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NHS sickness absence – the hidden message that no one is listening to

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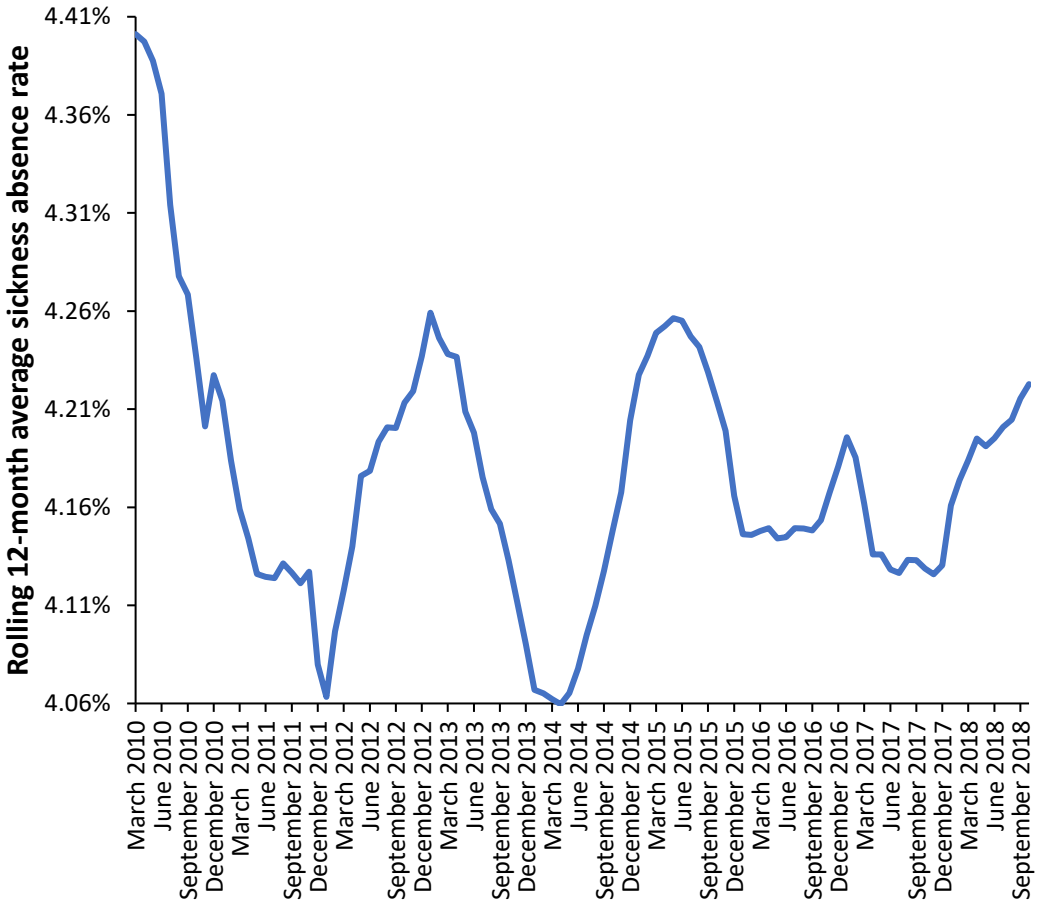
In 2014 NHS staff sickness absence was estimated to cost £1.65 billion (NHS Employers 2014). However, sickness absence shows curious undulations which have never been adequately explained. This is illustrated in Figure 1 which shows a rolling 12-month average of sickness absence for NHS staff in England. Monthly sickness absence data is from NHS Digital (2019). The 2014 statement by the NHS Employers organisation that sickness absence was declining (NHS Employers 2014), merely happened at a time when the rolling average had reached a temporary minimum.

Figure 1: Rolling 12-month average NHS sickness absence rates for England, 12-month period ending Mar-10 through to Oct-18



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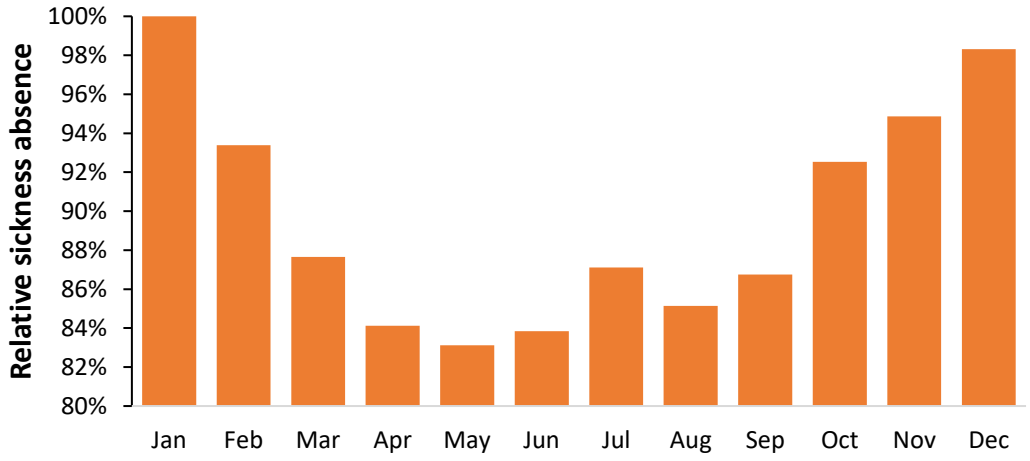
A rolling 12-month average of sickness absence has been used to remove the seasonal cycle in sickness absence, where absence is typically 17% lower in May than January (Figure 2) – based on a 9-year average of monthly data (NHS Digital 2019). The seasonal profile in Figure 2 has been dampened since there is a high baseline of long-term sickness absence, i.e. stress related illness, back pain and other injury at work, etc, contained in the trend.

Figure 2: Seasonal profile of sickness absence, monthly average 2009 to 2018



However, the curious saw-tooth patterns in Figure 1 remain as a testament to an underlying force which requires explanation. In a rolling average the saw-tooth patterns are indicative of on/off switching. In the upward part of a rolling average absence has suddenly jumped to high, while in the downward part it has suddenly switch to low, i.e. positive slope equals switch-on while negative slope equals switch-off.

One possible explanation is the curious observation that a rolling 12-month total of deaths in England shows great similarity to Figure 1. Using a rolling 12-month total of deaths in England from Office for National Statistics (ONS) monthly data (ONS 2019) shows that a minimum of deaths (449,929) occurs in January 2012, a maximum (479,570) in April 2013 followed by a minimum (453,993) again in May 2014. Maximum deaths (499,295) then occur around June 2015 to November 2015. After this, deaths do not return to a minimum as they did in 2014 but reach an intermediate minimum in February 2016 after which they rise again. This is a mirror image of the sickness absence trends in Figure 1.

To understand these hidden patterns, Figure 3 expands the view of sickness absence to thirteen regions across England where evidence for variable timing and magnitude can be seen. For example, note that sickness absence in South London is unaffected by the 2014 event while the North West of England and North-West London are especially affected in the 2014 event. North-West London does not experience the reduction seen after 2010 and Yorkshire and the Humber are in switch-off during the event commencing in 2017. The trend for the whole of England is therefore a composite of the individual parts. Variable timing in deaths is likewise a feature of regional deaths data (ONS 2019).

As a suggestion, any agent capable of causing typically younger NHS staff to require sickness absence could potentially cause death in older members of the population. In this respect the average age of NHS staff is 43, most common age being 45 to 54 (NHS Employers 2016), while the average age for death is 78, most common age being 86 (ONS 2018).

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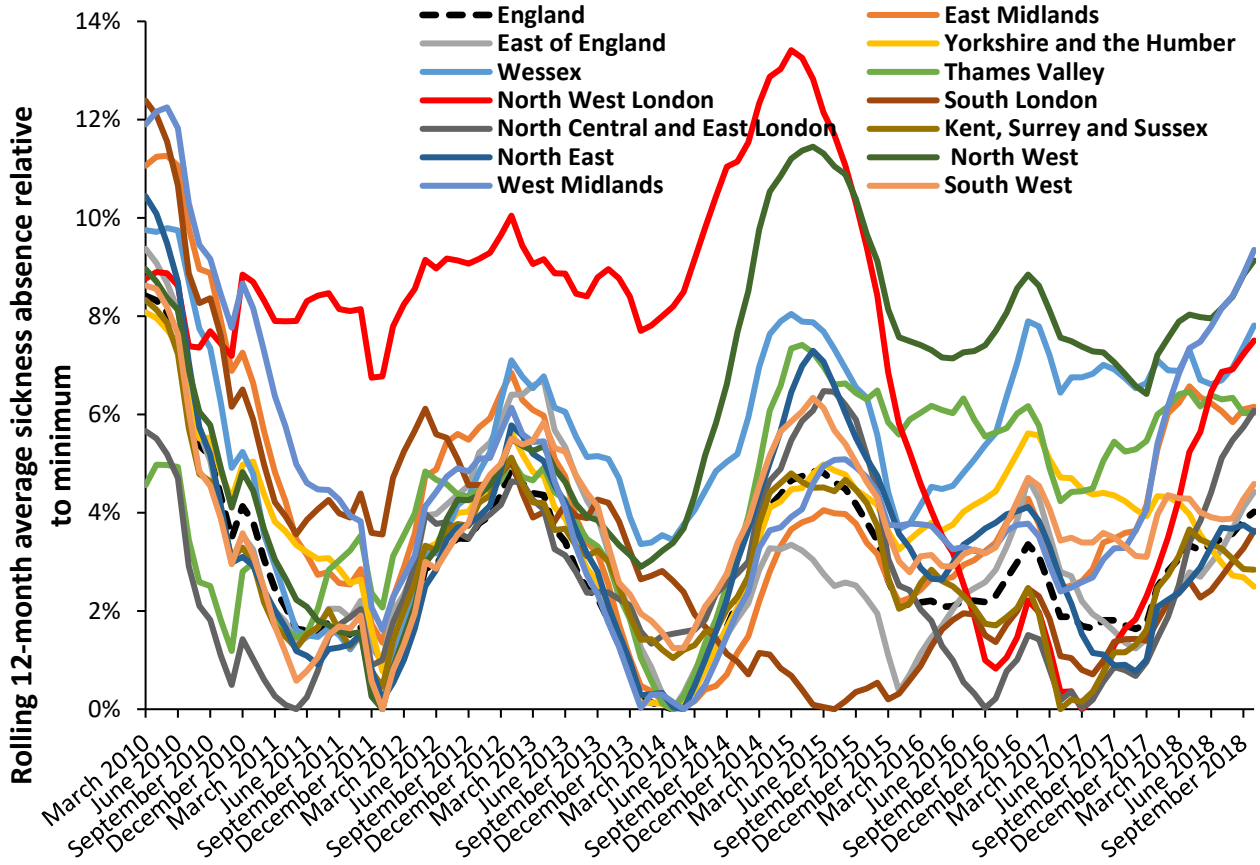
Figure 3: Trends in rolling 12-month average sickness absence for various regions in England, all relative to the point of minimum absence in each region



Similar on/off patterns for NHS total costs, hospital bed occupancy, GP referral, A&E attendance, emergency admission and gender ratio at birth have been noted in previous studies (see http://www.hcaf.biz/2010/Publications_Full.pdf).

Indeed ,researchers with a wider interest in sickness absence need to be aware that time and place (spatiotemporal) patterns are concealed in the data.

It would seem sensible to start looking for whatever agent is triggering this on/off behaviour. If the agent can make people fall ill and kill others then it is probably very important.

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