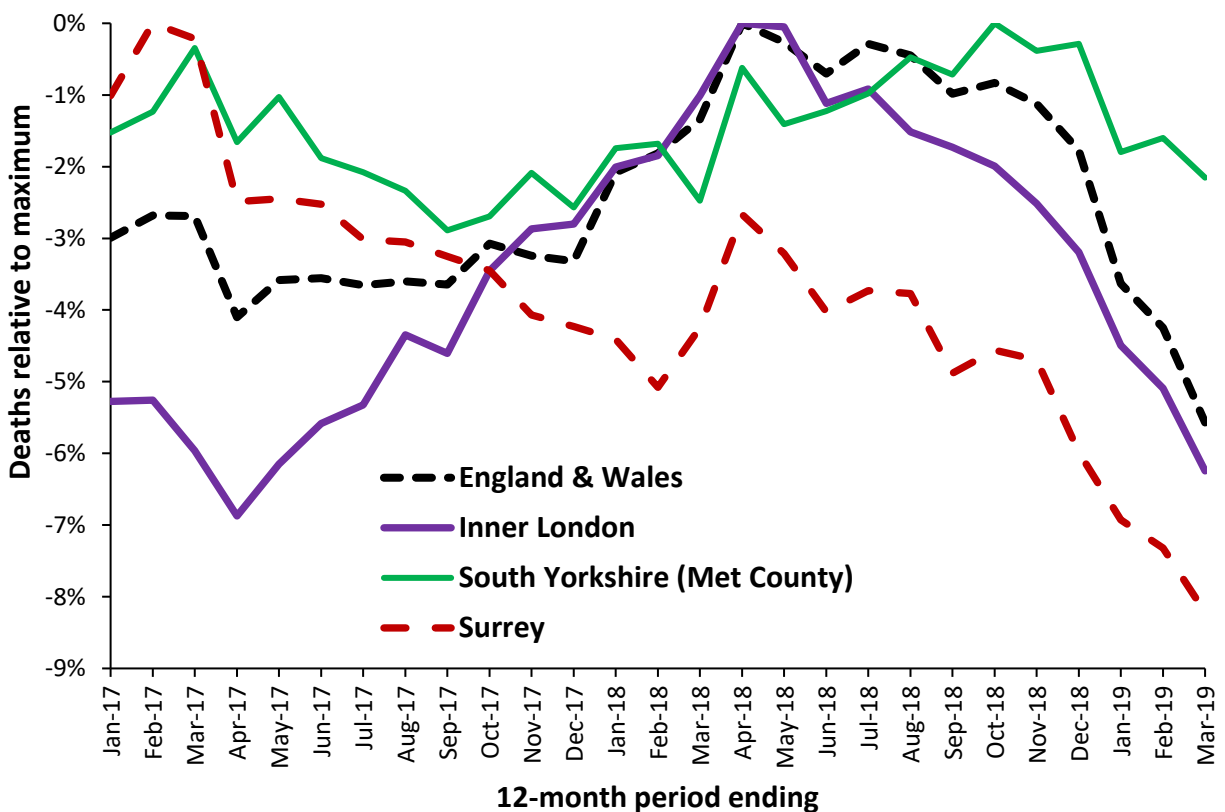


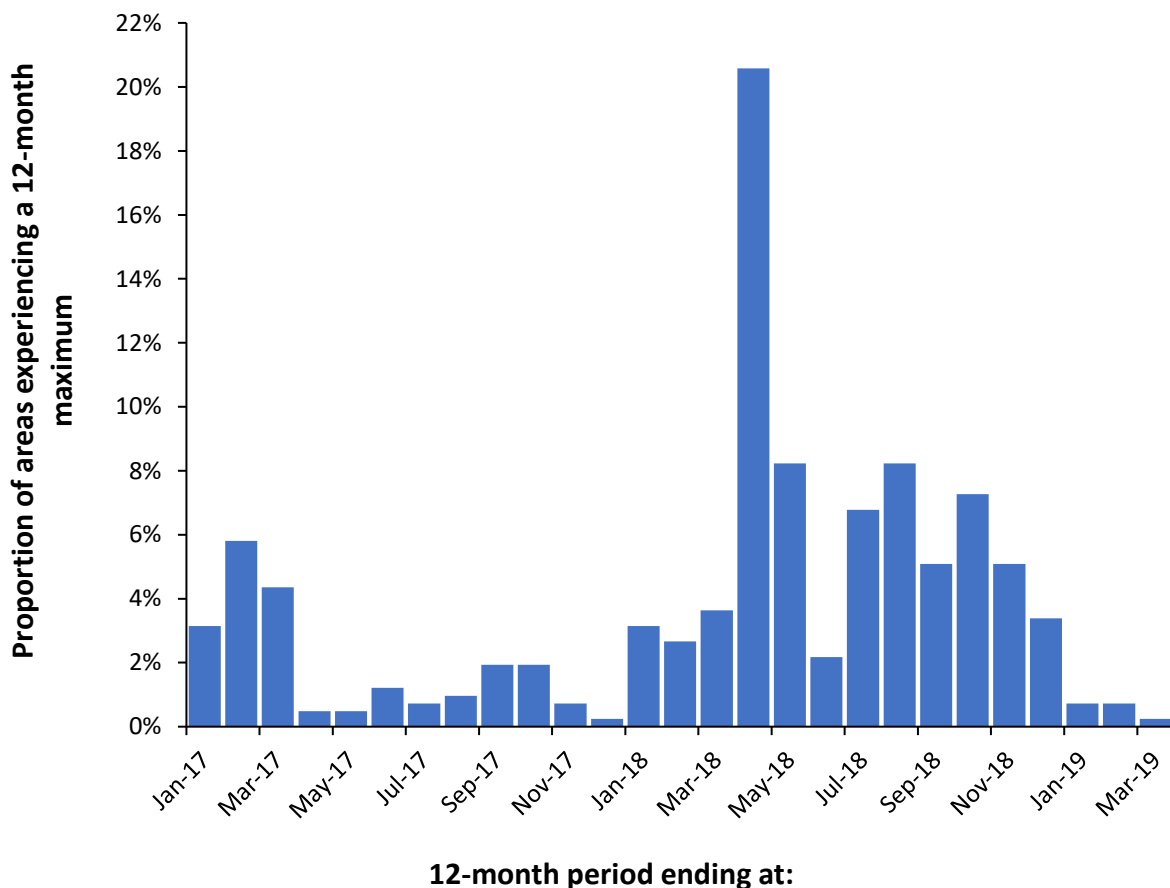
Figure 1 also contains lines for the end of each calendar year in order to demonstrate that studies-based on calendar year data can be misleading since they fail to identify more complex trends. As can be seen a series of similar events occurred before 2011. The austerity theory fails to explain why deaths rise and then fall. Recall that in a rolling total seasonality is effectively removed.

Deaths failed to fall by the expected amount after the 2014/15 event, however, a catch-up appears to be occurring in 2018/19. Once again this defies the austerity theory.

This decline is further decomposed by looking at the trends for several larger regions and counties in the interval Jan-17 to Mar-19 where the trend for England and Wales is in fact a composite picture derived from smaller areas (using larger regions/counties to illustrate). As can be seen Surrey reaches maximum deaths back in Feb-17, while maximum deaths in South Yorkshire do not occur until Oct-18. Deaths in inner London reach a peak at the same time as England and Wales.

Figure 3 shows the distribution of dates at which 395 English and Welsh local government areas, counties and regions reach the maximum count of deaths. There are no demographic patterns which can explain these trends.

Figure 3: Proportion of 395 English and Welsh local government areas which experience maximum rolling 12-month total deaths between January 2017 and March 2019.



The key question is, do deaths continue to decline for an extended period, as observed in Surrey? Clearly something outside of the usual explanations are at work. We need to ask if NHS England, NHS Improvement and Public health England are being open and honest with the NHS and the public regarding the true nature of these events and their impact on human health?

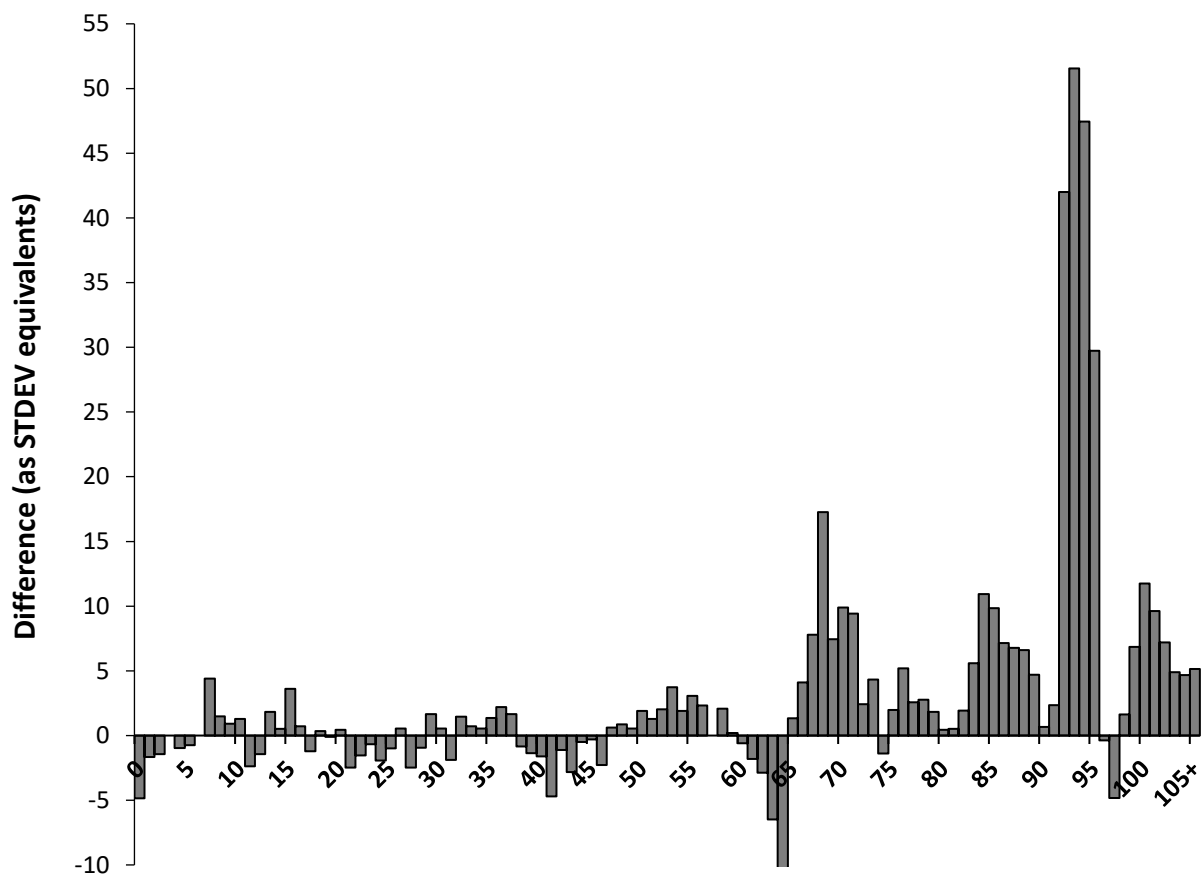
Single year-of-age Patterns in Deaths Defy Austerity

It is widely recognised that deaths in the whole UK reached a minimum shortly after the end of 2011 and that there was a large increase in deaths in 2015 (as in Figure 1). If austerity is the cause for increased deaths there should be a simple pattern of deaths increasing for the elderly who, it is argued, would suffer the most from reduced levels of social care. Figure 4 shows an entirely contradictory situation where the age at death in 2011 is compared to that in 2015. The difference between the two has been converted into Standard Deviation (STDEV) Equivalents using Poisson statistics. Anything beyond ± 2 STDEV is higher than the 98% Confidence Interval.

The undulating pattern of high/low deaths is highly suggestive of a phenomenon called the birth cohort effect, where deaths later depend more on the year of birth than age per se. See Huang et al for an example with age-related maculopathy [23]. Clearly something other than austerity is at work.

Figure 4: Difference in female deaths between 2011 and 2015 seen across the whole UK, as Standard Deviation (STDEV) equivalents. Data is from

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/deathregistrationssummarytablesenglandandwalesdeathsbyingleyearofagetables>



Why this study does not use age-standardization

The criticism of Figure 4 is that it has not used age-standardization. However, an earlier study of an unexplained increase in deaths in 2012 used age standardization and reached similar conclusions [24], i.e. the behaviour is a fundamental property rather than something arising as an artefact of differences in population numbers. Similar patterns have also been reported to be associated with another period of unexplained higher deaths in 1993 [25]. Indeed, the changes in Figure 4 are too

big to arise from population differences, and the birth cohorts arising from the World War I and II baby booms have different periodicity to that in Figure 4.

Indeed, the complex patterns of differences due to age further imply that the assumptions implicit in calculating an age standardized mortality rate may act to cloud the underlying mechanisms. Age-standardized mortality rates only gives a single figure summary of a complex system.

Possible causes for the higher deaths after 2014

The reader will need to do further reading of papers at http://www.hcaf.biz/2010/Publications_Full.pdf to fully understand the entire context. However, in summary, the saw-tooth features in Figure 1 arise from on/off switching, which seems to arise from spatio-temporal patterns of movement of a new type or kind of immune disease. The saw-tooth feature associated with 2014/15 rose but never fell to the degree which would normally be expected. ***The following is a speculative hypothesis which requires further research to prove.*** The possibility exists that vaccination of the population in late 2014 with a poorly matched influenza vaccine led to immune diversion which interacted with later influenza infection (with strains which had mutated away from the antigen mix in the vaccine). Under such circumstances negative influenza vaccine effectiveness arises. This interaction may have acted on top of a switch-on event of the new disease which happened around mid-2014. For further detailed discussion see reference [26].

However, whatever the cause, a cohort of susceptible individuals may have experienced higher mortality (in the interval 2015 to 2018) before deaths could revert to their expected levels.

Conclusions

Academics need to question the austerity theory with greater rigor. Birth cohort effects need to be explored further. Researchers need to investigate the small-area patterns in deaths and medical admissions identified in the studies published by this author (see http://www.hcaf.biz/2010/Publications_Full.pdf). Government agencies need to define the issues more clearly rather than 'sound bites' that it's all about an ageing population!

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