

## Sickness absence trends for the Department for Work & Pensions (England) follow identical hidden on/off patterns to those seen for NHS staff

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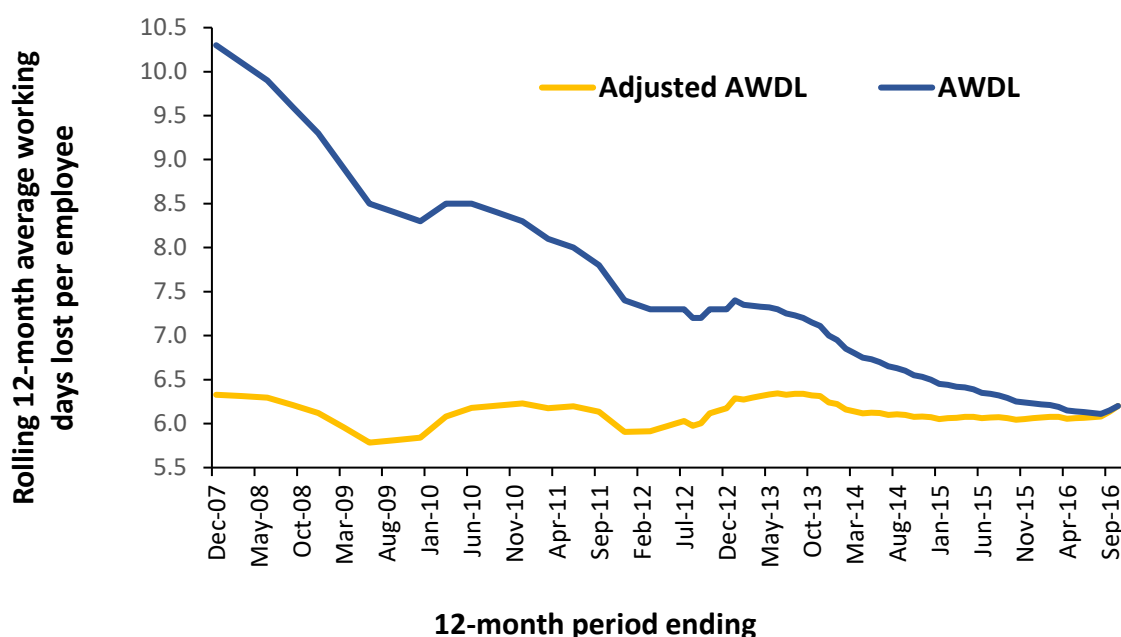
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Part of a longer series available at [http://www.hcaf.biz/2010/Publications\\_Full.pdf](http://www.hcaf.biz/2010/Publications_Full.pdf)

For the calendar year 2007 sickness absence among staff working for the Department for Work & Pensions (England) was very high at 10.3 average days lost per employee (AWDL) per annum (DWP 2016). At around 253 working days per annum this represents a 4.1% sickness absence rate. DWP data is quarterly up to March 2012 and monthly from April 2012.

To reduce this high absence rate, the DWP instituted a range of measures and by October 2016 the absence rate had fallen by 40% (DWP 2016). This trend is shown in Figure 1. As can be seen there are unexplained undulations in the trend which are partly obscured by the downward trend. These undulations appear to match with those previously reported for NHS staff in England (Jones 2019).

**Figure 1: Trend in rolling 12-month working days lost per employee at the DWP, 2007 to 2016**

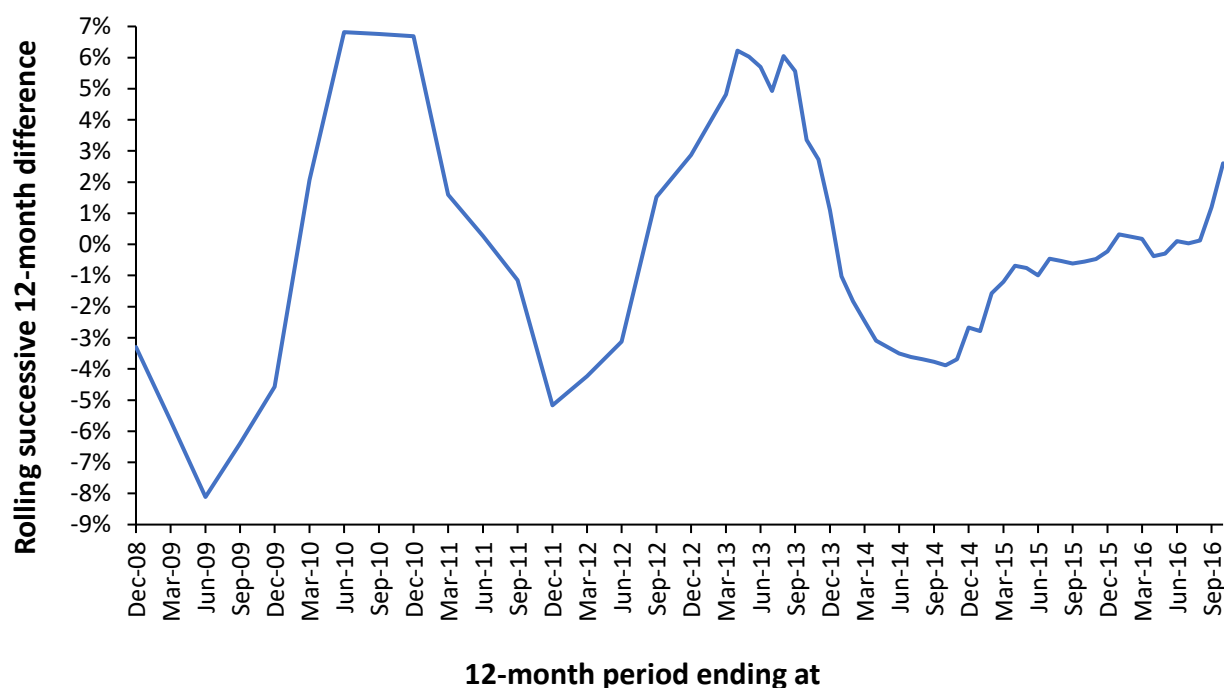


To reveal the full extent of these undulations the DWP data was first adjusted to an October 2016 equivalent by adding a polynomial curve fit to the trend such that  $AWDL = 9.9769 - 0.0575 \times n + 0.0002 \times n^2$ , where  $n$  = number of months from December 2007. The ratio of the trend to October 2016 was then used to adjust all data to the October 2016 equivalent. This is shown as the adjusted AWDL line in Figure 1 where the extent of the undulations become more apparent.

The DWP using a rolling 12-month average to remove the underlying seasonal trends, which is the same as the analysis applied to NHS data (Jones 2019).

Finally, a successive 12-month difference was applied to the data to reveal the magnitude of the on/off switching hidden in the trends. Hence Figure 2 starts with the difference in adjusted AWDL for the 12-months ending December 2008 versus December 2007.

**Figure 2: Rolling successive 12-month difference in adjusted AWDL. First data point is the difference between year ending December 2008 versus year ending December 2007, move forward one period and repeat the calculation.**



As can be seen in Figure 2 as series of peaks/troughs are revealed which indicate on/off switching. At the trough 12-month sickness absence is at its minimum level, switch-on then occurs and absence rate *immediately* jumps, i.e. a step-change, to a new higher level whose magnitude is revealed 12-months later at the peak.

Hence Figure 2 reveals the tail end of a switch-on event which commenced somewhere around June 2007, i.e. June 2007 switch-on creates a peak in the rolling average at June 2008, followed by switch-off which creates the trough at June 2009. The estimated magnitude of the 2007 event is around +8%.

Another switch-on commences shortly after June 2009 leading to the peak somewhere between June 2010 and December 2010 (partly obscured by the quarterly data only available prior to April 2012). The magnitude of this event is probably somewhere around +7% to +8%.

Another switch-on starts somewhere after December 2011 with maximum amplitude around +6.2%. Another event commences around the end of October 2014 which shows no switch-off. See comments regarding trends in deaths (all-cause mortality) in the previous summary (Jones 2019), and then another switch-on after August 2016.

As has been established previously the shape of the switch-on/off patterns are likely to be determined by transmission along smaller social networks (Jones 2015). In this respect the DWP data will be the composite picture of where DWP staff are located in offices in England and will mainly reflect those locations where there is the greatest concentration of staff and associated social networks. See [http://www.hcaf.biz/2010/Publications\\_Full.pdf](http://www.hcaf.biz/2010/Publications_Full.pdf) for additional studies regarding the effects of these events on deaths, medical admissions, GP referrals, A&E attendances and the gender ratio at birth.

## Conclusions

A new kind of infectious event is strongly implicated in this curious behaviour of sickness absence in both DWP and NHS staff.

It would seem prudent for Public Health England and NHS England/Improvement to initiate urgent investigations.

**It is highly likely that the NHS is being blamed for factors over which it has absolutely no control.**

## References

Department for Work & Pensions (2016) Freedom of Information Request VTR 4436, 7<sup>th</sup> December 2016.

Jones R (2015) Simulated rectangular wave infectious-like events replicate the diversity of time-profiles observed in real-world running 12-month totals of admissions or deaths. FGNAMB 1(3): 78-79. doi: 10.15761/FGNAMB.1000114

Jones R (2019) NHS sickness absence – the hidden message that no one is listening to. Healthcare Analysis & Forecasting DOI: DOI: 10.13140/RG.2.2.13996.31365