Covid-19: Data pack for schools

Colin Cox, Director of Public Health

8 June 2020

Dear colleague,

This data pack comes as a supplement to the letter from John Readman, Dan Barton and myself earlier today, in which we committed to getting you regular information to support your planning. This initial paper draws together and provides commentary on some of the key statistics that are informing my thinking about the approach being taken to releasing the lockdown at a local level, in schools and more widely. In future installments I will add further data and analysis. I would be happy to hear from you about what additional data you would find helpful, and if it is available (and meaningful) I will add it to the pack.

In presenting these data, it is important to note that the data flows regarding Covid-19 are inevitably imperfect. We have only recently begun to receive testing data that are sufficiently reliable to be meaningful, and even more recently any sort of breakdown at sub-District level. Data from the national Test and Trace system are still scant, though likely to improve in the coming weeks. And much of the data that are more solid (such as deaths data) are very useful in looking at the past, but may be less so in planning for the future. However the data systems and the integration between national and local systems are improving all the time, and as these get better the information I am able to offer to you will also improve.

Yours sincerely,

R value

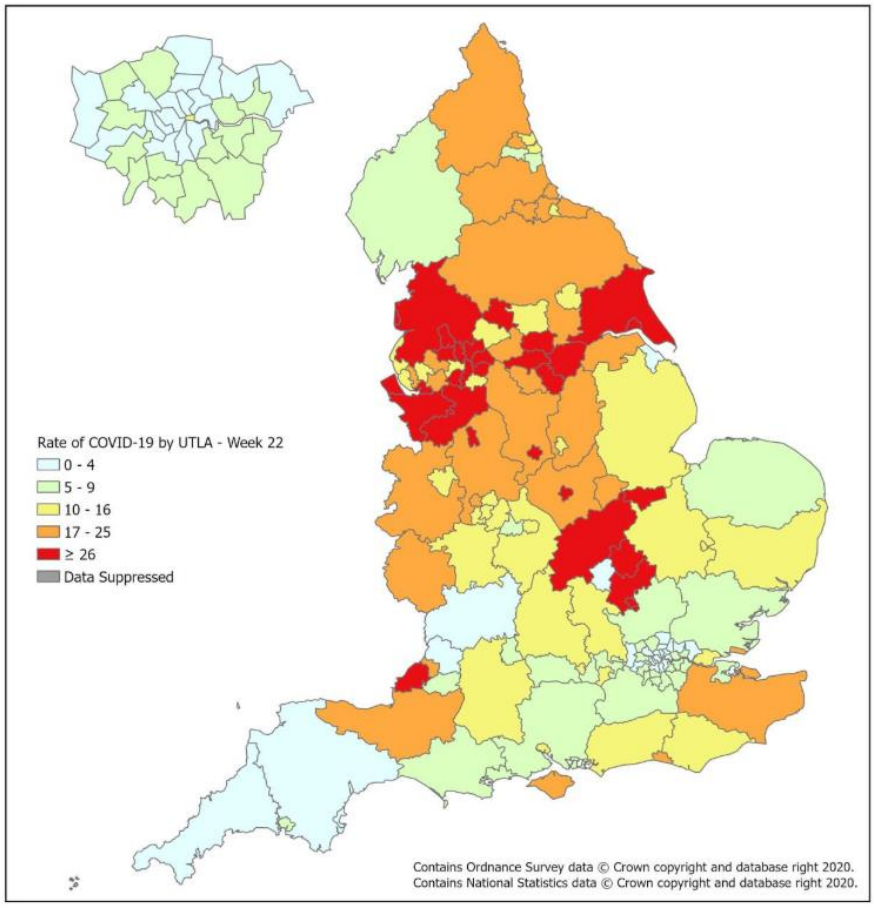
The Reproduction Ratio (R) is one way of describing the spread of Covid-19. It is an estimate of the average number of people infected by every positive case. In broad terms, if R>1 the epidemic is growing; if R<1 it is declining. The policy goal is therefore to keep R below 1.

It is important to note that R is not something that can be measured directly. It is a modelled estimate based on a range of other data. As such it is presented as an average estimate with confidence intervals indicating 95% statistical probability that the true figure lies within the range of the confidence intervals. As the population gets smaller, and as the number of positive tests goes down, these confidence intervals get wider. Because of this it is not advisable to rely on R values at lower than Regional level. Any calculation of R for Cumbria, and even more so for the District level, would be so uncertain that it would broadly be meaningless as a point estimate.

On Friday 5 June 2020 Regional estimates of the Reproduction Ratio for Covid-19 were published. These data estimated the R for the North West to be 1.01 (95% confidence interval 0.83 – 1.18).

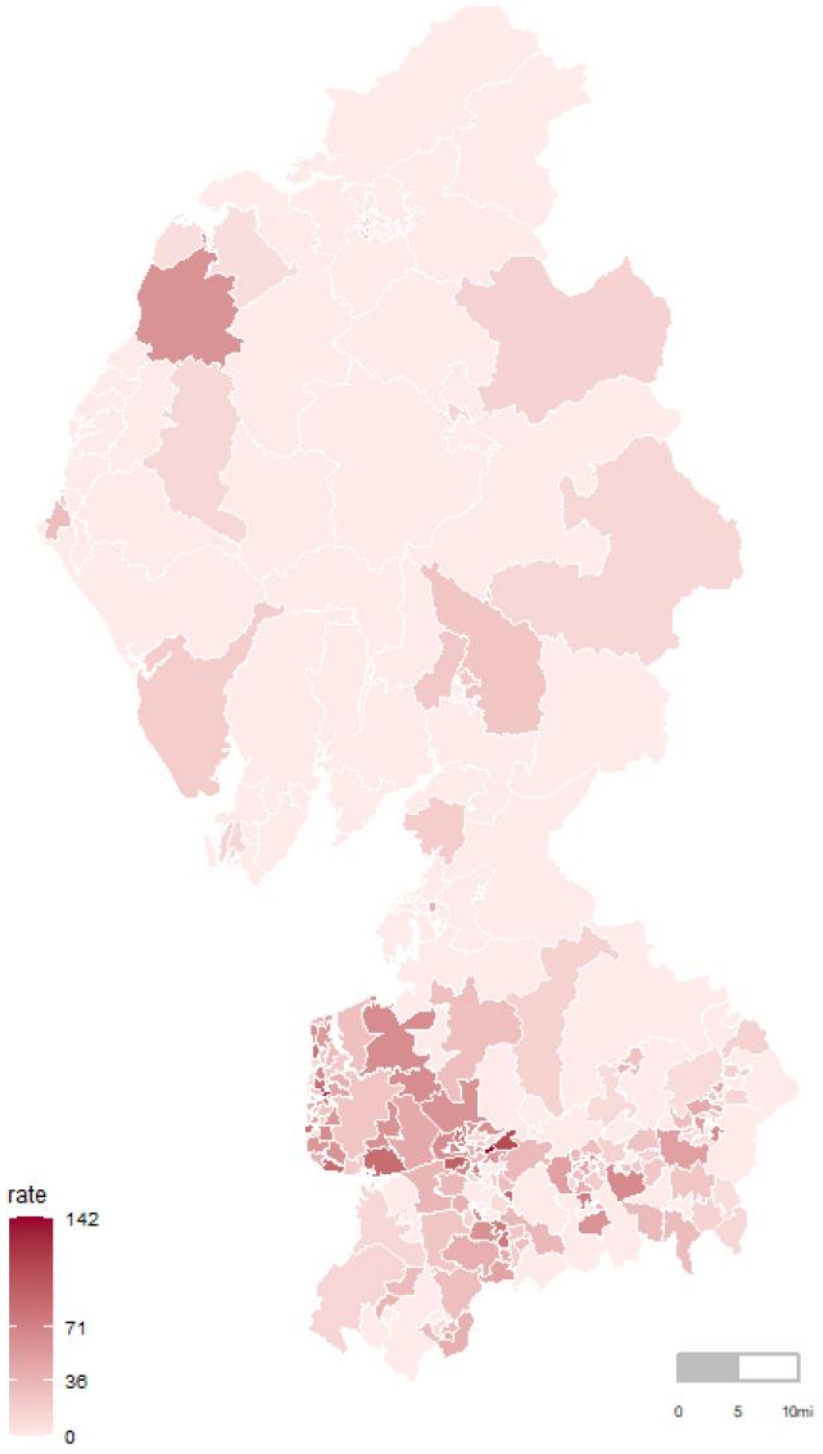
Weekly rate of COVID-19 cases per 100,000 tested

While this stated value of R has understandably caused a degree of anxiety, it does not necessarily represent the full picture across the whole of the North West. A second source of data (and one used in the calculation of R) is the rate of postive tests. The latest available data (week 22 – week commencing 25 May 2020) are illustrated in the map below. This suggests that the increase in the Regional R to a level fractionally greater than 1 is not being driven by patterns in Cumbria, where the rate of postive cases is now relatively low.



Please note that these data are not the same as the total rate of positive cases per 100,000 population as given by District on the national dashboard (https://coronavirus.data.gov.uk/#category=utlas&map=rate). Those data are the cumulative infection rates within the population over the course of the epidemic as a whole, whereas the data above are the rates of positive tests out of all the tests taken during a single week and are a valuable indicator of the more recent rate of transmission.

These data are also now available at Middle Super Output Area level, as in the Cumbria and Lancashire map below. Note that at this level the number of cases in each area is very low so random variation is entirely to be expected. While we do not currently have the detailed data behind the map below, on the basis of the total number of cases in Cumbria during week 22 (20 in total) it is likely that all the areas in the palest colour had no new cases that week, while any areas in a slightly darker colour will have had a very small number of cases indeed.



Through the new local Test and Trace and outbreak control system, the Public Health Team is reviewing these data routinely in order to identify and respond to things that appear to be genuine outbreaks rather than random fluctuations in the very small numbers of cases now being recorded.

Test and Trace data

At present the national Test and Trace data are only being produced at Cumbria level and the only data available are the total number of people going through the system and the total number of contacts identified. Consequently there is little in those data at the moment that would be valuable

for schools. It is intended that these data will start to be released at much more local level in the near future.

The local test and trace system began on 1 June and as such there is insufficient data in the system yet to reveal anything meaningful. As more data is collected these will be incorporated in future reports.

Mortality data

Data on the number of deaths by definition are quite backwards-looking, as it can take several weeks between contracting the infection and a person dying from it. So mortality data can give a very valuable picture of the progress of the epidemic overall, but may not be so useful in informing schools' decision making. However the following graph sets out the overall mortality picture on the basis of the reporting of deaths to local Registrars. These data include deaths registered up to 4 June 2020.