



## Friday Report: Issue 73

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**Covid-19 Actuaries Response Group – Learn. Share. Educate. Influence.**

Covid-19 is still among the most important health topics for scientific papers and articles. The Covid-19 Actuaries Response Group continues to focus on important Covid-related topics. We produce an update on the last Friday of every month with a summary of key papers, articles and data.

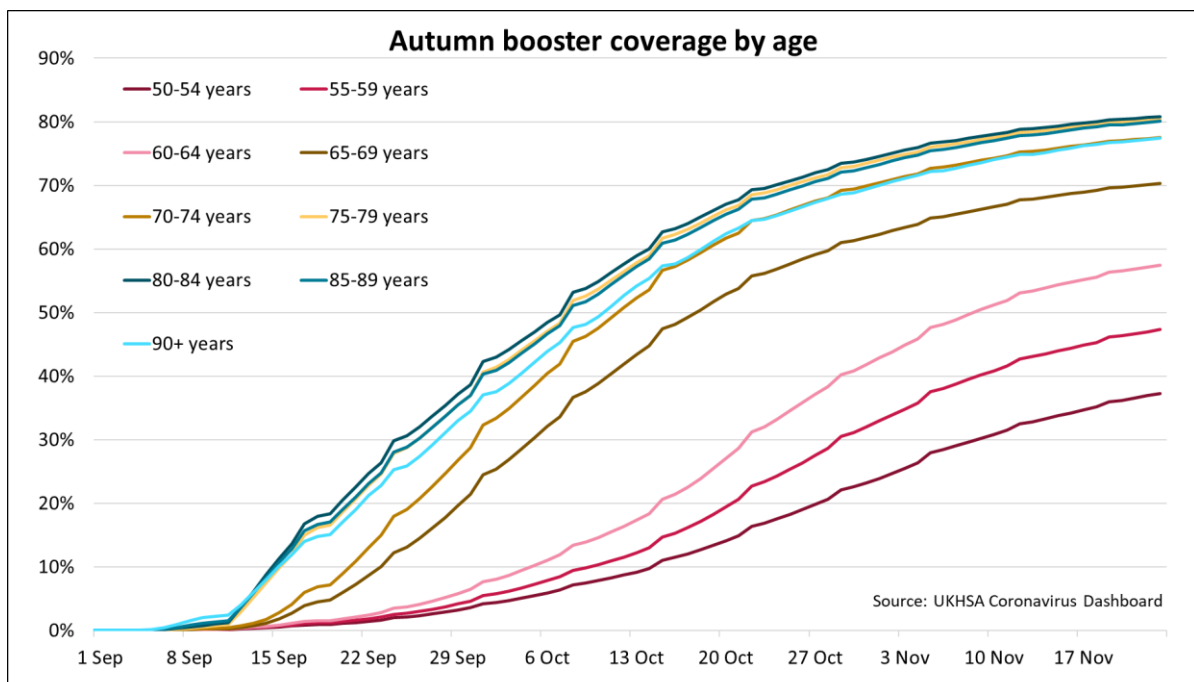
### Vaccines

#### Autumn Booster Progress [\(link\)](#)

The rate of vaccination has now slowed down markedly with just under 14m over-50s boosted. Around 60% of the population. In the last week, just 0.5m were added to the total.

By age, there's a marked contrast between the oldest age groups, where around 80% have come forward – a very similar percentage to those who came forward for their Spring booster – and the younger age groups. Between ages 50 and 54, just 37% have come forward, with slow progress over the last week, suggesting a total close to 40% is likely to be achieved.

Thus, over 9m people over 50 have not yet had their autumn booster, whether due to apathy, accessibility, or other reasons. With yet another variant becoming dominant (see below), it is clear that many people are not as protected as they could be as we enter the winter period.



## Bivalent Vaccine Effectiveness ([Pfizer link](#)) ([Moderna link](#))

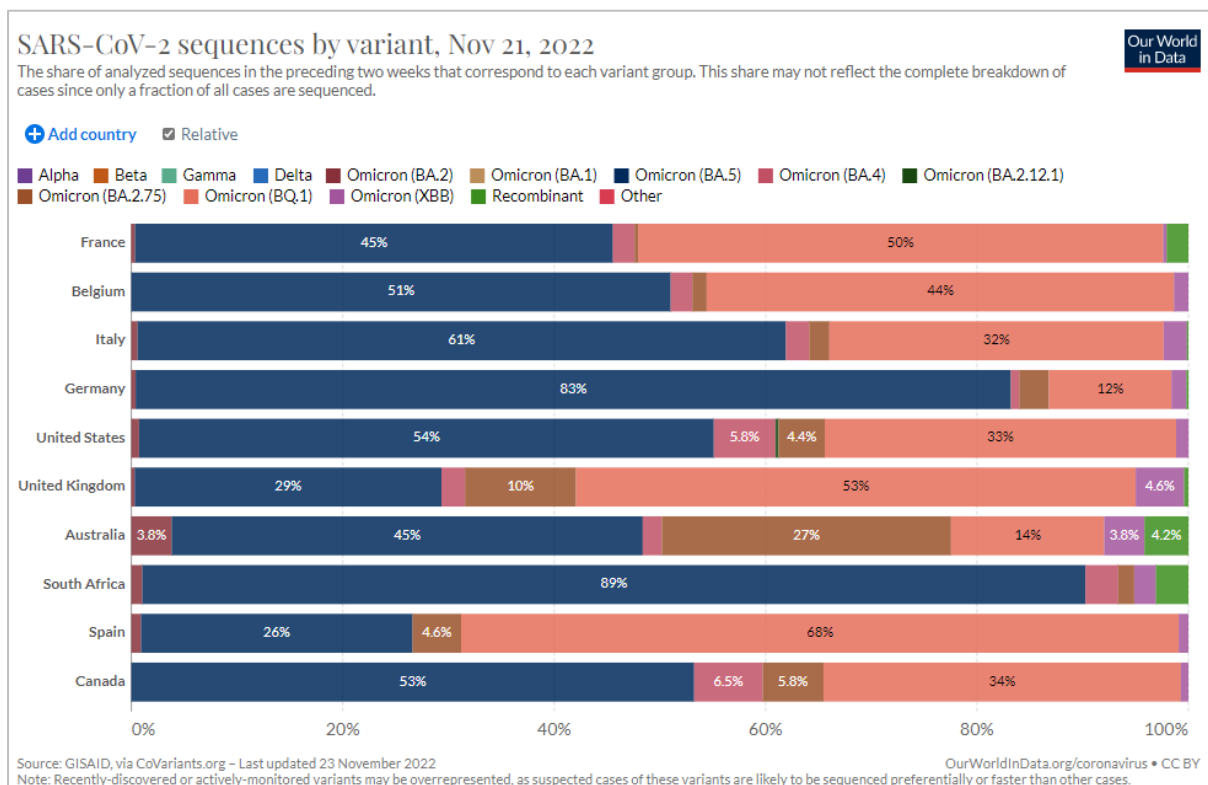
There continues to be a flow of studies looking at the effectiveness of recent bivalent boosters in terms of an improved neutralising antibody response.

The Moderna study of its latest vaccine (mRNA 173.222) focuses on efficacy against BA.4/BA.5. Encouragingly it also notes neutralising effects against the emerging BQ.1.1, which is rapidly becoming dominant in the UK superseding BA.5. It does note a five-fold drop in titers when compared with BA.4/BA.5, but still describes the neutralising activity as “robust”.

Meanwhile, Pfizer has released the findings of a study of its latest bivalent booster targeted at BA.4/BA.5. Like Moderna it reports significantly higher increases in neutralising titers when compared with the original monovalent version of BNT162b2. Again, it notes that this effect is also seen in respect of the BQ.1.1 variant, where a 1.8-fold rise in the mean neutralizing titer becomes 8.7 with the bivalent version.

## Variants

GISAID data is captured by Our World in Data ([link](#)) and shows that BA.5 is being replaced as the dominant variant, largely by BQ.1.

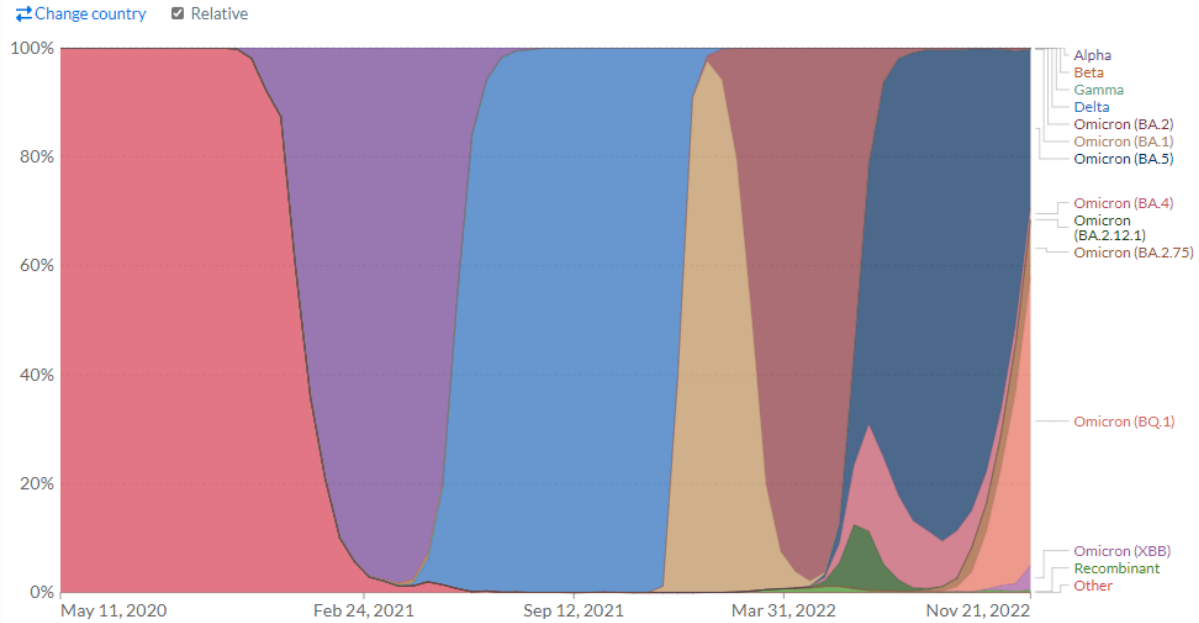


Note that countries may use targetted sequencing so the contribution of each variant may not necessarily reflect community prevalence.

If we look at a time series for the UK, we can see that BQ.1 is now the dominant variant. ([link](#))

## SARS-CoV-2 variants in analyzed sequences, United Kingdom

The number of analyzed sequences in the preceding two weeks that correspond to each variant group. This number may not reflect the complete breakdown of cases since only a fraction of all cases are sequenced.

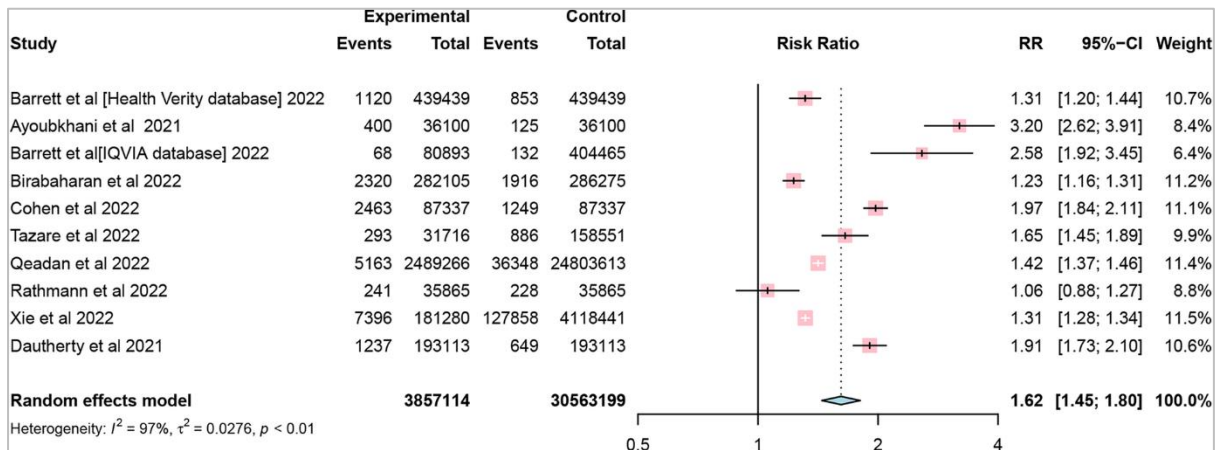


Source: GISAID, via CoVariants.org - Last updated 23 November 2022  
 OurWorldInData.org/coronavirus • CC BY  
 Note: Recently-discovered or actively-monitored variants may be overrepresented, as suspected cases of these variants are likely to be sequenced preferentially or faster than other cases.

## Medical

### Risk of newly diagnosed diabetes after COVID-19 (link)

A meta-analysis of nine studies with 40 million participants has estimated the relative risk of diabetes diagnosis after COVID-19 to be 1.62 [1.45–1.80].



This relative risk is similar across all age ranges studied. The risk of diabetes increased to a lesser extent if patients with COVID-19 infection are compared to patients with general upper respiratory tract infections. The risk of diabetes increased with severity of COVID-19 infection.

Studies with follow-up of less than 3 months showed a higher relative risk of diabetes diagnosis among COVID-19 patients which may suggest that the relative risk of a new diabetes diagnosis is higher in the first 3 months after infection.

A separate matched cohort study found that among children aged 18 or younger, SARS-CoV-2 infection was associated with a doubling of the risk of diagnosis of Type 1 diabetes, compared to matched controls who had non-SARS-CoV-2 respiratory infection during the study period. ([link](#))

## Long COVID

### Long COVID in South Africa... ([link](#))

A pre-print study of Post Covid Condition (PCC) in South Africa found that around 60% of Covid patients hospitalised during the Beta and Delta waves still experienced ongoing symptoms 6 months after hospital discharge. 18.5% of patients hospitalised during the Omicron wave still had ongoing symptoms after 6 months.

The study also compared risk of ongoing Covid symptoms by the severity of the initial Covid infection and found that the risk increased with severity of the initial infection. Those requiring oxygen or being admitted to ICU were around 2.5x more likely to have ongoing symptoms compared with symptomatic, non-hospitalised Covid patients.

Severity	Relative risk of PCC, adjusted for other factors	Persistent symptoms n/N (%)
Non-hospitalised asymptomatic	Reference	9/162 (5.56)
Non-hospitalised symptomatic	2.32 (1.15 – 4.70)	190/912 (20.83)
Hospitalised (no oxygen)	3.96 (1.90 – 8.24)	105/614 (17.10)
Hospitalised (oxygen therapy)	6.01 (2.94 – 12.29)	335/656 (51.07)
Hospitalised (ventilated or ICU)	5.78 (2.87 – 11.66)	787/1,356 (58.04)

In addition to variant and Covid severity, other risk factors for PCC included older age, female sex, non-black race, the presence of a comorbidity and number of acute COVID-19 symptoms. There was no evidence of an association between PCC and vaccination status.

These results show a higher prevalence of Long Covid that was seen in the COVID in Scotland Study shared in last month's Friday Report ([link](#)). In that study the majority of participants were not hospitalised and 6% had not yet recovered between 6 and 18 months after Covid infection. There are likely to be many differences between the populations in these two studies.

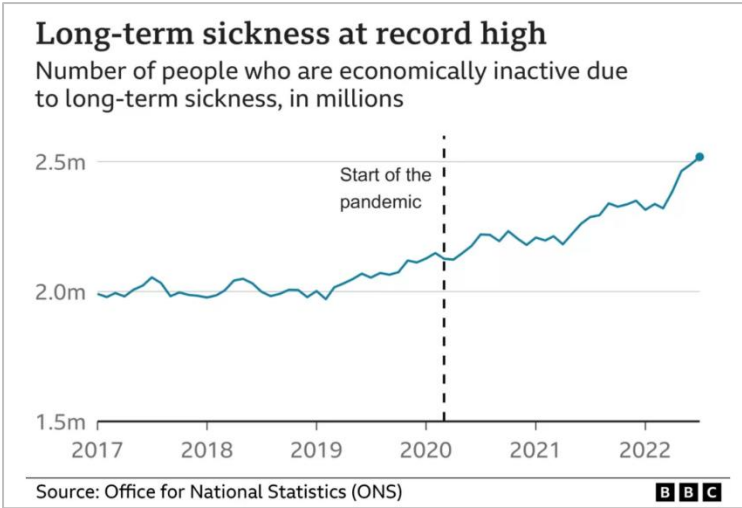
### ...and in Ireland... ([link](#))

A BBC report from Ireland referencing a report that nearly 90% of those living with Long COVID have yet to return to their previous level of health. (Though it might be noted that, by definition, you would not expect someone classed as living with Long COVID to be at their previous level of health.)

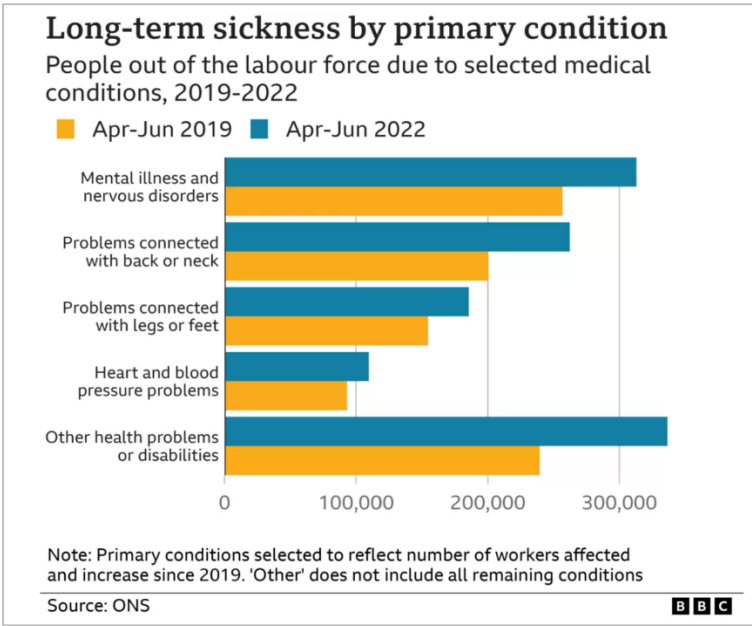
An extensive list of ongoing symptoms is noted, but fatigue is highlighted as the most common. Nearly 40% said their ability to work was limited, with 16% saying that they were currently not able to work and receiving social security payments.

### ... and Long-term Sickness in the UK

The BBC also reports on the rise of long-term sickness in recent years. Levels were already rising immediately pre-pandemic, have continued to do so since the onset of COVID, but have spiked sharply upwards in recent months.



Long COVID isn't the only cause of the increase, although it will no doubt be a contributory factor. Though as the graph below shows, many causes are seeing increases. Indirect impacts of the pandemic, such as the sharp increase in waiting lists for elective surgery will also be a driver behind the growth. We discussed the pandemic's indirect impacts in an earlier bulletin ([link](#)).



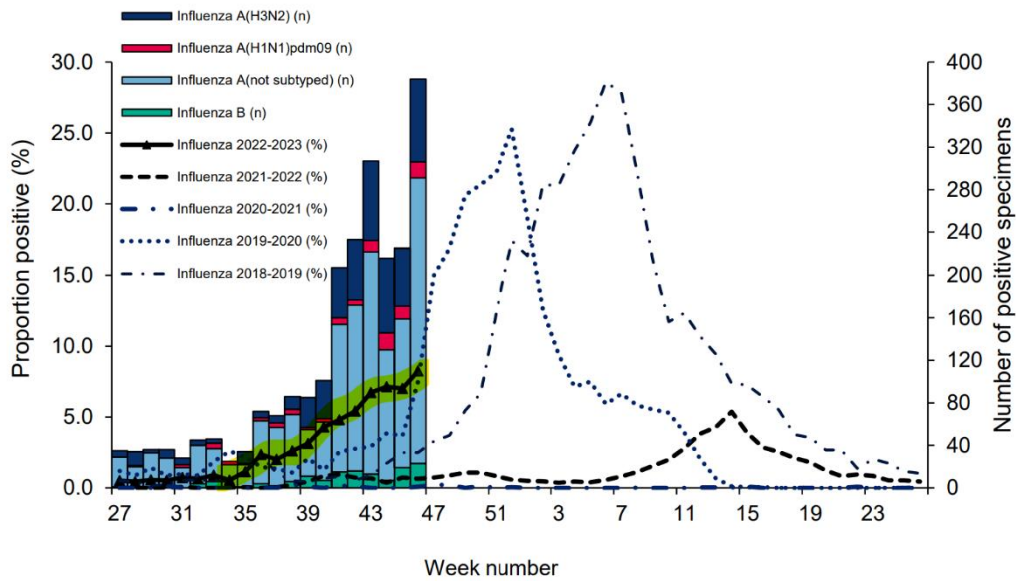
## Flu

We don't plan on extending Friday Report's remit to cover flu on a regular basis but the interaction with flu in terms of the pressures on the NHS, and the increased risk to people who have both conditions means that monitoring flu levels is likely to be highly relevant over the winter months.

### Flu Prevalence ([link](#))

UKHSA's weekly surveillance report covers both flu and COVID and has reported an early start to the flu season this year.

**Figure 10: Respiratory DataMart samples positive for influenza and weekly positivity (%) for influenza, England**



If we focus on the yellow highlighted line for 2022/23, we can see how the proportion of positive samples in recent weeks has been well ahead of pre-pandemic years. The chart also shows that in 2020/21 flu season didn't happen at all, due to social distancing, and there was a relatively mild and late season last year. Therefore, this would appear to be the first winter when the health service has to contend with both a flu surge and COVID simultaneously.

Take-up of the flu vaccine in the 65+ age group is consistent with last year, as it is for pregnant women and for those in clinical risk groups. However, it is lower for the toddler age group.

**Universal Flu Vaccine [\(link\)](#)**

Finally on the subject of flu, the BBC also reports the current research and development of an mRNA flu vaccine that could be instrumental in protecting populations against a future flu pandemic. It is thought likely that any strain responsible for a pandemic would be resistant to existing flu vaccines, whereas this vaccine, which contains recognisable bits of all 20 known subtypes of types A and B influenza, is considered likely to teach the immune system to fight any pandemic strain.

**Combined COVID and Flu Test [\(link\)](#)**

The BBC reported this month on the first combined COVID and flu lateral flow test to be approved for use in the UK.

Using a nasal sample, the test returns both results within 10 minutes.

The flu test covers both the A and B types, indicating which is present with an additional positive line.

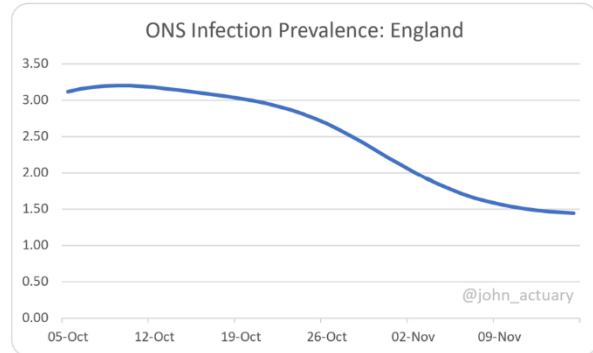
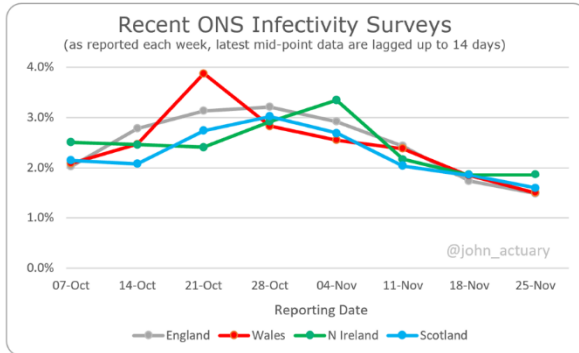
The company, SureScreen, hopes the product will be taken up by hospitals and care homes.



## Data

### ONS Infection Study

Since our last report, levels of infection across the UK have broadly halved to between 1.5% and 1.9%. But whilst this week's update showed further small falls in three of the four nations, there's a clear sign of levelling off in England, as can be seen from the daily estimates (below right).

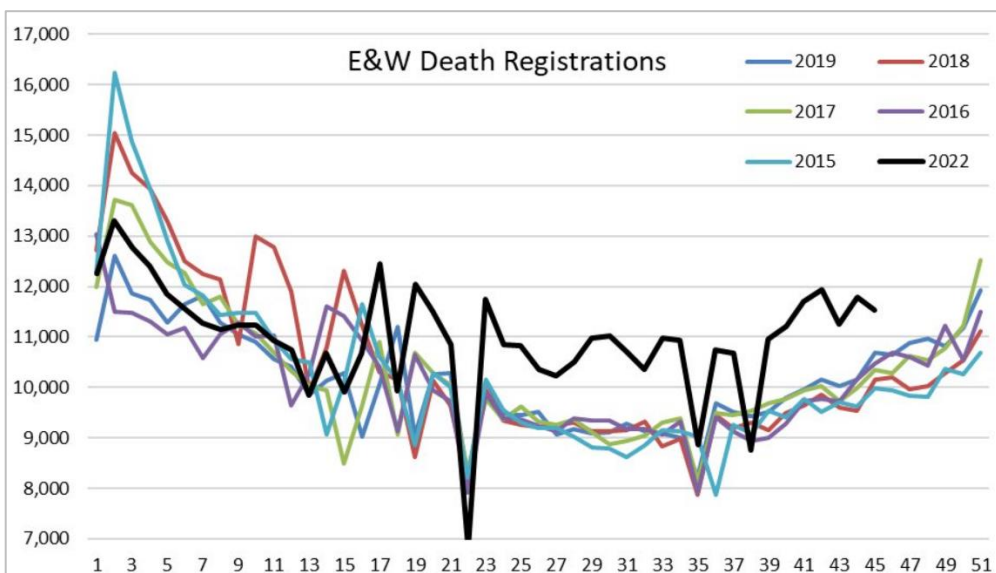


### Excess Mortality Remains High

([link](https://www.actuaries.org.uk/system/files/field/document/Mortality_summary_pandemic_monitor_Week_37_2022_v01_2022-09-27.pdf))[https://www.actuaries.org.uk/system/files/field/document/Mortality\\_summary\\_pandemic\\_monitor\\_Week\\_37\\_2022\\_v01\\_2022-09-27.pdf](https://www.actuaries.org.uk/system/files/field/document/Mortality_summary_pandemic_monitor_Week_37_2022_v01_2022-09-27.pdf)

We've reported in recent months on the levels of high excess mortality seen over the summer. The latest four weeks since our last report continue to show the same trend.

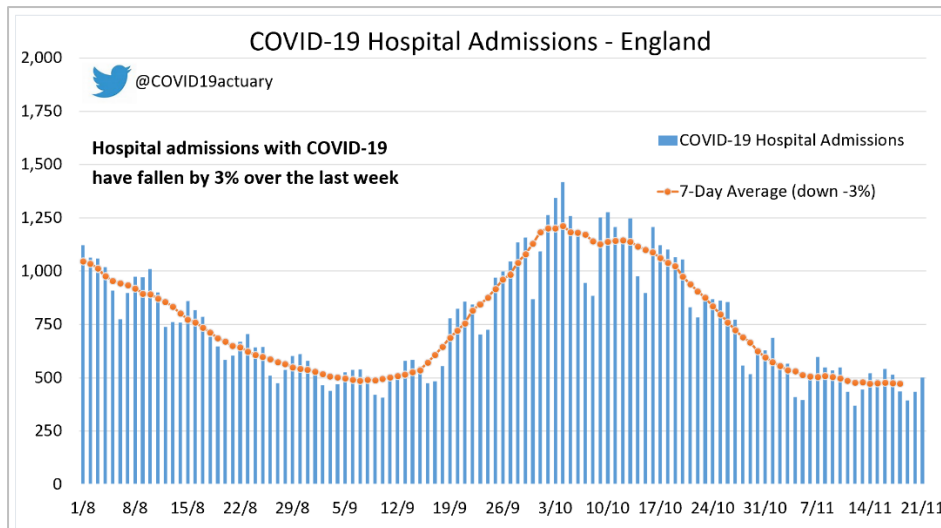
Whilst we generally prefer to use age-standardised mortality, the unusual excess of the last six months is clearly visualised here in a chart ([link](#)) which compares death registration counts to recent prepandemic years.



On the age-standardised basis, according to the CMI, the total excess over the last four weeks has been 9%, of which around two-thirds can be attributed to registrations where COVID was mentioned on the death certificate, with continuing debate over the causes of the residual excess.

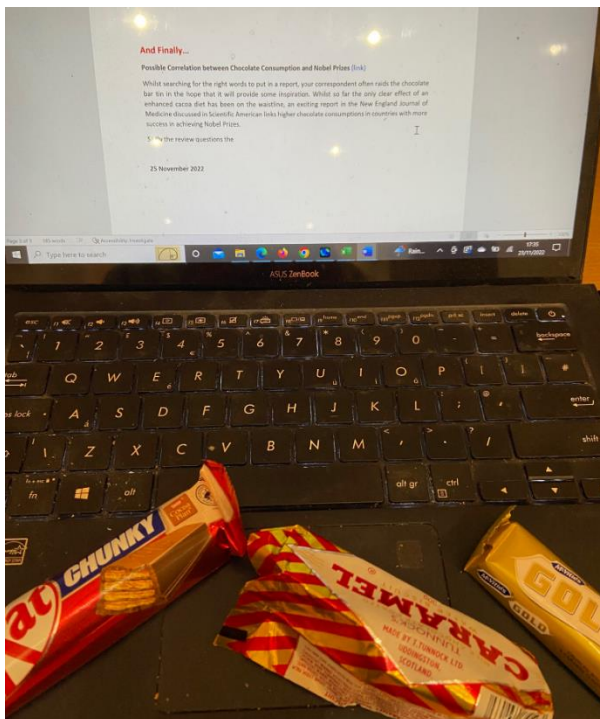
## Hospital Statistics

The recent fall in admissions appears to have run its course, with a levelling off over the last week at a very similar level to the last trough in early September. London, the South East and the Midlands saw an increase in admissions in the last week. With the health system already under huge pressure any increase in hospital admissions can only be unwelcome and detrimental to overall patient care.



## And Finally...

### Possible Correlation between Chocolate Consumption and Nobel Prizes [\(link\)](#)



Whilst searching for the right words to put in a report, your correspondent often raids the chocolate bar tin in the hope that it will provide some inspiration. Whilst so far the only clear effect of an enhanced cacao diet has been on his waistline, an exciting report in the New England Journal of Medicine discussed in Scientific American links higher chocolate consumptions in countries with more success in achieving Nobel Prizes.

Whilst recognising that this research is no picnic, sadly the review suggests that the methods used and conclusions drawn are rather flakey, and decides to mull it over further following consumption of a Toblerone to boost his cognitive function, an approach your author is all too happy to follow when researching this topic.

25 November 2022