

## Why this surge?

There is a huge surge in the number of SARS-CoV-2 infections in our country. The number of newly infected persons is expected to reach 3 lakh per day this week. Many are asking “why this surge?” No one has a definitive answer. Many factors are responsible. Without an iota of doubt, the most significant factor is the “mask fatigue.” Most everybody is tired of wearing a mask. It is inconvenient. The younger people are revolting. They are refusing to wear masks. And, they are falling ill with COVID-19 in large numbers. The mask is the most potent protector against the coronavirus infection. Not wearing the mask is the best invitation to the coronavirus. A normal person gets infected by coming in close contact with an infected person. A large proportion of infected persons do not show any symptoms. Therefore, maintaining physical distance with others – whether or not you know that they are infected – is a good way to avoid the infection. But let’s look around. Election rallies, Kumbh mela, and such other mass congregations. Physical distancing has gone for a toss. Not once in any election rally has a politician been heard appealing that masks should continue to be worn!

“Why do I need to take any precaution against the coronavirus? I have already taken the vaccine.” This false sense of safety has spread in a large section of our vaccine recipients. They are not wearing masks and are not maintaining physical distance. The surge in some parts of our country, for example in Maharashtra, has been far greater than in other parts. Fearing that lockdown will be suddenly clamped again, many migrant workers who had gone back to work after the first lockdown was lifted have started to return home. Many of them are surely infected but without symptoms. They are bringing the coronavirus home.

We have also been hearing that the coronavirus is mutating and that there are double mutations that are responsible for this surge. This may well be, but we do not have foolproof evidence that this is true. Changes in the genetic material of a virus is called a mutation. Mutations arise naturally. Most mutations arise and vanish because the virus in which the mutation arose may not, for some reason, find anyone to infect. However, if a mutation provides the virus some biological advantage to propagate, then we will find this mutant virus in many newly infected persons. After SARS-CoV-2 was first detected in Wuhan, China, in December 2019, many mutations have arisen. One of these mutations, called D614G, provided the mutant coronavirus a huge biological advantage to infect and spread. Today, this mutant variety – not the ancestral variety that was detected in Wuhan – is present in nearly every infected person. On the top of this D614G mutation, other mutations have arisen. Scientists have gathered evidence to show that some of the newly-arisen mutations have provided the coronavirus some advantages. For example, the E484K mutant variety of the coronavirus first detected in South Africa, on the top of the D614G mutation, enables the mutant to escape the antibodies that an infected person produces as a protective measure. This means that even if the infected person produces antibodies that should kill the coronavirus, it does not efficiently kill the E484K mutant coronavirus. Such scientific evidence comes from systematic and careful laboratory work – especially generating the genomic sequence of the

infecting coronaviruses – and by clinical and epidemiological studies documenting symptoms, antibody levels, tracing of who came in contact with whom, how long ago, and similar details. We are hearing that a “double mutant” coronavirus is responsible for the surge in infections that we are witnessing. This may well be. The two mutations in this “double mutant” coronavirus – named as B.1.617 – are E484Q (not the E484K mutation of the South African variant) and L452R. E484Q was first reported from India and has already spread to many countries. The so-called “double mutant” B.1.617 has been found in over 80% of newly infected persons in Maharashtra, and is rapidly spreading to other parts of the country. We need to carry out sequencing of the coronavirus rapidly as it is spreading and simultaneously collect data on symptoms, contacts, travel history, etc. to be able to understand and conclude that the “double mutant” spreads more efficiently and is a significant factor for this huge surge that we are witnessing. The Government of India has established the “Indian SARS-CoV-2 Consortium on Genomics” (INSACOG) – a multi-agency, multi-institutional, all-India network – to identify and track genomic variations arising in the SARS-CoV-2. However, INSACOG is genome-sequencing only about 1% of the COVID-19 samples collected. Unless surveillance of the coronavirus is scaled up by sequencing, and relevant data are collected and compiled rapidly and systematically, we will never be able to know whether the “double mutant” is a variant coronavirus of concern and is a significant factor in the current surge in infection.

Finally, vaccine recipients have been wondering how long will they be protected from COVID-19. Again, unfortunately, we do not have a clear answer yet. Those who have received the full dose of the vaccine must be followed up to find out whether they get COVID-19. What we know now is that most COVID-19 vaccines currently in use confer protection for at least six months to the vast majority of recipients. We must remember that six months have not passed for many persons after they received their second dose. We must also remember that the vaccine does not protect us from being infected. The vaccine protects us from exhibiting symptoms and adverse consequences after being infected. We must, therefore, protect ourselves from infection with mask, physical distancing and frequently washing our hands with soap or using hand-sanitizer even after getting the full dose of the vaccine.

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