Covid-19: Weekly Situation Report

Colin Cox, Director of Public Health

30 June 2020

Note

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 improving; we now have access to postcode-level data but have not yet had the chance to analyse these. And much of the data that are more solid (such as deaths data) are very useful in looking at the past, but are not helpful in tracking the current patterns of infection in order to respond to outbreaks. However the data systems and the integration between national and local systems are improving all the time, and as these get better the information we are able to present will also improve.

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

R value and growth rate

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, and there are many models for how to calculate it. As such multiple figures for R can be calculated, and they are 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.

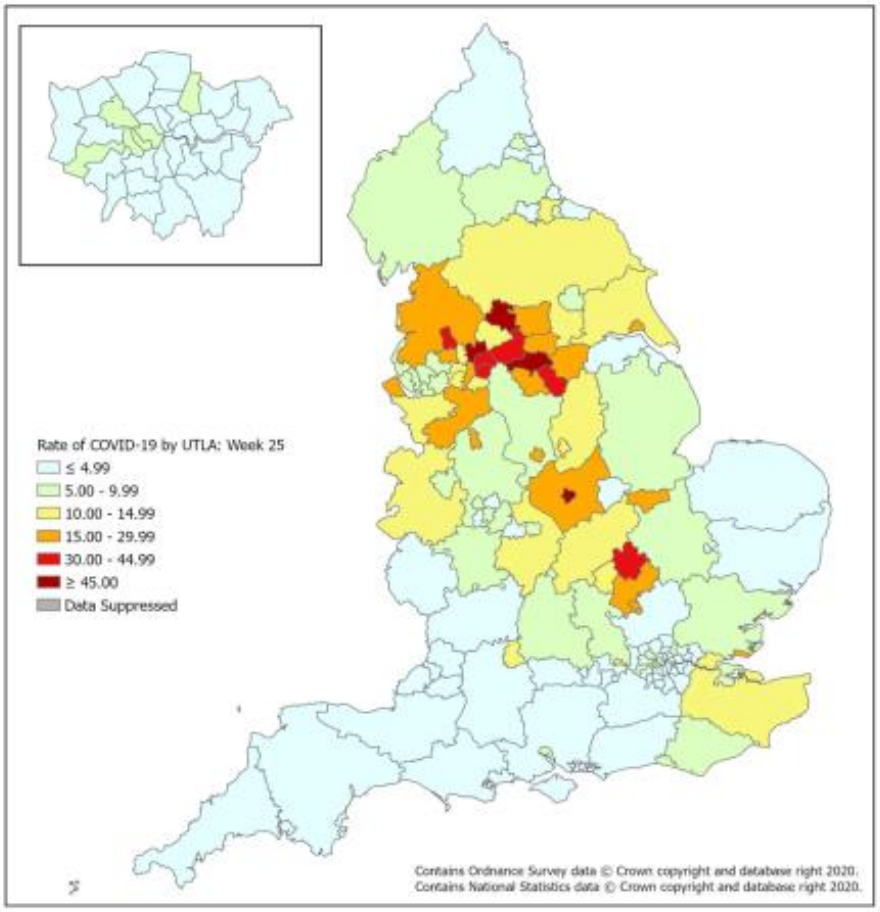
The growth rate is an estimate of the change of number of infections per day, reflecting how quickly the number of infections are changing each day. If the growth rate is greater than zero (+positive) the disease will grow; if it is less than zero (- negative) the disease will shrink. The size of the growth rate indicates the speed of change – a growth rate of +5% will grow faster than a growth rate of +1; conversely, a growth rate of -4% will shrink faster than a growth rate of -1%. The growth rate provides information on the size and speed of change while the R value simply provides information on the direction of change.

On Thursday 25 June the Government published official R estimates and Growth Rates at regional level. These estimates are as follows (note that these are NHS Regions, so North Cumbria falls within the North East and Yorkshire region):

Region	R	Growth Rate % per day
England	0.7-0.9	-4 to -1
East of England	0.7-0.9	-6 to -1
London	0.7-0.9	-6 to 0
Midlands	0.7-0.9	-4 to 0
North East and Yorkshire	07.-0.9	-5 to -2
North West	0.7-1.0	-4 to 0
South East	0.7-0.9	-5 to -1
South West	0.6-0.9	-6 to 0

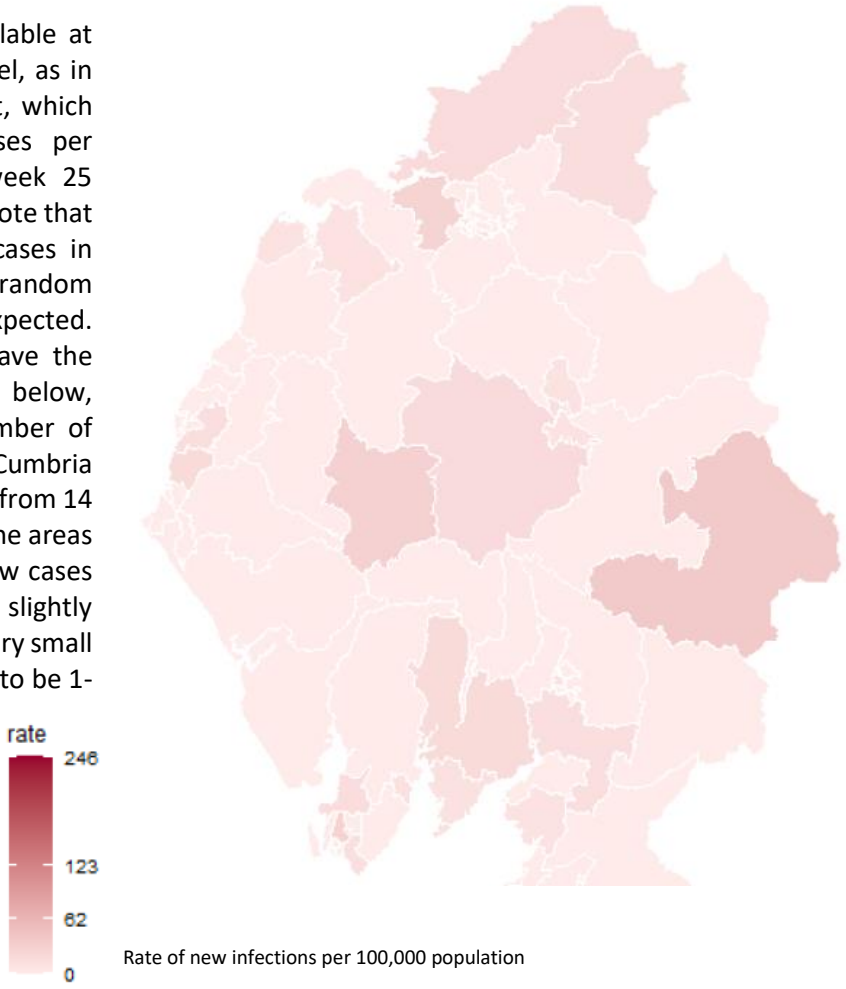
Weekly rate of COVID-19 cases per 100,000 tested

While R is a valuable indicator it should not be taken in isolation. A second source of data (and one used in the calculation of R) is the rate of postive tests. The latest available data (week 26 – week commencing 22 June 2020) are illustrated in the map below. This shows a continued low rate of postive tests in Cumbria, with a reduction in the positive rate in our neighbouring authorities.



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.

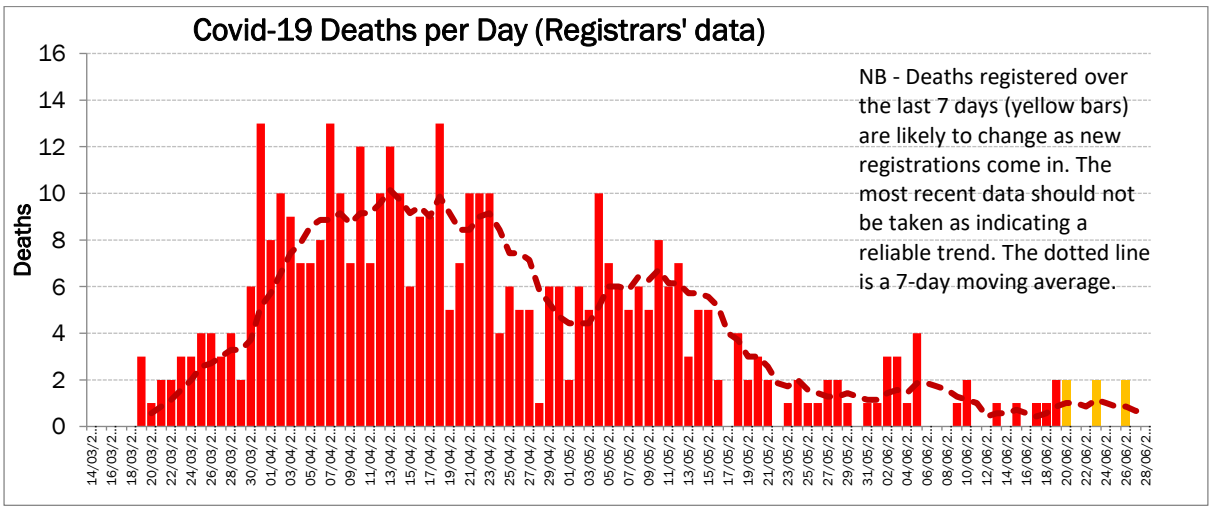
These data are also now available at Middle Super Output Area level, as in the Cumbria map on the right, which shows the rate of new cases per 100,000 population during week 25 (week commencing 15 June). Note that at this level the number of cases in each area is very low so random variation is entirely to be expected. While we do not currently have the detailed data behind the map below, on the basis of the total number of laboratory confirmed cases in Cumbria during week 25 (24 in total, up from 14 in Week 24) 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 (likely to be 1-3 cases).



Rate of new infections per 100,000 population

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 26 June 2020 (429 deaths).



The Office for National Statistics publishes mortality data at District level, allowing calculation of mortality rates at that level. These are shown on the graph below. Note that these are crude rates; because Covid-19 so disproportionately impacts on older people, areas with an older population would be expected to have a higher mortality rate. Age standardised death rates account for this but these are only occasionally published and at upper-tier local authority level. [Updated data will be published on 30th June].