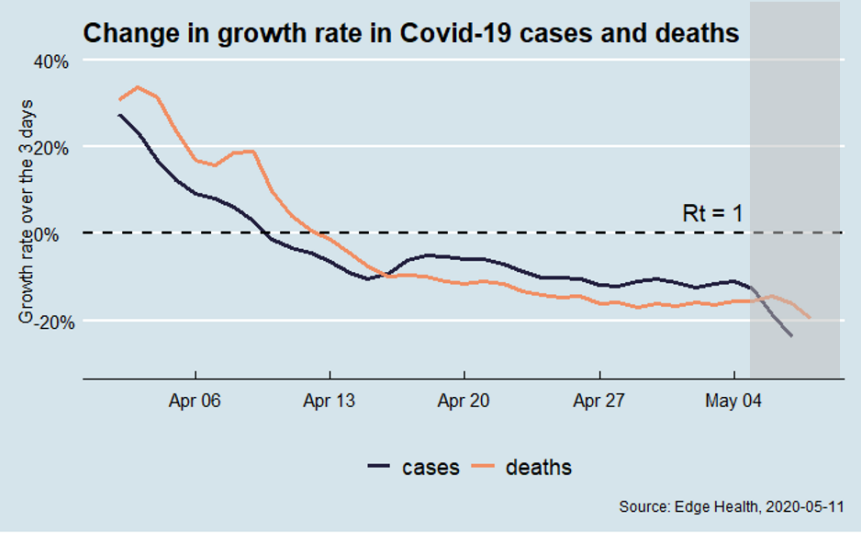
Popularised in the 2011 film Contagion, R is now a core part of the UK Government's Covid-19 recovery strategy. From now on, R will be used to inform the COVID-19 alert level, which will determine the speed at which lockdown is, or is not, released.

R captures the rate of infection of the virus.* Specifically, an R of 1 means that someone with the disease spreads it to one other person. When R is less than 1, the number of infections falls. Without intervention, R was in the region of 2.4, although estimates vary.

Nationally, cases have been falling since early- to mid-April.

The number of newly infected people is falling by around 10-15% every three days. SAGE's latest assessment is that an R of 0.5 to 0.9 has driven this negative growth rate.

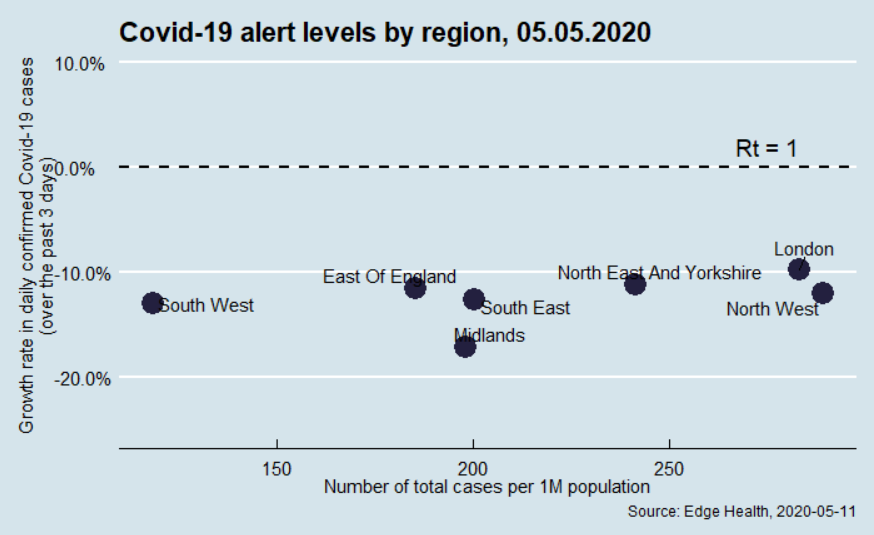
The rate appears to have stayed relatively stable for three weeks.



The other component of the COVID-19 alert level is the number of reported infected cases. The chart on the next page shows both measures for regions in England.

While the rate of growth of infections (and R) is similar across regions (three-day

growth rate of -10% in London to -18% in the Midlands), the number of reported infections varies significantly (North West and London have x2.5 more cases per head of population than the South West).



This suggests that a regional approach to stepping down the alert level could have merit - potentially linked to (i) the confidence in R and the number of cases (i.e. more testing would be good), and (ii) NHS capacity.

I would be surprised if I am the first person to suggest this could feed into a new take on the daily weather forecast...

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* R is the effective reproduction rate and is different from R0, which is the basic reproductive rate. R is based on what happens, while R0 is what happens without any intervention.

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