

PREFACE

The first case of someone suffering from COVID-19, the disease caused by the novel coronavirus SARS-CoV-2, can be traced back to 17 November 2019, according to media reports on unpublished Chinese government data. However, the “patient zero” is yet to be confirmed. On 31 December 2019, Wuhan Municipal Health Commission, China, reported a cluster of cases of pneumonia in Wuhan, Hubei Province. A novel coronavirus was eventually identified. On January 30, 2020, Director General, WHO, declared coronavirus outbreak as Public Health Emergency of International Concern (PHEIC). On 18 March 2020, WHO and partners launched the Solidarity Trial, an international clinical trial, that aims to generate robust data from around the world to find the most effective treatments for COVID-19. The first recorded case of COVID-19 outside of China was confirmed on 13 January 2020 in Thailand. The first case in India was reported on 30 January 2020 in Kerala. Deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction, WHO made the assessment that COVID-19 can be characterized as a pandemic on 11 March 2020. As of now, 215 countries and territories around the world are under the influence of this virus.

COVID-19 has caused severe disruption across the world. The virus has posed an unprecedented threat to both public health and human lives and the economy of the countries globally. There are variations both among and within countries in the number of cases and in case fatality rates. In general, Europe and the United States have borne the brunt of the infection, while Asian and African countries have been relatively less affected so far. It is not yet clear why such geographical differences exist; they cannot be explained by healthcare facilities alone. The impact of COVID-19 on human health and loss of lives has been devastating. The number of persons tested positive is staggering; so is the number of deaths caused by this virus. One of the questions getting asked the most these days is when will the world be able to go back to the way things were in December 2019 before the pandemic struck. However, this appears to be unlikely to happen soon. Several countries are racing towards developing vaccines to fight the disease while re-opening their economies. But without rapid and effective global cooperation, the world may not exit this crisis safely at all.

In March 2020, Saumyadipta Pyne approached V.K. Gupta with great concern and curiosity about the much-needed scientific response to the COVID-19 pandemic, and suggested that SSCA must respond timely to this global crisis. It was then that we decided to devote a large part of the Volume 18, Number 1 (2020) July issue of our journal ‘Statistics and Applications’ to papers dedicated to the pandemic.

The major purpose of this decision was to motivate the researchers to address the different aspects of this time-sensitive and challenging problem. It was felt that manuscripts based on relevant approaches such as mathematical modelling, biostatistics, bioinformatics, spatial and time series data analysis, epidemiology, health economics, operations research, group testing, etc., will be considered for submission to this issue.

We did have a realization that the authors may present their early research findings in the form of a manuscript that can lead to future major projects and more in-depth studies. Given the time constraints, known techniques of modelling, data mining, correlations with climate and associated variables, available genomic data, geographical positioning, foreign travel, age and other demographic parameters, patients with comorbidity, etc., could form the basis of their study. For instance, even without a definite solution, a study might offer insights into the disease dynamics, its processes and hotspots, etc., especially by analysing the COVID-19 data

as reported publicly by many reliable sources. It would be a necessary scientific endeavour to relate the disease dynamics with demographics, social distancing and lockdown policies, climate, the immunization strategies, genetic variations, antibody testing and early adoption of countrywide preventive measures, and so on. Marking statistically sound hotspots would enable governments to localize the people with positive cases, and then release the rest of the people to return to work and resume normal living. Both human life and livelihood are equally important, and loss of either causes immense suffering that the scientific community must seek to alleviate.

Accordingly, authors from India and abroad were invited to submit their papers for this volume. Despite the pressure on time and the availability of quality data, we note with great pleasure and appreciation that the authors responded with great enthusiasm. However, we do wish to say that the timely availability of quality data and mechanisms and to obtain those will pave the way for better understanding of the dynamics and policy planning.

Thus, the volume 18, number 1 (2020), is divided into two sections. **Section A** contains **8** regular papers submitted to the journal. **Section B** comprises of **13** invited papers focused on the topic of COVID-19, which were also subjected to the usual peer review process.

It may be mentioned here that the views expressed in all the papers on COVID-19 are those of the author(s) only. The journal “Statistics and Applications” and the Editorial Board of the Journal are not responsible for any of the views expressed in these papers.

We would like to express our gratitude to all the authors for responding to our request and contributing to this volume. In fact, this volume has been possible because of the contribution from each one of them. The reviewers have also made a very big contribution by way of finishing the review process in a very short span of time. We are indebted to all the reviewers and thank them profusely for their support. The help received from Dr. Baidya Nath Mandal for bringing the papers in the format of the journal is highly appreciated.

Today, we also recognize that the pandemic COVID – 19 is either re-striking in some countries or continuing unabated in others. The situation is still far from clear and it is possible that many societies may have to re-organize their lives in different ways in a post-COVID world. We also appeal to statisticians, epidemiologists and other related scientists and the authors who contributed to this volume to continue their efforts in learning and unfolding the mysteries about this pandemic. This journal would continue to devote its space on priority to all such researches of current interest. We do hope that the papers in this volume would eventually culminate in some high-profile projects on the most critically important topic of the present.

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