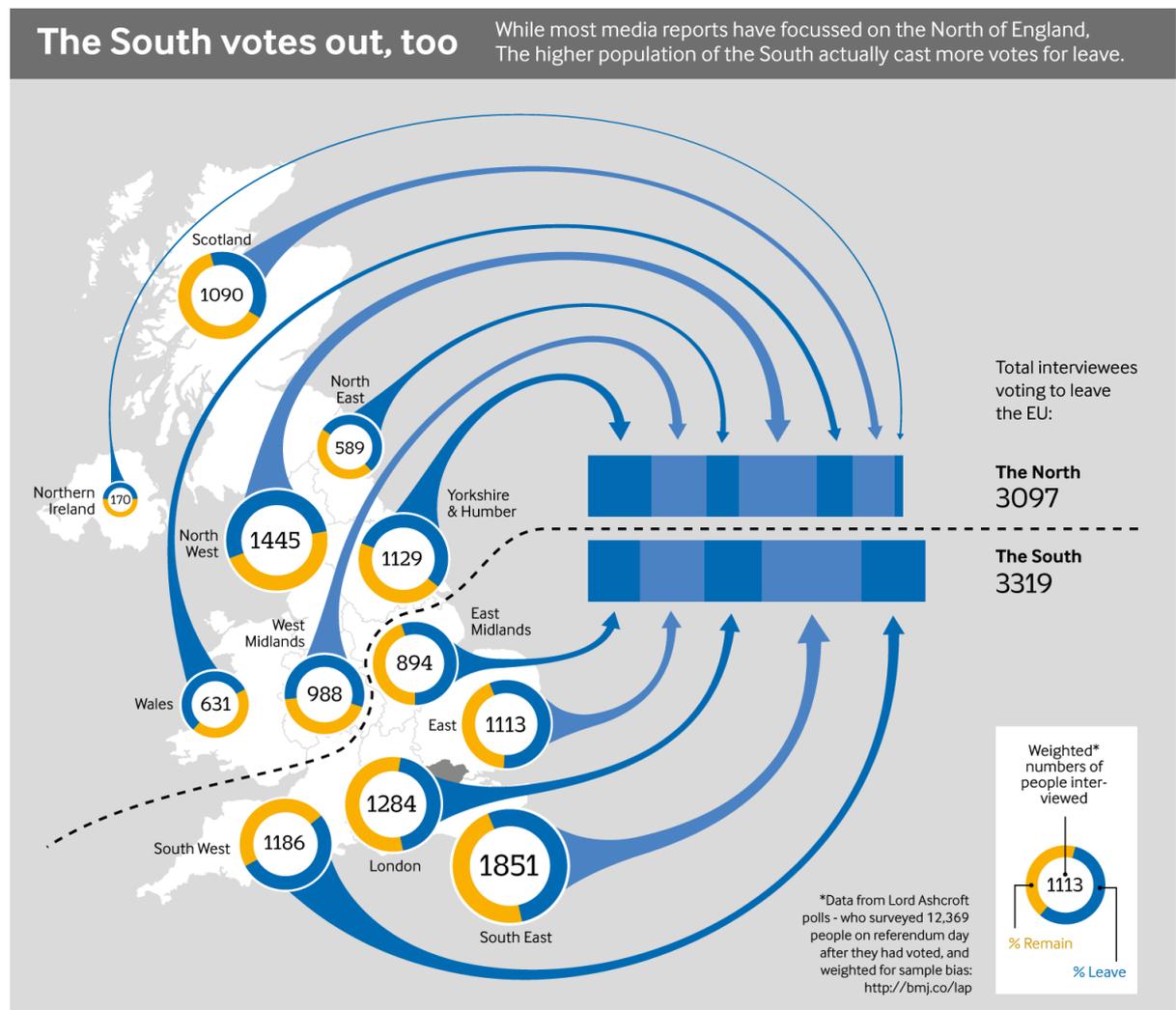


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Rapid Response to Comment on Editorial Brexit: the decision of a divided country

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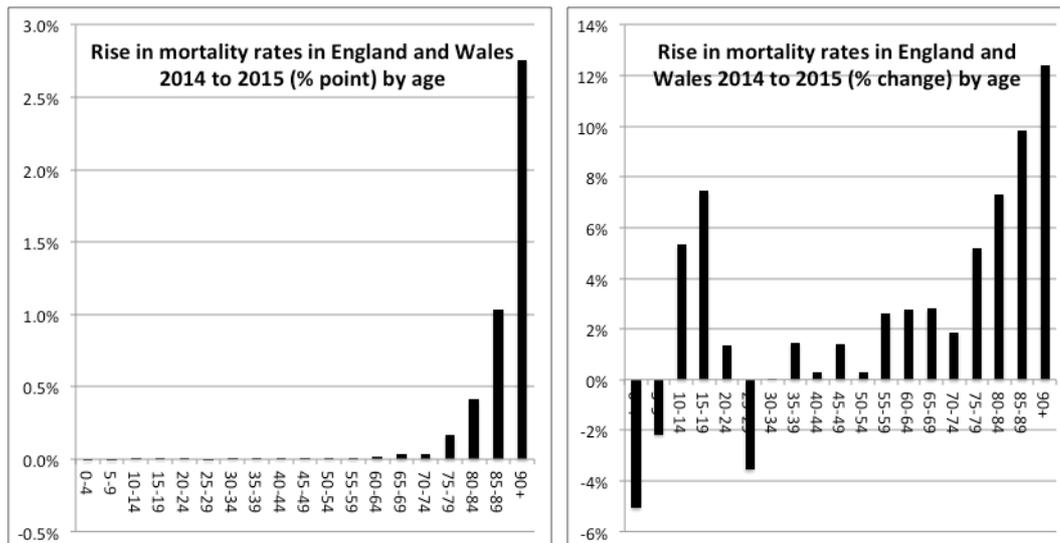
■ Response

Re: Brexit: the decision of a divided country

Gee Yen Shin explains why health professionals, including all four chief medical officers of the UK, have so far largely ignored the huge rise in mortality in the UK that occurred in 2015. They appear to have accepted his suggestion that “pathogens like influenza virus were the major contributor to the rise in numbers of deaths in the year to June 2015”^[1]. However, if this were the case, we need to know why the rise in deaths was spread out over so many months – unlike all previous influenza epidemics and why the old were hit the hardest.

The most recent severe influenza outbreaks in England and Wales began in late 1969, 1989, 1993 and 1999. Each resulted in a rise in mortality over the course of a few weeks and each mainly affected the people aged under 65^[2]. The increases in mortality in 2012, 2013, and especially in 2015, lasted for many months, and resulted in many times more deaths than any of those previous influenza outbreaks. Furthermore the recent increases in deaths did not spread geographically as flu outbreaks do.

There are many other reasons to doubt that influenza was the major contributor. For instance, since 2010, there has been a rapid and cumulative national decline in self-reported health, which had been improving before then. By 2014 only 57.8% of the UK population were somewhat, mostly or completely satisfied with their health^[3].



These two graphs show the change in mortality rate for people dying between July 2014 and June 2015, as compared to the rate for the previous 12 months. Data is for all of England and Wales from the ONS mid year estimates published on June 23rd 2016. Change is measured as the percent point change in the rate of death in the first graph and as the relative change in death rates in the second graph.

In 2015 the UK suffered one of the largest rises in overall mortality measured since reliable annual records were first collected of the population in the late 1830s^[4]. The rise in mortality in 2015 was larger than any rise associated with influenza since at least 1951^[5]. However, the rise in 2015 does not have the characteristics of previous influenza epidemics, nor has influenza been demonstrated to have been responsible for more than a tiny proportion of the increases in deaths in 2012, 2013 or 2015. In contrast, austerity has been linked to the rising old age mortality^[6] and its timing coincides with the population reporting worse health and the rises in mortality over several years.

Future analysis may well also show the connections to be complex. Rising austerity among the young, including care home workers, could be associated with rising mortality in the old. Future analysis should also consider how many people would have lived healthier longer lives

had the mortality improvements enjoyed up until 2010 continued. Influenza is an easy scapegoat.

In answer to Gee Yen Shin's other points, he may not know that voter registration in the UK has been made far more difficult due to legislative changes since 2010; resulting in fewer eligible younger adults being able to vote. He may not know that the UK spends less on health per person than any other Western European country other than Greece and Italy. If he actually studied the references I gave in my original article he can learn more on these issues. However, I would suggest it is more urgent that he considers the references in this reply, and decides whether he wishes to stand by his statement that "pathogens like influenza virus were the major contributor to the rise in numbers of deaths in the year to June 2015". What is the evidence for this claim?

In 2014, Gee Yen Shin, as "a civil servant writing in support of this Government immigration policy" suggested that wealthy foreigners travelling to the UK to avail themselves of private healthcare were beneficial to the UK while providing free health care to immigrants no longer entitled to it was detrimental^[7]. This was in response to an article explaining the benefits of universal free state health care^[8]. Gee Yin Shin's views on immigration and the supposed benefits of private health are in the public domain. However, what we need to know is the extent to which his views on influenza have influenced his employer's early statements on why so many people have died. What evidence, if any, did he provide to his employer to back up his assertions that the major contribution to the mortality rise in the UK was "pathogens like influenza virus"? His views may be his own but they will have influenced the work he has carried out for his employer.

The last time there was a significant influenza outbreak in the UK geographers mapped it to show how it spread^[9]. The maps I have seen of the rise in mortality in 2015 bare no resemblance to how an infectious disease normally spreads. As the main causes of death were Alzheimer's and dementia this is hardly surprising. Of course we need to know why so many people suffering from those conditions died earlier in 2015. If it had been undetected flu there would have been a spatial pattern. Flu also tends not to have the highest relative effect on the very old as even small numbers of additional younger people dying have a bigger relative effect and that is what has happened in every other recorded flu outbreak.

Competing Interests: Danny Dorling is a member of Public Health England's Mortality Surveillance Advisory Group, which last met on July 6th 2016 and discussed the underlying excess mortality in 2015, how it may be related to issues of unsatisfactory secondary care, and that we do not understand why flu could have been related to so many deaths.

[1] Shin, G.Y. (2016) Rapid Response to Brexit: The decision of a divided country, *BMJ*, <http://www.bmj.com/content/354/bmj.i3697/rapid-responses>

[2] See Figure 2 of Fleming, D.M. and Elliot, A.J. (2008) Lessons from 40 years' surveillance of influenza in England and Wales, *Epidemiol. Infect.*, 136, 866–875. doi:10.1017/S0950268807009910

[3] Dorling, D. (2016) Austerity, Rapidly Worsening Public Health across the UK, and Brexit, *Political Insight Blog, Political Studies Association*, July 11th, <https://www.psa.ac.uk/insight-plus/blog/austerity-rapidly-worsening-public-health-across-uk-and-brexit-0>

[4] ONS (2015) *England and Wales Population Estimates 1838 to 2014*: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/adhocs/004358englandandwalespopulationestimates1838to2014>

[5] ONS (2015) *Vital Statistics: Population and Health Reference Tables*: <http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/vitalstatisticspopulationandhealthreferencetables>

[6] Loopstra, R., McKee, M., Katikireddi, S.V., Taylor-Robinson, D., Barr, B. and Stuckler, D. (2016) Austerity and old-age mortality in England: a longitudinal cross-local area analysis, 2007–2013, *J R Soc Med.*, 109(3): 109–116, doi: 10.1177/0141076816632215

[7] Shin, G.Y. (2014) We must recognise the actual and opportunity costs of treating immigrants in the NHS, *J R Soc Med.*, 107, 12, 466, <http://jrs.sagepub.com/content/107/12/466.1.full>

[8] Steele S, Stuckler D, McKee M, Pollock A. The Immigration Bill: extending charging regimes and scapegoating the vulnerable will pose risks to public health. *J R Soc Med* 2014; 107: 132–133, doi: 10.1177/0141076814526132

[9] Hunter J.M. and Young, J.C. (1971) Diffusion of Influenza in England and Wales, *Annals of the Association of American Geographers*, 61, 4, 637-653