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Why did so many more older people die in England and Wales in 2015?

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Harold Macmillan was right when he told the British people, in 1957, that “you’ve never had it so good”. The post-war period was characterised by improving living standards and, above all, victories in the fight against disease and premature death. Indeed, for almost all of the post-war period, death rates have been falling steadily in England and Wales. Of course, there have been some fluctuations from year to year. This is to be expected, given the complex range of factors that determine the health of the population, some acting in early life, rendering individuals especially vulnerable, and others, such as outbreaks of infectious disease, acting now. On top of this, there is the inevitable random variation. Consequently, it is important not to read too much into a small change between one year and the next.

Sometimes, however, the changes are not small. On a few occasions, there have been large jumps in death rates. The two largest jumps in the post-war period happened in 1951 and in 1968. In both cases, the reasons were clear. In the first, it was influenza epidemic (followed a year later by London smog). In the second, it was an influenza pandemic. It was the third largest jump that we were concerned about. This happened in England and Wales in 2015, and there was no obvious explanation. We felt that it was important to try to find one, and we have just published **two papers** that describe our search.

We were interested for several reasons. First, we estimated that there had been about 30,000 more deaths than would have been expected. This was a lot of people. Second, although the increase that year had been especially high, when we looked at a longer time series, we could see that the sustained decline in death rates had begun to reverse as early as 2011, when austerity policies were beginning to bite. Third, when we looked in more detail, the pattern raised many unanswered questions, but what we saw pointed towards a problem for some of the **most vulnerable** in society, people aged over 75 who were especially dependent on health and social care. And finally, from other work that we've undertaken over several decades, we knew that a significant worsening in death rates was often a warning that something was wrong in society. Indeed, it was the **stagnation of life expectancy** in the Soviet Union in the early 1980s that showed that all was not well in that country.

The first, and most obvious, step was to ensure that we were not simply dealing with an artefact of the data. There are many examples of people being misled by problems with either the recording of deaths or the estimation of the population (had more people recently entered the country for example, especially elderly people?). It was also important to make sure that what we were seeing was not simply an effect of changes in the age composition of the population. There are well-established techniques for addressing these issues, and when we used them, it was clear that what we were seeing was real.

Having established that there was a problem, we then dug deep into the data, looking at who was dying, from what, and when during the year. We also collected a mass of other information, such as data on influenza (a common reason for annual fluctuations), and what was happening in the NHS and society more widely.

There are only a few reasons why death rates might increase substantially. One is that there was a natural disaster, such as an earthquake or hurricane. For example, in 1988 there was a large spike in deaths in Armenia when the country was struck by a **massive earthquake**. We could rule out this explanation easily.

Another possible reason was a flu epidemic, especially given that this was the main cause of the previous two largest post-war increases in death rates. There had been some concerns about the effectiveness of the flu vaccine in 2014/2015. When we looked at the data, we could see a very large increase in deaths in January 2015. This could fit with a flu epidemic, except that the timing did not match with notifications of influenza-like illness in general practices, nor did the shape of the increase resemble what had been seen in previous flu epidemics. And crucially, there was no similar increase in deaths in neighbouring European countries, despite evidence that some of them were experiencing small outbreaks of flu that they were keeping under control.

So what were we left with? Something had clearly gone wrong in January 2015. And when we looked at what had been happening in the NHS in England at the time, the findings were alarming. Using any of the common indicators of performance, it was clear that the system had been in crisis. Attendances at A&E departments had not increased, but the number of people waiting over four hours and as many as twelve hours when they went to A&E had gone up dramatically. Waiting times were exceptionally high. It was difficult to avoid the conclusion that the NHS had simply failed to cope for a few weeks. We can only speculate why. However, one plausible suggestion is that we were watching a complex interlinked system that had only just been coping — it would take very little to topple it over. We suspect that this was what happened in January 2015.

But that was not all. When we looked in more detail, we could see that there had been an increase in death rates throughout the year, in all but three months, compared with the average for the previous nine years. It was also affecting **all parts of the country**. This was more difficult to understand. We could see that the increase in deaths was concentrated among the very old, and many of the excess deaths have been attributed to dementia. However, we had to be cautious in interpreting this, as the government had launched a major programme to improve early diagnosis of dementia, which might at least in part explain the apparent increase in deaths from dementia. But what was clear was that the excess deaths were occurring in a group that was particularly dependent on the NHS and social care, and in a **previous paper**, some of us had shown that a worsening of mortality among pensioners over 85 was greatest in those parts of the country that had suffered the largest cuts in social spending and pension credits.

There are still many unanswered questions about what is happening to death rates in England and Wales. The most recent data, covering the first six weeks of 2017, a time when the newspapers were full of stories of the NHS in crisis, are cause for concern. We can clearly see another spike in deaths which, although not quite as large as in 2015, is much greater than in previous years (1951, 1968 and 2015 excepted). Unfortunately, there are long delays in providing the detailed data that we need for the analyses that we conducted for 2015. The early signs suggest that underfunding of both health and social care continues to be implicated in a sustained, much heighted, elderly mortality rate that is exacerbated in the winter months when the stresses on both health and care services are now highest. This has all occurred despite recent winters being unusually warm. What has been unusual are the depth and length of the funding cuts.

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