



Variants and the Covid-19 surge

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(Mains GS 3 : Science and Technology: Recent developments and their applications and effects in everyday life & Achievements of Indians in science & technology.)

Context:

- There are several things about the coronavirus epidemic that are not very well understood, or explained by the facts at hand.
- For example, the unexpected five-month long decline in cases in India starting in mid-September last year.
- An even bigger surprise has been the ferocity of the second wave that has seen the daily count of cases in India soaring to more than four lakh.

Lack of covid appropriate behaviour:

- Lack of 'Covid-appropriate behaviour' has been cited as one of the main reasons for the rapid rise in infections from March. But that is only part of the explanation.
- Even during the five-month lull, the adoption of masks wasn't universal, nor was physical distancing being strictly followed.
- Election rallies have also been blamed, but these do not explain the phenomenal rise in cases in states such as Maharashtra, Delhi, Punjab or Karnataka that had no elections.

Mutation in virus:

- Scientists have also been examining whether biological changes in the virus had anything to do with the unprecedented surge in infections in the last two months.
- Viruses mutate, and mutations that help it survive and circulate better are selected.
- In the last few months, several new variants of the virus have been found to be circulating in the Indian population.

The new variants:

- A few of virus variants have greater transmissibility, meaning they have a better ability to infect human beings.

- One particular variant, called B.1.617, first found in Vidarbha region of Maharashtra, has received a lot of attention because of its ability to transmit at a faster rate and, possibly, also to evade the immune response.
- Other fast-transmitting variants, such as the one that first emerged in the United Kingdom, called B 1.1.7, that has been found to be present in large numbers in northern India, could also be the reasons for the rapid rise in cases.
- While scientists acknowledge that these new variants could have contributed to the surge in cases, they have reluctant to say that these are the main cause for the ferocity of the second wave.
- They have been maintaining that the epidemiological evidence is still not clinching enough.
- On Wednesday, the government, for the first time, linked the B.1.617 variant with the surge seen in some states.
- But it reiterated that the clinical and epidemiological correlation was still not fully established.

Not the same everywhere:

- The new variants had been found to be circulating in many parts of the country but not every surge in cases could be attributed to these.
- Even within a state, the spread of the virus in some areas could be directly because of these faster-transmitting variants, while in others some other factor could be responsible.
- For example, in Maharashtra the rise in cases in the Vidarbha region can possibly be explained by the emergence of the B.1.617 variant.
- But this variant does not explain the surge in Mumbai. That is because this variant has not been found in adequate numbers in the Mumbai population.
- There, the main reason for the rise could be something else like reopening of the local trains, possibly, in the month of February.

Variants from different states:

- In Kerala, the new variant that is predominantly in circulation is N440K but the surge in Kerala could not be attributed to this.
- The locations where this variant found were not the same where the maximum cases were getting reported from.
- In fact, the surge was found to be the maximum in areas where the presence of this variant was the least.
- In Punjab and Haryana, however, there is little doubt about the cause of the surge. In both the states, the UK variant is predominant.
- In a recent study, more than 80% of the samples taken from infected people in Punjab were found to be of this variant.

- Neighbouring Delhi also has a large proportion of the UK variant, but in keeping with the character of the national capital which has people coming in from across the country, nearly every variant circulating in other states has marked a presence in Delhi as well.

Variants under watch:

- The new variants are under close watch right now. The government has already classified the B.1.617 as a 'variant of concern' though that tag is still to be attached to it officially by the World Health Organization.
- This particular variant has undergone further mutations, and at least three different sub-variants, named B.1.617.1, B.1.617.2 and B.1.617.3, are supposed to have the potential to spread even faster, and cause bigger damage than the parent variant.

Conclusion:

- Scientists say that in most places, a surge or a decline in cases can only be explained by a combination of factors
- Epidemics are like complex systems where very small changes in inputs, or initial conditions, can lead to dramatic and unexpected outputs.
- So, at some places, even a large number of wedding gatherings on a particular day could be the reason for a prolonged surge.
- Thus a covid appropriate behaviour along with exhaustive scientific research will be required to slow down the devastating infections and mortality.