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Editorial

Special issue—Sharing of best practices in response to the COVID-19 pandemic

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On 30 January 2020, the Director-General of the World Health Organization declared that the outbreak of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) constituted a public health emergency of international concern. The ensuing pandemic has led to unprecedented disruption to all our lives. The health and social care workforce has by all accounts responded magnificently to the challenge, adapting existing working practices and procedures to safeguard healthcare workers and patients alike.

The selection of papers included in this special issue describe some of the many ways in which medical physicists, clinical scientists and engineers, in particular, have addressed issues raised during the course of the pandemic. They include a study of the effectiveness of the measurement protocols and algorithms used to estimate core body temperature from thermal mass screening data: Limpabandhu and colleagues [1] present a regression model that generates comparatively accurate estimates of core body temperature from facial skin temperature readings, with potential application in the rapid mass screening of COVID cases. Another topic of widespread concern is the safety and efficacy of personal protective equipment. Here, Prada and co-workers [2] examine the cost-effectiveness of ultraviolet light germicidal irradiation as a disinfection method for non-oil, 95% efficiency (N95) respirators in a clinical setting.

The report by Henderson and colleagues [3] concerns the use of portable imaging equipment to deliver care locally as part of the drive to establish integrated out-of-hospital care facilities. They present the findings of a pilot study that used a portable diagnostic X-ray set to acquire radiographs in residential homes and care facilities. Considering the relevant regulatory and safety issues, the investigators drew up a risk assessment for such procedures, which may enable patients to undergo treatment sooner and without recourse to a hospital visit. How such images may be used in the diagnosis of COVID-19 is the subject of a review undertaken by Moghaddam and Ghavipour [4] into the latest deep learning techniques available for medical image processing.

Equal access to healthcare was the subject of a retrospective cohort study conducted by Tong and colleagues [5], the results of which highlight disparities in the utilization of oncology telemedicine by certain patient groups compared to the general patient population. The findings have important implications for healthcare providers as they work to ensure equitable access to telemedicine and remote access programs.

The above articles will appear as a virtual collection of the Journal[1] on ScienceDirect, to which further relevant papers we receive may be added in due course. I take this opportunity to direct readers to IPEM's member magazine SCOPE, in which a number of relevant articles have appeared during this period.

The changing nature of the virus, and our individual and collective responses to it, means that our daily activities and work patterns are likely to be impacted for some time to come. Such studies may well inform our responses to future health emergencies, as well as those that could be adopted by research and clinical communities elsewhere that continue to be affected by the disease.

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