

Recent Trends in Life Expectancy at Older Ages

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Following recent concern that life expectancy among the elderly may be declining in certain parts of England the government agency, Public Health England (PHE), has published an interim report titled 'Recent trends in life expectancy at older ages' (see <https://www.gov.uk/government/publications/life-expectancy-recent-trends-in-older-ages>).

During the past 12 to 18 months I have regularly circulated material relating to increased deaths, the links between deaths and medical admissions, and spatial spread of admissions and deaths across the UK and Europe to around 20 PHE managers plus other government agencies, none of which is cited in the PHE report. Based upon what the PHE report omits to say, a reappraisal is warranted.

Firstly, while this PHE report presents a comprehensive analysis of trends in life expectancy using calendar year data, *it fails to mention* that the observed trends for the *whole* of England and Europe may have arisen due to the *already reported* spatial spread of deaths across England and Europe.^{2,5,7,9,10-13} Also that the increased deaths leading to the observed reduction in life expectancy are known to be single-year-of-age specific,^{4,5,7,11,12} hence the observed curious differences in life expectancy for different ages seen in Tables 1 and 2. Also key to understanding potential mechanisms is the fact that the effects upon deaths and admissions are condition specific.^{3,5,6,8,10,12} In the absence of this vital information the reader is unable to reach an informed conclusion as to what is occurring. Perhaps the additional work promised in the PHE report will provide this required insight.

Table 1: Calendar years in England where life expectancy is below the trend line

Year	Males aged				Females aged			
	65	75	85	95	65	75	85	95
1982							Low	Low
1983				Low				
1985	Low	Low	Low	Low	Low	Low	Low	Low
1988			Low	Low			Low	Low
1989			Low	Low				
1991				Low	Low	Low	Low	Low
1993	Low	Low	Low	Low	Low	Low	Low	Low
1995	Low	Low	Low	Low	Low	Low	Low	Low
1996				Low				
1999				Low			Low	
2002				Low				
2003					Low	Low	Low	
2007				Low				Low
2008						Low	Low	
2010								Low
2012			Low	Low	Low	Low	Low	Low

The effects of age, location and time are not easily appreciated in the PHE report and Tables 1 and 2 therefore re-present data from the PHE report in a more easily understood format.

Firstly note the higher prevalence of instances of lower than expected life expectancy for females, which is an issue already highlighted to occur in medical admissions and deaths,¹³ and that the years where life expectancy is low corresponds with years already identified as abnormally high for deaths and medical admissions.^{2,5,7,9,11-13} The fact that spatial spread is behind the low life expectancy observed in the paired years for England in Table 1 is likewise not explained in the PHE report.

Prior to 2000 some of the events were intertwined with *large* influenza epidemics and at this point it is unknown if the low figures around 82/83 are solely due to influenza. It is now known that the 2010 event was far stronger in Australia and New Zealand (in preparation) but was far weaker and more sporadic in the UK and Europe (submitted). A further event appears to have initiated in 2014 with the characteristic spatial spread of deaths across England (submitted). Of equal importance is the fact the NHS staff sickness absence also shows spatial spread during the 2014 event. Clearly biological rather than policy or other factors are involved.

Turning to the situation in Europe Table 2 presents the position for life expectancy in 2012.

Table 2: Change in life expectancy (years) in 2012 for countries in Europe

Country	Males aged			Females aged		
	65	75	85	65	75	85
Austria				-0.4	-0.3	-0.5
Belgium	-0.3	-0.2	-0.4	-0.3	-0.3	-0.4
Bulgaria	-0.1		-0.2			-0.1
Croatia	-0.1	-0.1	-0.1	+0.1	+0.1	
Cyprus	-0.3		-0.1	+0.1		-0.1
Czech Republic	+0.1				-0.1	-0.2
Denmark	+0.2	+0.1	+0.1	+0.1	+0.1	+0.2
Estonia		+0.1	+0.2	+0.2	+0.2	+0.2
Finland	+0.1	+0.1		-0.1	-0.1	-0.1
France	-0.2	-0.1	-0.3	-0.4	-0.4	-0.4
Germany		+0.1			-0.1	-0.1
Greece	-0.1		+0.1	-0.2	-0.2	-0.2
Hungary		-0.3	-0.7	-0.2	-0.2	-0.4
Ireland	+0.1	+0.1	-0.1	+0.2	+0.1	
Italy			-0.1	-0.1	-0.2	-0.2
Latvia	+0.2		-0.4	-0.2	-0.3	-0.3
Lithuania	+0.1	+0.1			+0.1	-0.1
Luxembourg	+0.6	+0.6	+0.8	-0.2		-0.3
Malta	-0.1	-0.3	-0.9			+0.1
Netherlands	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3
Poland		-0.1	-0.1			-0.1
Portugal	-0.2	-0.2	-0.5	-0.3	-0.4	-0.5
Romania	-0.2	-0.3	-0.7			-0.1
Slovakia	+0.1		-0.2	+0.1		-0.1
Slovenia	+0.2	+0.1	-0.1		-0.1	+0.1
Spain	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3
Sweden		-0.1	-0.2	-0.2	-0.2	-0.2
UK		-0.1	-0.2	-0.2	-0.3	-0.3
EU	-0.1	-0.1	-0.1	-0.2	-0.1	-0.2

In Table 2 the change in life expectancy between 2011 and 2012 is presented within the PHE report rounded to one decimal place. Blank cells therefore have values less than ± 0.05 years.

The confused position regarding the position in 2012 in the PHE report is presented in a far simpler format in Table 2. The apparent patterns are easily explained when it is realised that spatial spread of deaths across Europe, a fact already documented, leads to the variable results when using calendar years – especially if the onset of increased deaths occurs partly in 2011 or late in 2012),¹³ and that the effects are both age and gender specific. The greater effect against females seen in Table 1 is replicated in Table 2, and is probably due to cardiovascular events, another fact already known and reported.¹⁰

While this report includes some excellent analysis, the question needs to be posed, is it concealing more than it actually reveals? A similar question was raised on previous attempts by PHE to ‘explain’ the higher deaths seen in the winter of 2012/13.¹

In conclusion, the omission of publically available (peer reviewed) background information limits the ability of the reader to understand what has been presented in the PHE report.

All research relating to the link between medical admissions and deaths can be viewed at:

<http://www.hcaf.biz/emergencyadmissions.html>

This work is based on a 22 year career both studying health care trends and advising health care organisations regarding their implications to capacity planning and financial risk.

References

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