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The mysterious case of the disappearing deaths

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On Friday of last week (9/8/13) the HSJ reported that Public Health England (PHE) had ceased reporting on excess deaths using the Office of National Statistics (ONS) weekly death statistics and the role had been transferred to the former Health Protection Agency's (now part of PHE) Influenza reporting unit at Colindale, which was formerly part of the Public Health Laboratory Service (PHLS).

Interestingly the weekly Influenza reports going back to 2012 show only a small or no apparent increase in excess mortality (in a very small and poor quality figure at the end of the report) and in addition gives no breakdown by age to allow any further investigation.

So where did the excess deaths go?

Forecasting future deaths is a mix of art and science and is performed by The Government Actuary's Department which takes births, deaths, immigration/emigration and changes in life expectancy into account. There are uncertainties in all of the inputs but past forecasts have been acceptably accurate given the impact of infectious outbreaks such as influenza, etc.

All well and good, however, as I have pointed out there is an unexpected cyclic pattern imposed onto the death trends which has been ignored due to lack of any explanation as to why it should exist. I have spoken to a very senior actuary (who is capable of doing his own independent analysis) from one of the major life insurance companies and he was aware that the improvement in life expectancy had taken unexpected steps backwards in the calendar years 1993, 1995/1996, 2002/2003, 2007/2008 and again in 2012 which are the years for proposed outbreaks for a new type of infectious immune impairment. Females were worst affected on all occasions. He was not aware that anyone had any explanation other than that they had happened and had a measurable effect on mortality.

Due to improvements in life expectancy total deaths (all-cause mortality) in England and Wales have been declining for many years and are expected to reach a minimum around 2016 to 2017 after which they are set to rise again due to the sheer force of population numbers especially among the elderly. At smaller regional level the situation is slightly different to the national

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'average' position as the balance of the various forces varies from one place to another. Hence any method purporting to reflect 'expected' deaths has to take this ongoing reduction into account, at least when looking at national figures.

However I would argue that the real situation is better represented by a cycle around the expected trajectory. In this cycle deaths go through a minimum during a period before the proposed infectious outbreaks and then jump to a maximum before reverting back to the expected trajectory.

Colindale are presumably free to choose whatever method to set the number of expected deaths and seem to have erred to the side of caution, i.e. too high, hence the excess deaths reported by the other arm of PHE have apparently 'disappeared' or been argued away. This is probably because for the purpose of influenza monitoring it is desirable to avoid false positive flags and a slightly higher 'expected' deaths baseline is quite acceptable. However for the purpose of detecting a more subtle infectious outbreak the influenza report is neither the place nor the correct methodology. Can we infer a maneuver of expediency?

In my own analysis of expected deaths following the 2002 and 2007 outbreaks at smaller regional level I have used curve fits to attempt to model the underlying trend but deleted the spike years following the outbreaks in order to approximate some sort of outbreak-free trend. You are free to argue if my method is robust and it can almost certainly be refined, however, excess deaths are seen to move in a spatial manner across the country as I have reported for the 2012 outbreak.

The other problem about seeking to argue away the excess deaths is that A&E attendances, emergency medical admissions, GP referrals (especially to Dermatology), the gender ratio at birth, trends in the incidence of specific cancers and general health care costs all show an increase simultaneous to the increase in deaths. See http://www.hcaf.biz/2013/CMV_Read.pdf for a recent review.

So how many excess deaths arose from the 2012 outbreak. The original PHE estimate was around 20,000. I would argue that the real point of comparison is the period of apparent outbreak-free deaths just prior to the outbreak. Using this as the baseline you probably get in excess of 40,000 deaths. Whichever way you count it is still a lot of people.

So we either pretend nothing has happened or bite the bullet and make a serious attempt to find out what actually happened and what this means from a public health and funding perspective. Prof Steve Fields comments as reported in the HSJ were certainly most evasive. Exactly what is to be gained by pretending there is not a problem?

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