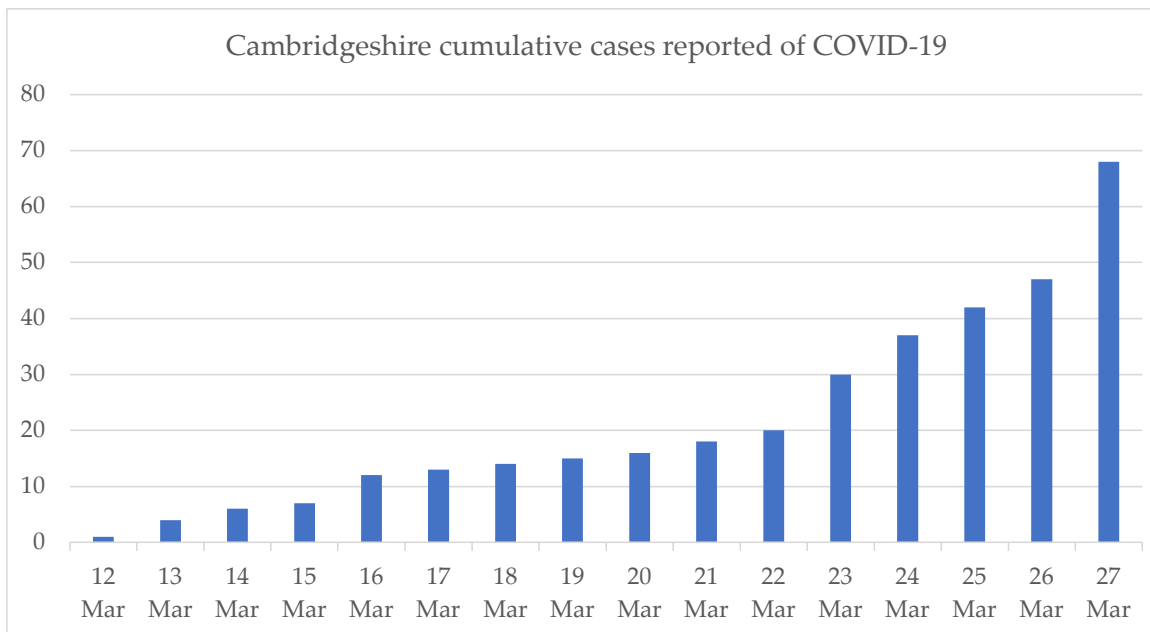


COVID-19 CASES IN CAMBRIDGESHIRE

28th March 2020

Public Health England publishes detailed data on COVID-19 cases. I have been drilling down into the data to see what it means for Cambridgeshire.



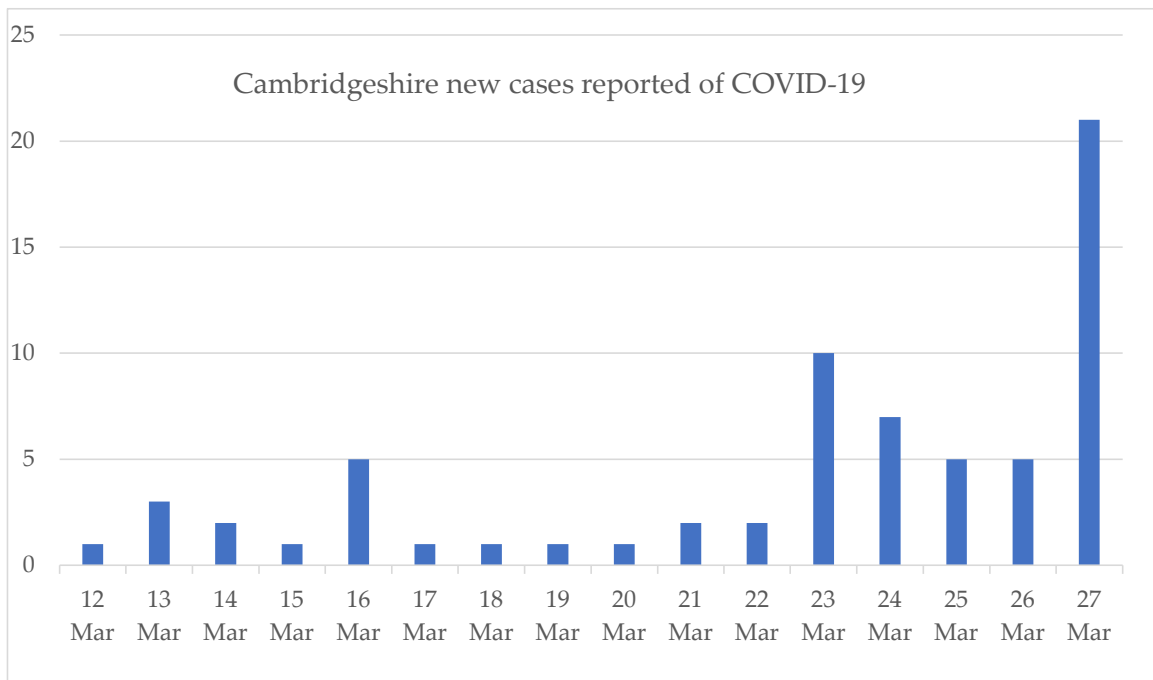
This chart shows the total number of COVID-19 confirmed cases in Cambridgeshire officially reported by Public Health England each day. The number of **reported** cases was at a relatively low level until 23 March, when there were 30 cases, but has taken off in the last 5 days, jumping to 68 on 27 March.

The **actual** number of cases will be significantly higher than this because:

- 1) Up to 30% of people will be asymptomatic (ie. not show any symptoms).
- 2) Others will have very mild symptoms. Only serious cases are tested.
- 3) The average incubation period is 5 days. People will carry the virus for 5 days on average before displaying any symptoms.
- 4) Only cases with laboratory confirmation are reported.

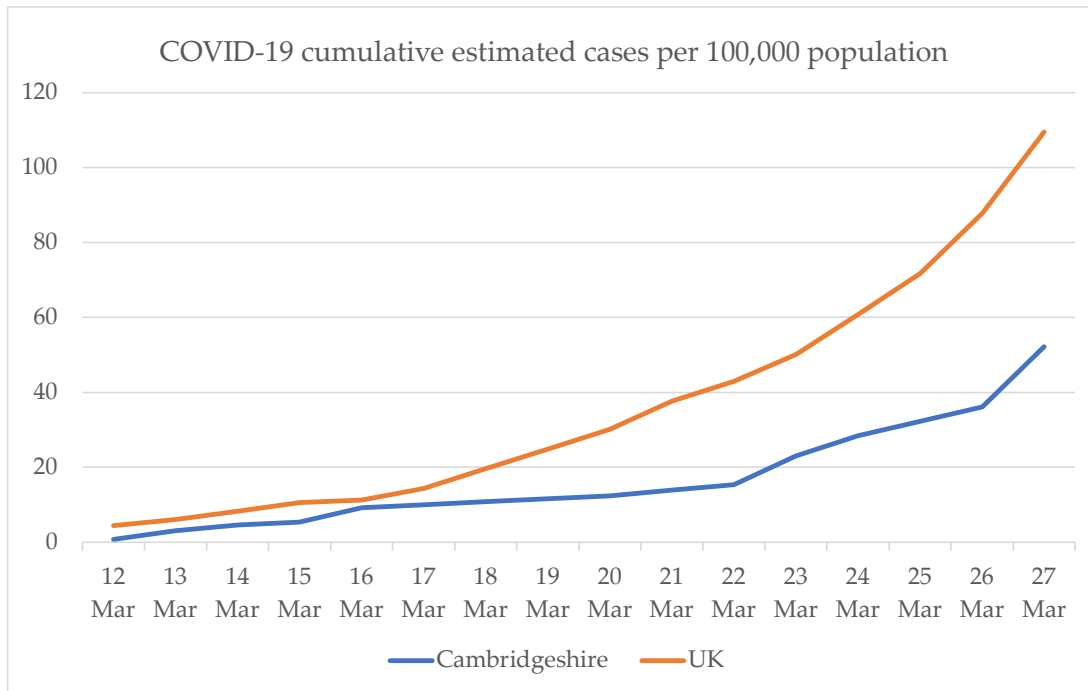
The latest experience in Italy is that there are **5 actual cases for every case reported**. On this basis, I estimate there were 340 actual cases on 27 March (ie. $68 \times 5 = 340$).

Note that the figures are for Cambridgeshire, which includes Cambridge but excludes Peterborough. We don't know how the cases are spread around the county and how many are in Cambridge.



I have analysed the cumulative figures to show the number of new cases reported each day.

To start with, there were only a few new cases each day. However, there has been a significant increase since 23 March - including 21 new cases on 27 March.



This chart shows my estimate of the cumulative number of COVID-19 cases per 100,000 population.

The blue line for Cambridgeshire demonstrates that the number of cases per 100,000 population has increased from 1 on 12 March to 52 on 27 March. Although there has been a dramatic increase, at present a tiny proportion of the population has the virus.

The blue line for Cambridgeshire has been consistently below the orange line for the UK. On 27 March, there were 52 cases per 100,000 in Cambridgeshire but 109 cases per 100,000 in the UK - more than twice as much. The spread of the virus is lower in Cambridgeshire than in the UK as a whole.

The ratio for Cambridgeshire on 27 March was calculated as follows:

- 1) At 27 March, there were 68 reported cases
- 2) My estimate is that there were 340 actual cases. This is 5 x 68, as explained on page 1 above
- 3) The population of Cambridgeshire is 651,000
- 4) Estimate cases/100,000 = $340 \times 100,000 / 651,000 = 52$

The ratio for the UK was calculated in the same way, based on the population of 66.4 million.

The number of reported cases is still relatively low - as a proportion of the population. If we strictly follow the government instructions, we can hopefully slow down the spread of the virus.

James Berry
27th March 2020