

(ie, >1 day) in serial intervals among the samples studied, which had an exclusion criteria applied to ensure consistency. In turn, this lends support to the hypothesis that the recent rapid growth is potentially driven by an increase in the average number of secondary cases generated by a case infected with the B.1.617.2 variant. Studies with proper control of confounding factors are thus crucial to tease out the key epidemiological factors that facilitate the increased transmissibility of the B.1.617.2 variant. These factors include, but are not limited to, the viral load and shedding dynamics in individuals infected with the B.1.617.2 variant of SARS-CoV-2, the exposure settings, and the vaccination status of infected individuals. Without signs of lowered disease severity for the B.1.617.2 variant, contact tracing and testing around COVID-19 cases, along with vaccination and non-pharmaceutical interventions, continue to remain key SARS-CoV-2 outbreak control measures in the short term.

RP declares funding from the Singapore Ministry of Health. AJK declares funding from Wellcome and the National Institute of Health Research (NIHR). The views expressed in this publication are those of the authors and not necessarily those of the NIHR or the UK Department of Health and Social Care. TMM and VJL declare no competing interest. Contributors, role of funder, and members of the Centre for the Mathematical Modelling of Infectious Diseases (CMMID) COVID-19 working group are listed in the appendix. The model code and de-identified data that underlie the results reported in this Correspondence are available online at https://github.com/rachaelpong/serial_interval_covid_b.1.617.2.

**Rachael Pung, Tze Minn Mak, CMMID COVID-19 working group, Adam J Kucharski, Vernon J Lee rachaelpong@hotmail.com*

Ministry of Health, Singapore (RP, VJL); Centre for the Mathematical Modelling of Infectious Diseases (RP, AJK) and Department of Infectious Disease Epidemiology (RP, AJK), London School of Hygiene & Tropical Medicine, London, UK; National Public Health Laboratory, National Centre for Infectious Diseases, Singapore (TMM); Saw Swee Hock School of Public Health, National University of Singapore, Singapore (VJL)

- 1 WHO. Weekly epidemiological update on COVID-19 - 11 May 2021. May 11, 2021. <https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19--11-may-2021> (accessed May 23, 2021).

- 2 Park SW, Bolker BM, Funk S, et al. Roles of generation-interval distributions in shaping relative epidemic strength, speed, and control of new SARS-CoV-2 variants. *medRxiv* 2021; published online May 5. <https://doi.org/10.1101/2021.05.03.21256545> (preprint).
- 3 Lim JM, Tun ZM, Kumar V, et al. Population anxiety and positive behaviour change during the COVID-19 epidemic: cross-sectional surveys in Singapore, China and Italy. *Influenza Other Respir Viruses* 2021; **15**: 45–55.
- 4 Sim S. More than 6 in 10 Singaporeans likely to continue good hygiene practice after Covid-19: NTU study. Jan 26, 2021. <https://www.straitstimes.com/singapore/more-than-6-in-10-singaporeans-likely-to-continue-good-hygiene-practice-after-covid-19-ntu> (accessed May 23, 2021).
- 5 Ministry of Health, Singapore. Expansion of vaccination programme; further easing of community measures. March 24, 2021. <https://www.moh.gov.sg/news-highlights/details/expansion-of-vaccination-programme-further-easing-of-community-measures> (accessed May 23, 2021).

Towards a European strategy to address the COVID-19 pandemic

Reduction of COVID-19 incidence across Europe in the early spring months of 2021 led to substantial relaxation of restrictions in summer, despite the emergence and spread of the more transmissible SARS-CoV-2 delta variant. As expected, this relaxation led to a renewed increase in incidence. How should Europe act, what strategies should it adopt, and what specific risks should it consider moving forward?¹ These questions become even more pressing, since emerging data indicates the delta variant is more infectious and partially evades immune response. Europe needs a coherent and effective strategy before schools fully reopen and the transmission of SARS-CoV-2 further increases due to seasonality in autumn.

Two opposing strategies are considered: either continue to rapidly lift restrictions, assuming the combination of past natural exposure and current vaccination coverage would allow a high incidence to continue, without overburdening health-care systems; or lift restrictions at the pace of vaccination progress with the core

aim to keep incidence low, given this effectively and efficiently controls the pandemic via test-trace-isolate (TTI) programmes.^{2,3}

Given immunisation levels as of August, 2021, the first strategy can lead to an incidence of several hundred cases per million per day, whereas the second strategy would require an incidence of well below one hundred cases per million per day. Such a discrepancy of incidence poses considerable friction to European cooperation, economy, and society: high incidence in one country puts the low-incidence strategy in a neighbouring country at risk. Because of this conflict of interest, some countries impose testing and quarantine requirements, hampering international exchange. Thus, either strategy can only work effectively if European countries stop acting as if they could fight the pandemic on their own.

The EU's Digital Covid Certificate (EU DCC) has been introduced to facilitate cross-border travel. However, no vaccine is completely effective at preventing virus transmission. Therefore, the implementation of the EU DCC must be accompanied by systematic evaluation of its contribution to the spread of present and future variants of concern (VOCs).⁴ The development of a European strategy for testing travellers and commuters is therefore warranted.⁵

The advantages of low incidence are known and include: (1) less mortality, morbidity, and long COVID; (2) solidarity with those not yet protected; (3) lower risk of new VOCs emerging and spreading; (4) increased feasibility of comprehensive TTI; (5) less workforce in quarantine and isolation, including those in health care; and (6) ensuring schools and childcare remain open during the coming autumn-winter season.⁶ In contrast, a high incidence might still overwhelm hospitals and intensive care units in some countries, as estimated in the appendix.



Published Online

August 9, 2021

[https://doi.org/10.1016/S0140-6736\(21\)01808-0](https://doi.org/10.1016/S0140-6736(21)01808-0)

See Online for appendix

Submissions should be made via our electronic submission system at <http://ees.elsevier.com/thelancet/>

Given the clear benefits of low incidence, the insufficient vaccination coverage in many European countries, uncertainties regarding child vaccination, and the time required for full immunisation of adolescents, we recommend that all European countries act together to achieve low incidence, at least until everyone has had the opportunity to get vaccinated. A high incidence in one country challenges the pandemic response for others, in Europe and across the world. Maintaining low incidence is an act of solidarity and becomes easier with the advantage of increasing vaccination coverage.

To improve measure effectiveness, three further challenges must be overcome: (1) vaccination availability, access, and hesitancy; (2) the widespread misconception that freedom would be maximised when ignoring high incidence as it has been recognised that low incidence facilitates containment and safeguards the freedom of all, including the most vulnerable; and (3) the lack of a coherent pandemic response and communication strategy. In terms of the latter challenge, perceived risk, motivation, and health literacy are important predictors of health-seeking behaviour and adherence to measures. Public trust must be maintained through timely, consistent, and persistent communications, including systematically developed counterspeech for misinformation.

The pandemic is yet to be overcome, but an end is conceivable. Restrictions can be lifted when high vaccination coverage is reached, and if vaccines remain highly effective against VOCs. However, until then, the goal should be to minimise economic and societal costs for Europe and for the world. Maintaining and communicating a clear strategy is key, and pan-European coordination and common goals across countries are more important than ever.

RB is a shareholder of the Information Technology For Translational Medicine research institute. SB reports grants from Netzwerk Universitätsmedizin. PB reports grants from the EU's SC1-PHE-CORONAVIRUS-2020 programme,

Pfizer, GlaxoSmithKlein, and European Commission IMI, unrelated to this Correspondence. CL reports grants from the University of Oxford, the National Centre for Smoking Cessation and Training, Gilead Sciences, and the European Commission's Horizon 2020, unrelated to this Correspondence, all under the agreement and control of the Special Committee for Research Grants of the University of Crete, Greece. GNP's contribution is in his personal capacity; the opinions expressed are the author's own and do not reflect the views of the National Institutes of Health (NIH), the Department of Health and Human Services, or the US Government. GNP's patents and company interactions are managed through the NIH. EP reports grants from the European Commission and personal fees from the European Commission, Maastricht University, Charité – Universitätsmedizin Berlin, and the Swedish Healthcare Academy, unrelated to this Correspondence. MPi reports grants and personal fees from Wellcome and the Economic and Social Research Council, grants from the Medical Research Council, and personal fees from the Research Foundation Flanders, unrelated to this Correspondence. BP is a member of the Austrian National Bioethics Committee and has been a member of the European Group on Ethics in Science and New Technologies (2017–21). Projects in the laboratory of ESz are co-funded by Merck Healthcare. All other authors declare no competing interests. Acknowledgements of funding sources are stated in the appendix. Additional information about the estimation of intensive care unit admissions and translated versions of this Correspondence is available in the appendix.

**Viola Priesemann, Rudi Balling, Simon Bauer, Philippe Beutels, André Calero Valdez, Sarah Cuschieri, Thomas Czyponka, Uga Dumpis, Enrico Glaab, Eva Grill, Pirta Hotulainen, Emil N Iftekhar, Jenny Krutzinna, Christos Lionis, Helena Machado, Carlos Martins, Martin McKee, George N Pavlakis, Matjaž Perc, Elena Petelos, Martyn Pickersgill, Barbara Prainsack, Joacim Rocklöv, Eva Schernhammer, Ewa Szczurek, Sotirios Tsiodras, Steven Van Gucht, Peter Willeit*
viola.priesemann@ds.mpg.de

Max Planck Institute for Dynamics and Self-Organization, 37077 Göttingen, Germany (VP, SB, ENI); University of Luxembourg, Esch-sur-Alzette, Luxembourg (RB, EGL); Vaccine & Infectious Disease Institute, University of Antwerp, Belgium (PB); RWTH Aachen University, Aachen, Germany (ACV); Faculty of Medicine and Surgery, University of Malta, Msida, Malta (SC); Institute for Advanced Studies, Vienna, Austria (TC); Pauls Stradins Clinical University Hospital, University of Latvia, Riga, Latvia (UD); Ludwig-Maximilians University, Munich, Germany (EGr); Minerva Foundation Institute for Medical Research, Helsinki, Finland (PH); University of Bergen, Bergen, Norway (JK); Clinic of Social and Family Medicine, Faculty of Medicine, University

of Crete, Crete, Greece (CL); Institute of Health and Medicine, University of Linköping, Linköping, Sweden (CL); University of Minho, Braga, Portugal (HM); Department of Community Medicine, Health Information and Decision Sciences of the Faculty of Medicine of the University of Porto, Porto, Portugal (CM); London School of Hygiene & Tropical Medicine, London, UK (MM); National Cancer Institute, Bethesda, MD, USA (GNP); University of Maribor, Maribor, Slovenia (MPe); Department of Medical Research, China Medical University Hospital, China Medical University, Taichung, Taiwan (MPe); Clinic of Social and Family Medicine, Faculty of Medicine, University of Crete, Heraklion, Greece (EP); Faculty of Health, Medicine and Life Sciences, Maastricht University Maastricht, Maastricht, Netherlands (EP); University of Edinburgh, Edinburgh, UK (MPi); University of Vienna, Vienna, Austria (BP); Department of Public Health and Clinical Medicine, Section of Sustainable Health, Umeå University, Umeå, Sweden (JR); Medical University of Vienna, Vienna, Austria (ESc); University of Warsaw, Warsaw, Poland (ESz); National and Kapodistrian University of Athens Medical School, Athens, Greece (ST); Sciensano, Brussels, Belgium (SVG); Medical University of Innsbruck, Innsbruck, Austria (PW); University of Cambridge, Cambridge, UK (PW)

- 1 Iftekhar EN, Priesemann V, Balling R, et al. A look into the future of the COVID-19 pandemic in Europe: an expert consultation. *Lancet Regional Health Europe* 2021; published online July 29. <https://doi.org/10.1016/j.lanepe.2021.100185>.
- 2 Kretzschmar ME, Rozhnova G, van Boven M. Isolation and contact tracing can tip the scale to containment of COVID-19 in populations with social distancing. *Front Phys* 2021; **8**: 622485.
- 3 Contreras S, Dehning J, Loidolt M, et al. The challenges of containing SARS-CoV-2 via test-trace-and-isolate. *Nat Commun* 2021; **12**: 1–13.
- 4 Krueger T, Gogolewski K, Bodych M, et al. Assessing the risk of COVID-19 epidemic resurgence in relation to the delta variant and to vaccination passes. *medRxiv* 2021; published online July 18. <https://doi.org/10.1101/2021.05.07.21256847> (preprint).
- 5 Phelan AL. COVID-19 immunity passports and vaccination certificates: scientific, equitable, and legal challenges. *Lancet* 2020; **395**: 1595–98.
- 6 Priesemann V, Balling R, Brinkmann MM, et al. An action plan for pan-European defence against new SARS-CoV-2 variants. *Lancet* 2021; **397**: 469–70.

Indonesia's second wave crisis: medical doctors' political role is needed more than ever

Indonesia is facing its worst crisis in the COVID-19 pandemic as various parties named it the new epicentre of the pandemic. In mid-July, WHO



Zick Maulana/NurPhoto/Getty Images



Published Online
 August 9, 2021
[https://doi.org/10.1016/S0140-6736\(21\)01807-9](https://doi.org/10.1016/S0140-6736(21)01807-9)