Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

activity against the wildtype strain, post-vaccination sera were equally effective in neutralising D614G, B.1.1.7, and B.1.429 variants, whereas serum neutralisation efficiency was significantly decreased for B.1.526 (by a factor of 4·03, 95% CI 3·26–4·80), P.1 (by a factor of 3·92, 3·18–4·65), and B1.351 (by a factor of 5·27, 4·19–6·34). Moreover, only a small proportion of post-vaccine sera was capable of neutralising B.1.526 (24 [26%]; GMT 29·0), P.1 (32 [34%]; GMT 26·1), and B.1.351 (five [5%]; GMT 69·2; appendix). Consistently, post-vaccine sera had significantly reduced titres of IgG specific to E484K-containing receptor-binding domain (RBD) compared with those specific to wildtype RBD (appendix), which might be responsible for immune escape by VOCs containing E484K.[6]

See Online for appendix

In line with recent reports[1-4] using serum samples from recipients of either mRNA vaccines or inactivated virus vaccines, we identified that several VOCs, such as B.1.1.7 and B.1.429, were effectively neutralised despite the presence of RBD mutations, whereas other circulating VOCs bearing the E484K mutation exhibited substantially reduced neutralisation by sera from vaccinated individuals. Our findings underscore the need for enhanced viral surveillance and assessment of currently authorised vaccine effectiveness against emerging variants, especially in the presence of E484K.

We thank all vaccine recipients for providing serum samples. This study was supported by the Fundamental Research Funds for the Central Universities (14380459), Nanjing Medical Science and Technique Development Foundation (QRX17141), and Nanjing Department of Health (YKK19056). We declare no competing interests.

*Yuxin Chen, Han Shen, Rui Huang, Xin Tong, *Chao Wu*
dr.wu@nju.edu.cn

Department of Laboratory Medicine (YC, HS) and Department of Infectious Diseases (RH, XT, CW), Nanjing Drum Tower Hospital, Nanjing University Medical School, Nanjing, Jiangsu 210008, China; Institute of Viruses and Infectious Diseases, Nanjing University, Nanjing, Jiangsu 210008, China (YC, RH, XT, CW)

Published Online June 21, 2021 https://doi.org/10.1016/S1473-3099(21)00355-8

1 Liu Y, Liu J, Xia H, et al. Neutralizing activity of BNT162b2-elicited serum. *N Engl J Med* 2021; **384:** 1466–68.
2 Garcia-Beltran WF, Lam EC, St Denis K, et al. Multiple SARS-CoV-2 variants escape neutralization by vaccine-induced humoral immunity. *Cell* 2021; **184:** 2372–83.
3 Wu K, Werner AP, Koch M, et al. Serum neutralizing activity elicited by mRNA-1273 vaccine. *N Engl J Med* 2021; **384:** 1468–70.
4 Wang GL, Wang ZY, Duan LJ, et al. Susceptibility of circulating SARS-CoV-2 variants to neutralization. *N Engl J Med* 2021; published online April 6. https://doi.org/10.1056/nejmc2103022.
5 Palacios R, Batista AP, Albuquerque CSN, et al. Efficacy and safety of a COVID-19 inactivated vaccine in healthcare professionals in Brazil: the PROFISCOV study. *SSRN* 2021; published online April 14. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3822780 (preprint).
6 Wang P, Nair MS, Liu L, et al. Antibody resistance of SARS-CoV-2 variants B.1.351 and B.1.1.7. *Nature* 2021; **593:** 130–35.

COVID-19 and SOS tweets in India

"Be safe, be smart, be kind" were the words of WHO Director-General Tedros Adhanom Ghebreyesus at the start of the COVID-19 pandemic. India has been facing the worst second wave in the pandemic. With daily cases crossing 350 000 at the time of writing, hospitals in India have witnessed a surge in the number of critically ill patients. The battle between the health-care system serving the second largest population in the world and the severe manifestations of COVID-19 is intense and ongoing. Doctors, nurses, hospital staff, and ambulance drivers are at the forefront of managing the complications of COVID-19. In a Media Watch piece, Graham Mackenzie described the experience of lockdown in the UK, as captured through social media.[1] In India, social media has turned out to be a saviour in the middle of this pandemic.

Hashtags such as #Covid19IndiaHelp, #SOSDelhi, and #helpcovidindia have been used by people on Twitter to request urgent help to find nearest hospitals, ventilators, oxygen cylinders, oxygen concentrators, important drugs such as remdesivir and tocilizumab, and blood products. With some hospitals facing scarcity of oxygen due to the unprecedented rise in sick patients with acute respiratory distress syndrome, people have come forward to help, from government administration, local leaders, small welfare groups, and even businessmen. States have cooperated in response to calls for help through supplying oxygen to neighbouring states. Countries such as the UK and Germany came forward to supply resources amid the crisis. Doctors used tweets to guide COVID-19 patients on medications and monitoring at home. Doctors from different specialties have used social media to give telemedicine consultations for free. More importantly, doctors have cleared the misconceptions of users.

Important tweets have clarified issues such as need for hospital admission and prone ventilation, use of the 6 min walk test in mild disease and steroids in managing severe disease, and education on COVID-19 reporting and data system staging of CT chest scans.[2,3] Hospitals updated the day-to-day vacant beds' status in wards and intensive care units in tweets. Home-based RT-PCR swab sampling helplines were shared and free-food helpline numbers for patients with COVID-19 isolated at home were circulated.

With the ongoing largest vaccination drive, the government is leaving no stone unturned to make vaccines available to all citizens.[4] The Indian Government provided nearby vaccination centres and details of registration in tweets from officials. Links to vaccination portals—through which citizens could schedule their vaccine appointments—and awareness of vaccines were spread with hashtags such as #Unite2FightCorona and #LargestVaccineDrive. Important information on safety and efficacy of vaccines was shared. The government released home-based treatment and hospital-management protocols. Social distancing and correct mask use were prioritised. Lockdown instructions and guidelines for interstate travel were circulated

by official handles of government. COVID-19 fact checkers were updated to address misinformation on social media.

Understanding the support provided by social media during the pandemic might help to create support for crises in the future.[5] There are limitations of social media, such as the spread of rumours and panic messages and anxiety induced by sharing stories of suffering. Twitter users, however, have paved the way to turn social media into a blessing during the pandemic. We have witnessed many stories of courage, struggles to survive, and ordinary citizens turning into saviours to help society in one of the worst pandemics ever faced.

I declare no competing interests.

Anuraag Jena
anuraag2destiny@gmail.com

Department of Gastroenterology, Post Graduate Institute of Medical Education & Research, Chandigarh, India

1 Mackenzie G. A year and a day of #Covid19uk tweets. *Lancet Infect Dis* 2021; **21:** 616.
2 Mantha S, Tripuraneni SL, Roizen MF, Fleisher LA. Proposed modifications in the 6-minute walk test for potential application in patients with mild COVID-19: a step to optimize triage guidelines. *Anesth Analg* 2020; **131:** 398–402.
3 Prokop M, van Everdingen W, van Rees Vellinga T, et al. CO-RADS: a categorical CT assessment scheme for patients suspected of having COVID-19-definition and evaluation. *Radiology* 2020; **296:** e97–104.
4 Bagcchi S. The world's largest COVID-19 vaccination campaign. *Lancet Infect Dis* 2021; **21:** 323.
5 Cinelli M, Quattrociocchi W, Galeazzi A, et al. The COVID-19 social media infodemic. *Sci Rep* 2020; **10:** 16598.

Can the USA return to pre-COVID-19 normal by July 4?

As of May 17, 2021, more than 270 million vaccine doses have been administered in the USA, with over 123 million people fully vaccinated, having received the second dose in a two-dose COVID-19 vaccine series (Moderna or Pfizer-BioNTech) or one dose of the single-shot vaccine (Johnson & Johnson).[1] President Joe Biden has set a goal of vaccinating 70% of adults by July 4 for the nation to return closer to pre-pandemic normal. However, at the current vaccination pace of fewer than 2·5 million doses per day, at least 50 million adults will still not be fully vaccinated by that date, along with more than 48 million unvaccinated children younger than 12 years. To project the impact of lifting social distancing measures by July 4, we fitted an agent-based model of COVID-19 transmission and vaccination[2] to daily case incidence reported in the USA from Oct 1, 2020, to May 1, 2021 .

We project that, at the vaccination rate of 2 million doses per day and expansion of vaccine eligibility to children aged 12–15 years on May 13, 2021, the daily incidence would decline to less than 3 per 100 000 population by July 1 (appendix p 5). The updated guidelines from the US Centers for Disease Control and Prevention (CDC) permit fully vaccinated individuals to resume certain pre-pandemic activities and social interactions 2 weeks after the second dose.[3] We found a minimal change in daily incidence even if vaccinated individuals reverted to their pre-pandemic contact behaviour as soon as 2 weeks after their first dose. By contrast, if the loosening of CDC guidelines was extended to all individuals on July 4, we project a surge in COVID-19 cases, with a magnitude that depends on the social activity level of unvaccinated individuals. For example, if all individuals resumed their pre-pandemic activities on July 4, the surge would lead to an average of 102 daily cases per 100 000 population at the peak, corresponding to 337 865 (95% credible interval [CrI] 289 082–384 304) cases for the entire USA. This peak would represent a 21% increase beyond the apex of the pandemic thus far, which occured in January, 2021. Hospitalisations and deaths, although lower than the previous wave, would still be substantial, with an average of 9780 (95% CrI 8289–11 200) hospital admissions and 1261 (962–1593) deaths at the peak of the surge. Under the scenario that social activities of unvaccinated individuals revert to 70% of their pre-pandemic level on July 4, we still project a surge, with a peak incidence comparable to that observed in April, 2021, but considerably lower hospitalisations and deaths (appendix p 6). However, we found that social distancing measures could be lifted for all individuals as early as September without the risk of a significant surge in incidence or severe outcomes (appendix p 8).

Our results demonstrate that relaxing social distancing measures for vaccinated individuals would have minimal impact on incidence, but extending such guidelines to other individuals before adequate vaccination of children could fuel a rapid rise in COVID-19 cases, hospitalisations, and deaths.[4] Furthermore, mounting incidence makes the emergence of additional variants of concern more likely, potentially compromising the efficacy of vaccines.[5] These findings have important policy implications for the control of the pandemic. Given that most children might not be vaccinated until 2022, it is unlikely that the coverage of fully vaccinated individuals aged 12 years and older would confer sufficient herd immunity by July 4. To bank the benefits of vaccination, avert additional pandemic waves, and facilitate a sustainable resumption of social and economic activities, we urge a cautious approach to updating COVID-19 guidelines in the coming months, especially given the emergence of highly transmissible SARS-CoV-2 variants.[6] Our study underscores the risks of prematurely lifting measures, which will be borne disproportionately by individuals who are not yet vaccinated.

APG acknowledges funding from National Science Foundation (NSF) Expeditions (grant 1918784),

For **COVID-19 incidence data** see https://github.com/nytimes/covid-19-data/

See **Online** for appendix

Published **Online** June 2, 2021 https://doi.org/10.1016/S1473-3099(21)00324-8