



ELSEVIER

Contents lists available at ScienceDirect

## International Journal of Infectious Diseases

journal homepage: [www.elsevier.com/locate/ijid](http://www.elsevier.com/locate/ijid)INTERNATIONAL  
SOCIETY  
FOR INFECTIOUS  
DISEASES

## Editorial

## COVID-19 travel restrictions and the International Health Regulations – Call for an open debate on easing of travel restrictions



The COVID-19 pandemic caused by the novel coronavirus (SARS-CoV-2) has made national governments worldwide to mandate several generic infection control measures such as physical distancing, self-isolation, and closure of non-essential shops, restaurants schools, among others. Some models suggest physical distancing would have to persist for 3 months to mitigate the peak effects on health systems and could be required on an intermittent basis for 12 to 18 months (Flaxman et al., 2020).

Apart from these control measures travel restrictions during the early phase of the China outbreak were useful to confine it to Wuhan, the major source of the outbreak (Kraemer et al., 2020) although ultimately these measures did not prevent the spread of COVID-19 to other regions of China. The global spread of the SARS-CoV-2 has clearly been associated with regional and international travel which has contributed to the pandemic (Candido et al., 2020). To limit cross-border spread, both regionally and globally, many countries have swiftly adopted sweeping measures, including full lockdowns of shops, companies, shutting down airports, imposing travel restrictions and completely sealing their borders, to contain transmission (Gostin and Wiley, 2020). The grounding of international travel as part of the global response to prevent spread has caused profound disruption of travel and trade and has threatened the survival of many airlines, travel companies, and associated businesses.

Travel bans to affected areas or denial of entry to passengers coming from affected areas are usually not effective in preventing the importation of cases but have a significant economic and social impact. Since the WHO declaration of a public health emergency of international concern on 30 January 2020, and as of 8th April, 2020, 180 countries have reported to WHO additional health measures that significantly interfere with international traffic in relation to travel to and from China or other countries, ranging from denial of entry of passengers, visa restrictions or quarantine for returning travellers (WHO, 2020a). To re-start the world economy again it will be important to ease travel restrictions as soon as possible. Whilst travel restriction measures that significantly interfere with international traffic may be justified at the beginning of an outbreak, since they allow countries time to implement effective preparedness measures based on careful risk assessment, they should be based on a reasoned scientific evaluation of the

available evidence on their possible effectiveness. They should also be time-limited and reconsidered and revisited on a regular basis as better information on both the effectiveness and the socio-economic impact of the measures emerges. Thus an open debate is now required on when and how they need to be lifted. This debate could usefully be framed in the context of the International Health Regulations.

The purpose of the WHO **International Health Regulations** (WHO, 2020b) is to 'prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade'. The IHR are focussed on public health events where 4 key considerations are present (WHO, 2005):

1. Is the public health impact of the event serious?
2. Is the event unusual or unexpected?
3. Is there a significant risk of international spread?
4. Is there a significant risk of international travel or trade restrictions?

In the case of COVID-19, the answer to all the above questions is 'YES' and this is what led to the Emergency Committee recommending to the Director General in January that COVID-19 constituted a Public Health Emergency of International Concern. Within the IHR the declaration of a PHEIC opens up the possibility for WHO to make Temporary Recommendations on measures that should be implemented to help bring the event under control. The COVID-19 Emergency Committee made a wide range of recommendation to the Director General but the Committee specifically stated "The Committee does not recommend any travel or trade restriction based on the current information available".

The WHO's advice, based on many years of international outbreak response, was considered by many to be reasonable and evidence-based but the recommendation on travel restrictions has not been heeded by governments and politicians in the face of rapid spread of COVID-19 between countries. This highlights the apparent dissonance between scientific advice and political realities [and indeed public perception]. As many countries are now approaching the peak or flattening phase of the epidemic curve this dissonance will again become forefront and an open

<https://doi.org/10.1016/j.ijid.2020.04.029>

1201-9712/Crown Copyright © 2020 Published by Elsevier Ltd on behalf of International Society for Infectious Diseases. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

debate is required on lifting of travel restrictions. Several questions need to be considered:

1. Why have several countries systematically ignored WHO's advice on not restricting travel during the COVID-19 outbreak? Is it that the advice was considered wrong or that the advice was inconsistent with the public perception that closing borders was a “sensible” thing to do?
2. Given that countries have unilaterally made decisions to close down international travel, how can we get better science and evidence into decisions about lifting these restrictions as the outbreak resolves so that international trade and the global economy can start to recover? It seems inevitable that countries will move at different speeds to these decisions, reflecting the different evolution of the outbreak in each country. Promoting a risk-based approach to lifting the travel restrictions that might vary from country to country could provide a way forward but it will need a degree of international coordination to avoid a random, possibly chaotic, certainly confusing, and probably ineffective process. This coordination should come from WHO in line with the mandate given to WHO by the member states through the IHR. Countries with still very few cases and potential to arrest and eliminate the few cases that they have, should not open up travel without very strict quarantine for arrivals. This could reduce the conflict between science-based advice and political decision making.
3. What mitigating measures will be available to reduce the risk of a resurgence of the outbreak as public health measures, including travel restrictions, are eased? In particular what role (if any) will PCR and immunity (serology) testing play in managing the impact of lifting restrictions? It will be imperative that countries easing restrictions (whether social or physical distancing or travel restrictions) have in place resources and capacity for detecting, testing and quarantining all new cases arising as well as tracing and tracking all contacts.

There has been evidence of global capacity issues with PCR tests and possibly of market influencing to secure testing capacity in some countries. Should there be, within the spirit of the recent G20 statement (G20, 2020), international cooperation facilitated by WHO to ensure testing capacity is made available in a managed way to countries as and when they need it most? Indeed, the WHO the 7th April certified the first two PCR tests (WHO, 2020c) and advice on the use of point-of-care tests (WHO, 2020d).

The majority of persons who have been infected SARS-CoV-2 recover and appear to be immune and non-infectious (To et al., 2020) although recurrence have been reported but need further confirmation (Zhou et al., 2020). We do not know for how long such immunity lasts but neutralizing antibodies was found more than two years after infection with SARS-CoV (Wu et al., 2007). A validated, specific and sensitive test to detect SARS-CoV-2-specific-IgG is urgently required to support countries' efforts to control the outbreak. There is currently no evidence to recommend serology as an immunity passport and we do not have any long-term data about how effective and long-lasting immunity might be but there will undoubtedly be pressure to implement such measures. It would be helpful if this was coordinated to ensure a consistent approach globally, with consistent standards and requirements, and such an approach is also clearly within WHO's IHR mandate.

As SARS-CoV-2 continues to spread across different geographical regions, with different epidemiological patterns being seen, we await how it will evolve over time and across seasons [in both the north and south hemisphere]. Meanwhile ongoing proactive surveillance should be maintained and the search for effective serological tests, treatments and vaccines be pursued vigorously.

As we start to emerge from the initial phase of the outbreak, international cooperation, collaboration, leadership and authority will be critical – where will it come from?

### Author declarations

All authors have a specialist interest in emerging and re-emerging pathogens and report no potential conflicts.

### Acknowledgments

Francine Ntoumi, Nathan Kapata, Richard Kock and Alimuddin Zumla are members investigators of the Pan-African Network on Emerging and Re-Emerging Infections [PANDORA-ID-NET; <https://www.pandora-id.net/>] funded by the European and Developing Countries Clinical Trials Partnership, the EU Horizon 2020 Framework Program for Research and Innovation. A. Z. is in receipt of an NIH Research Senior Investigator award.

### References

- Candido DDS, Watts A, Abade L, Kraemer MUG, Pybus OG, Croda J, et al. Routes for COVID-19 importation in Brazil [published online ahead of print, 2020 Mar 23]. *J Travel Med* 2020;taaa042. doi:<http://dx.doi.org/10.1093/jtm/taaa042>.
- Flaxman S, Mishra S, Gandy A, Unwin HJT, Coupland H, Mellan T, et al. Estimating the number of infections and the impact of non-pharmaceutical interventions on COVID-19 in 11 European countries. London: Imperial College; 2020. doi:<http://dx.doi.org/10.25561/77731>.
- G20 Leaders' statement: Extraordinary G20 Leaders' Summit Statement on COVID-19. [https://g20.org/en/media/Documents/G20\\_Extraordinary%20G20%20Leaders%E2%80%99%20Summit\\_Statement\\_EN%20\[3\].pdf](https://g20.org/en/media/Documents/G20_Extraordinary%20G20%20Leaders%E2%80%99%20Summit_Statement_EN%20[3].pdf) [accessed 10.04.20].
- Gostin LO, Wiley LF. Governmental public health powers during the COVID-19 pandemic: stay-at-home orders, business closures, and travel restrictions [published online ahead of print, 2020 Apr 2]. *JAMA* 2020;. doi:<http://dx.doi.org/10.1001/jama.2020.5460>.
- Kraemer MUG, Yang CH, Gutierrez B, et al. The effect of human mobility and control measures on the COVID-19 epidemic in China [published online ahead of print, 2020 Mar 25]. *Science* 2020;eabb4218. doi:<http://dx.doi.org/10.1126/science.abb4218>.
- To KK-W, Tsang OT-Y, Leung W-S, et al. Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study. *Lancet Infect Dis* 2020;. doi: [http://dx.doi.org/10.1016/S1473-3099\[20\]30196-1](http://dx.doi.org/10.1016/S1473-3099[20]30196-1).
- WHO. International health regulations. Third Edition 2005 Geneva, <https://www.who.int/ihr/publications/9789241580496/en/>.
- WHO. 2020a. [https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\[2005\]-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\[2019-ncov\]](https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-[2005]-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-[2019-ncov]) [accessed 08.04.20].
- WHO. Updated WHO recommendations for international traffic in relation to COVID-19 outbreak. 2020 <https://www.who.int/iith/en/> [accessed 06.04.20].
- WHO. WHO lists two COVID-19 tests for emergency use [Geneva, 7 April 2020]. 2020 <https://www.who.int/news-room/detail/07-04-2020-who-lists-two-covid-19-tests-for-emergency-use> [accessed 11.04.20].
- WHO. Advice on the use of point-of-care immunodiagnostic tests for COVID-19. Geneva 8th April 2020. 2020 <https://www.who.int/news-room/commentaries/detail/advice-on-the-use-of-point-of-care-immunodiagnostic-tests-for-covid-19> (accessed 11.04.20).
- Wu LP, Wang NC, Chang YH, Tian XY, Na DY, Zhang LY, et al. Duration of antibody responses after severe acute respiratory syndrome. *Emerg Infect Dis* 2007;13:1562–4.
- Zhou L, Liu K, Liu HG. Cause analysis and treatment strategies of “recurrence” with novel coronavirus pneumonia [covid-19] patients after discharge from hospital. *Zhonghua Jie He He Hu Xi Za Zhi* 2020;43[0]:E028. doi:<http://dx.doi.org/10.3760/cma.j.cn112147-20200229-00219>.

Estskild Petersen\*

*Institute for Clinical Medicine, Faculty of Health Sciences, University of Aarhus, Denmark, and Directorate General for Disease Surveillance and Control, Ministry of Health, Muscat, Oman, and European Society for Clinical Microbiology and Infectious Diseases [ESCMD] Task Force for Emerging Infections, Basel, Switzerland*

Brian McCloskey

*Centre on Global Health Security, Chatham House, Royal Institute of International Affairs, London, United Kingdom*

David S. Hui  
Department of Medicine & Therapeutics, Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, New Territories, Hong Kong, China

Richard Kock  
The Royal Veterinary College, University of London, Hatfield, Hertfordshire, United Kingdom

Francine Ntoumi<sup>a,b</sup>  
<sup>a</sup>Université Marien Gouabi, Fondation Congolaise pour la Recherche Médicale, Brazzaville, Congo

<sup>b</sup>University of Tübingen, Germany

Ziad A. Memish<sup>a,b</sup>  
<sup>a</sup>Research Centre, King Saud Medical City, Ministry of Health, Riyadh, Saudi Arabia

<sup>b</sup>College of Medicine, Alfaisal University, Riyadh, Saudi Arabia

Nathan Kapata  
National Public Health Institute, Ministry of Health, Lusaka, Zambia

Esam I. Azhar  
King Fahd Medical Research Center [KFMRC], Faculty of Applied Medical Sciences, King Abdulaziz University, Jeddah, Saudi Arabia

Marjorie Pollack  
International Society for Infectious Diseases, Boston, MA, USA

Larry C. Madoff<sup>a,b</sup>  
<sup>a</sup>International Society for Infectious Diseases, Boston, MA, USA

<sup>b</sup>University of Massachusetts, Division of Infectious Diseases, Worcester, MA, USA

Davidson H. Hamer<sup>a,b</sup>

<sup>b</sup>Section of Infectious Disease, Department of Medicine, Boston University School of Medicine, Boston, MA, USA

Jean B. Nachega<sup>a,b,c</sup>

<sup>a</sup>Department of Medicine and Center for Infectious Diseases, Stellenbosch University, Cape Town, South Africa

<sup>b</sup>University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA, USA

<sup>c</sup>Departments of Epidemiology and International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

N. Pshenichnaya<sup>a,b</sup>

<sup>a</sup>National Medical Research Center of Phthisiopulmonology and Infectious Diseases, Moscow, Russia

<sup>b</sup>Rostov State Medical University, Rostov-on-Don, Russia

Alimuddin Zumla  
Center for Clinical Microbiology, Division of Infection and Immunity, University College London, and NIHR Biomedical Research Centre, UCL Hospitals NHS Foundation Trust, London, United Kingdom

\* Corresponding author.

E-mail addresses: [eskild.petersen@gmail.com](mailto:eskild.petersen@gmail.com) (E. Petersen), [BMcCloskey@chathamhouse.org](mailto:BMcCloskey@chathamhouse.org) (B. McCloskey), [dschui@cuhk.edu.hk](mailto:dschui@cuhk.edu.hk) (D. Hui), [rkock@rvc.ac.uk](mailto:rkock@rvc.ac.uk) (R. Kock), [fntoumi@fcrm-congo.com](mailto:fntoumi@fcrm-congo.com) (F. Ntoumi), [zmemish@yahoo.com](mailto:zmemish@yahoo.com) (Z. Memish), [nkapata@gmail.com](mailto:nkapata@gmail.com) (N. Kapata), [eazhar@kau.edu.sa](mailto:eazhar@kau.edu.sa) (E. Azhar), [pollackmp@mindspring.com](mailto:pollackmp@mindspring.com) (M. Pollack), [dhamer@bu.edu](mailto:dhamer@bu.edu) (D. Hamer), [jnacheg1@jhu.edu](mailto:jnacheg1@jhu.edu) (J. Nachega), [a.i.zumla@gmail.com](mailto:a.i.zumla@gmail.com) (A. Zumla).

Received 12 April 2020

<sup>a</sup>Department of Global Health, Boston University School of Public Health, Boston, MA, USA