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Comments on Recent COVID-19 Research in JAMA*

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Abstract

The SARS-CoV-2 that causes the COVID-19 disease is a one-in-a-century disaster that has led to profound structural change in every conceivable aspect of the worldwide community. The COVID-19 pandemic is the most topical subject in the academic community across all disciplines, but especially in the medical and biomedical research disciplines, where attempts to discover a safe, effective, timely, inexpensive, and accessible vaccine is at the top of everyone's wish list. There is a substantial amount of confusion, ambiguity, and misinformation in the academic community, and far more so in social mass media. Leading medical journals, such as the Journal of the American Medical Association (JAMA), The Lancet, and the New England Journal of Medicine, have published informative case studies that seek to provide guidance on COVID-19 at the earliest possible opportunity.

Keywords: COVID-19; SARS-CoV-2; public policy pronouncements; healthcare facilities, medical research; masking; business, economics and finance; opening up society and the economy.

JEL: D81, G32, H12, L82.

“The second wave might, in fact, be the first wave of a mutated form of the virus.”

1. Introduction

The SARS-CoV-2 that causes the COVID-19 disease is a one-in-a-century disaster that has led to profound structural change in every conceivable aspect of the worldwide community. The COVID-19 pandemic is the most topical subject in the academic community across all disciplines, but especially in the medical and biomedical research disciplines, where attempts to discover a safe, effective, timely, inexpensive, and accessible vaccine is at the top of everyone’s wish list. There is a substantial amount of confusion, ambiguity, and misinformation in the academic community, and far more so in social mass media.

As discussed previously in McAleer (2020b), some interesting and topical discussions regarding risk management of COVID-19 have been reported in Yang et al. (2020) on risk management of COVID-19 by universities in China, in McAleer (2020a) on prevention as better than the cure, in Chang and McAleer (2020) regarding alternative global health security indexes for risk analysis of COVID-19, in Chang, McAleer and Ramos (2020) on a charter for sustainable tourism after COVID-19, and in Chang, McAleer and Wong (2020) on risk and financial management of COVID-19 in business, economics and finance.

This paper is an extension of the discussion in Chang, McAleer and Wong (2020) and McAleer (2020b) on the effects of COVID-19 on issues related to public medical and healthcare facilities, medicine, business, economics, finance, and opening up society and the economy.

Leading medical journals, such as the Journal of the American Medical Association (JAMA), The Lancet, and the New England Journal of Medicine, have published informative case studies that seek to provide guidance on COVID-19 at the earliest possible opportunity. The discussion emphasizes some topical and informative discussions on the topic in the Journal of the American Medical Association (JAMA).

2. Discussion

A discussion of insurance coverage of cancer amid COVID-19 in Buntin (2020) provides an invaluable and informative analysis of insurance coverage of cancer treatment amid COVID-19 and highlights critical medical, social, economic, and financial considerations. Different countries have varying coverage of cancer treatment, including private health insurance that might be covered personally, as well as by employers, otherwise known as “job lock”. In the USA, the extent of insurance coverage by Medicaid seems to differ by state, which affects cancer survival relative to coverage by Medicare and private health and medical insurance.

The lack of universal health coverage affects the screening and detection of different types of cancer, and the associated survival rates, according to age, gender, race, employment status, and economic and financial hardship. As governments have a collective responsibility to provide the best health care facilities and services to all of their citizens, the provable and preventable discrepancies and inequities reflect on the societies in which they exist and continue to multiply.

Bauchner, Fontanarosa and Golub (2020) editorialize on maintaining scientific editorial standards in a COVID-19 world, and address the explosion in the number of papers that have been submitted to JAMA Network journals in light of the emphasis on COVID-19 research. Normal editorial decision making has been modified to handle the significantly larger volume of paper submissions. Prescient editorial judgment needs to deal with topicality as understanding, interpreting and explaining the complicated issues underlying COVID-19 is crucial for scientists and non-scientists alike.

However, rushed editorial outcomes leave a window for error which can lead to undermining public trust in scientific integrity. An innovative development has been the speedy publication of a wide range of Comments on published papers as a replacement for the considerable time taken in evaluating Letters to the Editor. Efficient handling of the significantly increased editorial and peer review workload at a time of great need for the world community is emphasized.

Remedial bias in public health policy for COVID-19 in Halpern, Truog and Miller (2020) throws light on cognitive bias during COVID-19 that can affect optimal decision making and effective communication. There is a balance that must be struck between human cognition and statistical science to mitigate the inherent and pervasive bias in treating patients suffering from COVID-19, among other diseases.

The eight types of errors that counteract a scientific approach to effective public health policy, together with appropriate remedies, may be classified as:

- (1) Observable immediacy versus statistical expectations: the “identifiable victim effect” emphasizes the perceived certainty of responding to immediately observable threats to life, as compared with nebulous, uncertain and invisible statistical expectations, a strategy that can only be overcome through community education and informed consent regarding immediate versus future outcomes.
- (2) Optimism versus reality: unrealistic and systematically more optimistic outcomes, as compared with worst case scenarios based on intrinsic uncertainty, lead to imbalances in treatment strategies, though it is recognized that improved education and greater information might be insufficient to deal with systematically hard-wired sub-consciousness in the community.
- (3) Present versus future: introducing intertemporal dynamics to illuminate contemporaneous judgments highlight the fact that the present is not necessarily more advantageous than the future, which has the potential to save more lives by taking a longer term perspective.
- (4) Passive versus active: omission bias suggests that ignoring the health problem is often seen as preferable to taking direct action, with immediately observable and possibly unexpected outcomes, which can only be alleviated through more well-informed strategies.
- (5) Effective communication versus problematic messaging: optimal policy making requires that the public be informed of dealing with immediate danger by balancing aggressive medical interventions with more effective messaging with regard to disease control and curtailing disease spread.

- (6) Positive versus negative policy responses: emphasizing informative and positive outcomes rather than their negative counterparts though more effective distribution of information requires greater community education and more widespread forms of communication, such as through social media.
- (7) Legislation versus prejudice: introducing legal requirements and regulations based on statistics and science over an extended period would enable counteraction against biased political considerations and prejudices.
- (8) Emphasizing good behaviour versus bad: informed communication requires public goodwill, so emphasizing the benefits of sensible community behaviour to protect those who need it the most is more effective than threats of punishment.

Failure to anticipate future consequences in favour of concentrating on immediate benefits leads to the aphorism that failure to plan for the future means there will be no future, or at least not one that future generations will acknowledge with gratitude.

Abbasi (2020) discusses COVID-19, public health inequities and racism and highlights an essential analysis and obligation that needs to be taken seriously by the health profession, politicians of every persuasion, and society. The lifelong wealth of experience of an expert on health inequities and systemic racism is an indictment of society that needs to be addressed and corrected, with perspectives on law enforcement and its effect on public health needing to be understood, respected, and addressed. The incisive and highly informative and expansive interview is one of the best on public health anywhere.

Accurate measurement of mortality and morbidity for COVID-19 is a clear and concise editorial. Zylke and Bauchner (2020) are concerned with the important issue of the accurate measurement of mortality and morbidity for COVID-19. Such accurate measurement of mortality and morbidity is essential for optimal public health policy considerations, which are affected by political considerations, especially in a Presidential election year. The estimated number of deaths that are directly attributable to COVID-19 is undeniably an underestimate as the numbers do not seem to include cases where individuals were not tested for the disease before or after death, as well as misdiagnosis due to overlapping and disguised factors. Deaths that could be indirectly attributed

to COVID-19 include avoidance of care, and lack of access to medical and health care due to other socio-environmental factors such as poverty, hunger and racism, which are often found to be overlapping. Estimates based on “unexplained excess deaths” are aggregate measures that do not take account of mitigating factors, such as the effects of self isolation, social distancing, quarantining, lockdowns, reduced traffic accidents, domestic violence, and deaths arising from COVID-19-induced psychological stress and mental illness. Clear and consistent definitions across all measuring facilities, including all States, are essential to obtain accurate measures of mortality and morbidity to enable meaningful public health policy deliberations.

Pool testing of COVID-19 with limited test availability is the topic on global health by Cherif, Grobe, Wang et al. (2020), who evaluate real-time reverse transcriptase-polymerase chain reaction (RT-PCR) testing for COVID-19 with simulations of pool testing under conditions of limited test availability, that is, in the presence of local testing shortages. Pool testing uses a pooled sample of several patients, with pooled results leading to all patients declared as negative or as positive, with the latter leading to individual testing. All patients declared as negative leads to the likelihood of false negative diagnoses. The experts developed a useful probabilistic model to estimate the risk of false negatives using simulations based on three determining factors, namely COVID-19 prevalence, test sensitivity, and patient pool size.

Among others, it was assumed that all sequential tests are identically distributed based on independent Bernoulli trials, which did not seem to be tested. Under certain stated conditions, the simulations showed that a pool testing strategy was an improvement over individual testing. The test outcomes are random variables, so it would have been useful to consider the confidence intervals of the estimated probabilities of false negative outcomes under a variety of distributional assumptions that might be observed in practice, such as through alternative bootstrapping techniques of the numerical simulations. This would lead to even greater confidence in the invaluable numerical experiments based on simulated pooling of the RT-PCR tests.

The challenges in estimating total lives saved and lost from COVID-19 is evaluated by VanderWeele (2020) based on economic, social connection, psychological, and medical considerations is essential reading for everyone involved in public health care policy decision

making of the extent of the damaging effects of COVID-19 on modern society. Economic, social, psychological, and medical differences arise according to different cultures, countries, regions, and cities, and in how to deal with the first and second waves of the COVID-19 pandemic. Difficult and necessary trade-offs among economic, social, psychological, and medical considerations in protecting the physical and emotional health of individuals, versus opening up society and the economy, are essential challenges to enable society to function effectively rather than descending into chaos. There are serious problems associated with the development of a composite measure of “well-being-adjusted life-years”, which depends on arbitrary and untestable assumptions regarding the quality of life and life satisfaction, especially for the poor, disabled, and those who are least capable of looking after themselves.

Similar difficulties are associated with a “total lives saved” approach, in that questionable assumptions must be made regarding economic, social, psychological, and medical measurements, which can be problematic in themselves regarding their accuracy. Community responses are essential in determining the acceptable trade-offs among economic, social, psychological, and medical options, which would lead to a range of assumptions in the associated models, before sensible, informed, and acceptable public policy considerations can be reached and implemented. This may be difficult during the COVID-19 pandemic, but as the new norm it is essential that any underlying assumptions in alternative modelling approaches be easy to understand, interpret, and communicate so that the associated predictions and prescriptions will not be dismissed by the general public, social media and (especially) politicians as yet another unrealistic set of ill-considered recommendations by academic researchers.

Oncology clinicians, nurses and cancer patients in a COVID-19 world is a comprehensive and sensitive discussion by Shulman, Sheldon and Benz (2020) regarding cancer care treatment. The number of cancer patients is increasing with the population in most countries worldwide, although mortality rates are decreasing slightly, with survivorship increasing steadily. Unfortunately, the increase in the total number of cancer patients is seemingly not accompanied by increases in the number of oncology clinicians and nurses to treat them. All countries, especially those with universal medical and health care facilities, accompanied by institutional or private health care insurance, are leading to larger populations and cancer patients.

The reassessment of public health care considerations in a world that is presently dominated by confusion and inconsistent public policy decisions of how to deal with the COVID-9 pandemic may be leading to a misalignment and misplaced imbalance in public health care funding. Short term public policy decisions regarding COVID-19 will have long term repercussions for the health care system. It is essential for the medical and health care community to emphasize and highlight the importance of health care planning beyond the present short term issues. Failure to plan for future public health care policy and practice will ultimately lead to disaster of known and unknown dimensions, well after the COVID-19 pandemic has flattened out.

Lessons from COVID-19 is a helpful, instructive and cautionary explanations on coronaviruses and pneumonia by Wiersinga and Prescott (2020). Clear and verifiable pronouncements of the symptoms, diagnosis, progression and treatment of the effects of the SARS-CoV-2 virus that leads to the COVID-19 disease after exposure are salutary lessons on the virulent nature of the virus and disease. The discussion gives a warning to individuals of the need to be cautious, extremely so for those with existing comorbidities and weakened immune systems. Alternative tests through swabbing and blood samples are explained in terms of the time taken to obtain positive outcomes, but there is no discussion of their accuracy and success in detecting true positive and true negative outcomes.

Instances of repeat infections are not given extensive coverage, possibly because of a current lack of clinical trials. Alternative treatment options are presented, with an explanation that the lack of a vaccine cannot be replaced by antiviral medications and steroids. The comment: “For most patients, lung function returns to normal after pneumonia”, might be regarded as premature in light of recent findings that COVID-19 deaths have been recorded as leading to blood clots in multiple organs, not just the lungs. Clinical trials of the long term effects on patients who have purportedly recovered from COVID-19 are not yet available.

The topical conundrum of droplets and aerosols in COVID-19 transmission, in a detailed and informative presentation by Klompas, Baker and Rhee (2020), is a significant contribution to recognizing and understanding the spread of the SARS-CoV-2 virus that causes the COVID-19

disease. A related comprehensive discussion of the transmission of COVID-19 by droplets and the lighter evaporating aerosols is presented in Jayaweera et al. (2020). It is a salutary lesson that the World Health Organization (WHO) should accept and publicize, in view of their seeming reticence to acknowledge the prevalence of airborne transmission in both confined and open spaces. If the virus can be carried by aerosols that remain suspended in the air and are carried by currents, it follows that medical masks, ventilators, face shields, and social distancing would not likely be sufficient to provide adequate protection for anyone, let alone health care providers. This should be of immense concern to everyone who relies on PPE - that they might not be sufficiently effective in the face of airborne transmissions.

It is seriously problematic that coughing can lead to secretions of both droplets and aerosols that can travel distances and last for several hours. The lack of clinical trials on how COVID-19 and other types of coronaviruses might be contracted is far from reassuring, as COVID-19 seems to be an especially virulent form of coronavirus. Airborne transmissions should be of concern to all governments that are opening up their societies and economies, such as allowing transportation on public trains and buses, large sporting and theatrical events, beaches, encouraging tourism, and opening up of restaurants, bars, and cafes. The effects of temperature and seasons on the transmission of COVID-19 is as yet unknown because of a lack of clinical and experimental trials, which is another area of research that should be considered seriously. Convincing the WHO of the importance of publicizing the importance of airborne transmissions is essential in making the medical fraternity and the general public aware of the importance of significant care and attention in accessing cautionary protective measures.

Informed consent on COVID-19 is the interesting communication in Saitz and Schwitzer (2020). Such informed consent by a possibly confused patient of proposed treatments and therapy, including medication and surgery, involves the clear communication, explanation, and dissemination of complex information and knowledge by healthcare providers regarding the risks, benefits, and alternative medical options that might be available. It is incumbent upon the healthcare provider to ensure that the patient is fully aware of the procedure to be undertaken, the associated risks and benefits, any viable options that might be available, and their associated risks and benefits. It is in this context that two medical experts provide a comprehensive and

illuminating discussion of how to communicate science during a pandemic, such as COVID-19. Information can be distributed through a variety of outlets, including scientific journals and social media, even though the ever-present “fake news” is always ready to pander to the uninformed and ill-informed, including academics in medical and related disciplines. This excellent Viewpoint highlights several areas of scientific miscommunication, including communication flaws and failures based on incomplete and inadequate scientific trials and experiments, especially studies involving the highly topical remdesivir, dexamethasone, and hydroxychloroquine, for which safety and efficacy are presently unknown.

Causality between treatment and outcome is difficult to prove, even based on numerous large and systematic clinical trials, so it will be insufficient, misdirected and misleading based on a small number of such trials that appear in news releases rather than being published in leading peer-reviewed academic journals. It is easy to be cynical when some international research teams announce through news releases that they have “discovered” a novel treatment of COVID-19, possibly in search of research funds, when the purported findings are based on, say, a small number of patients in ICUs and on ventilators who do not represent the typical patient who is infected with COVID-19. This is made even worse when leading administration officials around the globe announce they are using unproven treatments to guard against possible infection from COVID-19, when caution is needed to protect the unwary, which refers to most individuals, with the possible exception of healthcare workers. While technically not “fake news”, such announcements do an extreme disservice to scientific communication, which needs to stay well ahead of the (mis-)information curve.

A significant analysis of the outcomes for children with COVID-19 in pediatric ICUs is given by Shekerdemian, Wolfe et al. (2020) in light of the statement by the White House Press Secretary Kayleigh McEnany on 17 July 2020, who cited the article in support of the US administration’s plans to reopen primary and high schools in the Fall of 2020. The research is said to have found that coronavirus is “far less” severe in children than in adults, and concluded kids are at “far greater risk” from influenza. The important and extensive Original Investigation, dated 11 May 2020, on critical care by a team of experts from leading US medical schools and hospitals investigated the characteristics and outcomes of 48 children, of whom 40 (or 83%) had preexisting underlying

medical conditions, with 11 (or 23%) having failure in 2 or more organ systems, and were also infected with COVID-19, in pediatric intensive care units (PICUs). It was concluded that “that severe illness is less frequent, and early hospital outcomes in children are better than in adults.” This is a strong conclusion that relies on a small number of children, as compared with the significantly larger population of adults, with and without preexisting medical conditions, in ICUs because of COVID-19.

An even stronger observation was based on admissions to PICUs between 14 March 2020 and 3 April 2020, where it was found that “the overall burden of COVID-19 infection in children remains relatively low compared with seasonal influenza. ... children continue to face a far greater risk of critical illness from influenza than from COVID-19”. This conclusion was based on influenza-related deaths in children 14 years or younger during the entire 2019-2020 influenza season, as compared with COVID-cases for a period of just 3 weeks.

As the cross-sectional study is now more than two months old, a follow-up clinical experimental study is essential, and should consider the following factors:

- (1) a cross-sectional comparison of children in PICUs with adults in ICUs, based on larger and more extensive samples of both children and adults that would now be available;
- (2) separating children and adult patients with and without preexisting conditions, based on 1, 2 or more failing organ systems;
- (3) comparing deaths from influenza and COVID-19 for a longer duration to make comparisons more meaningful and convincing;
- (4) extending the follow-up period for children and adults from 7 days to 3 weeks as a guard against possible reinfection from COVID-19;
- (5) subject to ethical considerations, analyzing the effectiveness on children and adults of pharmacotherapies that are intended to modulate infection from COVID-19, including hydroxychloroquine, azithromycin, remdesivir, and tocilizumab, none of which has yet been found to be safe and effective against COVID-19;
- (6) comparing countries, states, regions, and provinces where opening up the economy, especially schools, to check for differences in children admitted to PICUs.

Medical researchers cannot control the variety of (mis-) interpretations that arise for a number of reasons, many of them political, but emphasizing the caveats associated with experimental clinical trials would highlight the implications for public health considerations of COVID-19 patients, both young and old.

International comparisons of health and social care is a compelling evaluation of quantitative comparisons of cross-national health and social care indicators with individual-level data by Carlson, Roy and Groenewoud (2020). The discussion is highly informative in terms of the quality of care, its effectiveness in terms of health and medical outcomes, and associated costs that are not independent of the quality of health, medical and social care that are dispensed. The domains of potential incommensurability the authors identify affect the extent of use, and the quality and costs of medical, health and social care in terms of in-patient and out-patient services, hospitalization, formal and informal care giving services, tracking of discharged patients, and intensive and extensive home and palliative care. In order to conduct meaningful meta-analysis, the health and social care databases must be accurate, complete, clear, consistent, confidential, accountable, storable, reproducible, conservable, retainable, accessible, comparable, integratable, saveable, protected, quarantined, retrievable, statistically interpretable, computable, and downloadable to widely-used data software processors.

Numerous other issues related to hospital, medical and social care include obesity, exercise versus sedentary lifestyles, active versus passive participation in sport, heart disease, various cancers, alcohol intake, tobacco use, comorbidities and multimorbidities, ethnicity, socio-economic factors, poverty, immigration and language barriers that affect incomes and access to health and life insurance, family coverage, and company versus private health insurance plans, affect mortality and morbidity. The analysis has established a convincing platform for conducting important international meta-analytic comparisons of health, medical and social care services that should prove essential for global public policy considerations.

Past, present and future healthcare in a COVID-19 world is the thesis of an illuminating presentation by Fihn (2020) with a “back to the future” perspective. The volume of informed, uninformed, and ill-informed discussions, especially in politics and social media, as well as high

quality academic research publications in leading journals and across a wide range of disciplines, especially in medical and biomedical research, has been truly staggering. Health care systems, first responders, and health care providers at all levels have shown just how brave and effectively they can function and how hard they work, frequently in situations and in conditions which present life-threatening danger to those whom we need the most. The “comforting familiarity” parallels the popular science fiction time travelling trilogy, “Back to the Future”, where a teenager is propelled from 1985 to 1955 in a DeLorean time machine. The modern medical time traveller takes us on a health care journey that highlights the strengths and strategies associated with general medical care for a wide range of illnesses, as well as emphasizing medical disciplines and subdisciplines associated with complicated technical and costly specializations.

These issues are highlighted in a COVID-19 world in terms of changing hospital wards, accessing PPEs, conducting intensive medical research to develop safe, efficient and affordable treatments and vaccines to tackle the SARS-CoV-2 virus, and providing health care facilities to enable frontline medical and health workers to support patients infected with a deadly virus and disease that can lead to multiple organ failure and death. In the “Back to the Future” trilogy’s first outing, the teenager who time travelled to 1955 was able to befriend his future father and mother, albeit not under life threatening circumstances. It has been said that when the going gets tough, the tough get going, which holds especially true in a world that COVID-19 has thrust upon us all. Such heroic behaviour is heartening to everyone who relies heavily on the many dedicated, talented, inspirational, and courageous healthcare providers in times of great need.

Amabié of COVID-19 and Sadako of the thousand paper cranes is a delightfully heartwarming presentation by Furukawa and Kansaku (2020) who give the highly informed pictorial story about Amabié as a Japanese symbol of COVID-19. This brings to mind the uplifting image of Sadako Sasaki. After being diagnosed at the age of two years as an innocent victim of leukemia from radiation caused by the atom bomb dropped on Hiroshima, Sadako was inspired to fold 1000 origami paper cranes (orizuru) by the Japanese legend that she would be granted a wish upon completion, a wish that she might live with her disease. Sadako bravely survived for ten years after her life-threatening diagnosis. A graceful statue of Sadako holding a crane stands in the Hiroshima Peace Memorial Park, or Genbaku Dome, as a symbolic prayer for peace on earth. Amabié might

be seen as a parallel symbol in Japan and elsewhere as a prayer for manageable healthcare through the discovery of a vaccine for the SARS-CoV-2 virus that causes the COVID-19 disease.

Social distancing, self isolation, conscientious discipline, and respect during COVID-19 is a sensitive and compassionate discussion by Cook and Kahn (2020), who highlight the key issues associated with care for cancer patients, which involves social distancing and self isolation, among other responsible actions, in a COVID-19 world. The difficult suppression and the highly unlikely elimination strategies require conscientious discipline and respect for each other in a COVID-19 world by all members of society, starting from the most senior government administrators, and leading medical and public healthcare officials. Providing quality healthcare for cancer patients with compromised immune systems is demanding of seemingly tireless and heroic healthcare workers at the best of times. However, their inner strength and compassion are called upon more heavily when faced with the extreme likelihood that their patients, as well as they themselves, face the distinct prospect of contracting COVID-19.

On a related issue facing the community, social distancing and self isolation are mandatory in many states, but the wearing of masks is not. Even where masks might be required, there always seem to be exemptions, including joggers and cyclists, which make consistent healthcare advice seemingly ambiguous and confusing. The psychological anxiety, distress and pain suffered by cancer patients, who might also be denied human connection, can be dramatically worsened when faced with the risk of COVID-19. It is at times like these that oncologists, chemotherapy and radiation therapists, oncology nurses, related healthcare professionals, and healthcare and homecare providers demonstrate most poignantly that their career choices are life-saving and dutiful missions for all who need their calming presence and understanding the most, for which we are truly humbled and grateful.

Healthcare and taxes in a COVID-19 world in the context of Joe Biden winning the 2020 presidential election is the outcome analyzed in McInturff and Jarrett Lewis (2020). The informative discussion of healthcare from the perspective of public opinion strategies is very useful in discussing what polled individuals view as the key issues associated with the 2020 Presidential Election. Democratic and Republican registered voters might agree on many overlapping issues

that will determine their preferred candidate. The “Medicare for All” or a public healthcare insurance option system seems to be popular among many voters. The majority of individuals who receive health insurance coverage through an employer are satisfied with their benefits.

The emergence of the COVID-19 pandemic and the disastrous impact on the economy has highlighted the importance of economic issues, with unemployment benefits at the top of the list for the many who have lost their jobs permanently or temporarily. The consequences of COVID-19 on society, education, employment, unemployment insurance, welfare, and healthcare costs, among others, will ultimately lead to an unavoidable increase in tax rates. It would be useful and informative if future public opinion polls were to include a possibly unpalatable question about contingency claims, specifically if the employed are willing to pay higher income taxes to fund those who are suffering from COVID-19. Management of the economy requires all levels of government to be able to collect both direct and indirect taxes to fund public expenditure on behalf of their citizens. It is well known that implementing higher taxes is easier said than done. The economy and taxes should be key issues at all times, all the more so in a Presidential Election year in a COVID-19 world.

Universal masking for the COVID-19 healthcare system is the informative underlying thesis by Wang, Ferro, Zhou et al. (2020), which calls for a far greater analysis of the available data in this clinical trial and elsewhere. Universal masking seems to be a no brainer in a COVID-19 world, but there seem to be exceptions across cities, states, provinces, regions, and countries, including jogging, cycling, clubs, pubs, theatres, cinemas, shopping precincts, beaches, swimming pools, gymnasiums, taxis, public transport, and air transport, among others. The inconsistent, contradictory, and ambiguous advice from governments and healthcare experts seems to be confusing and confounding the general public, who need clear guidance backed up by understandable and unarguably clear medical science.

Stephenson (2020) presciently evaluates the threat by COVID-19 to accessing HIV medications. The informative message warns that the supply of life-saving antiretroviral (ARV) medications to treat HIV is threatened by supply chain and other factors related to the COVID-19 pandemic. This is a serious issue for the estimated 8.3 million people worldwide who were receiving ARVs for

HIV treatment in 2019. A lack of ARV medications would likely lead to a substantial increase in deaths from HIV. For healthcare public policy decision making purposes, it would be useful to calculate the number of HIV patients taking ARVs who have been found to be:

- (1) COVID-19 positive;
- (2) immunized against COVID-19.

Such information would assist in determining the amount of effort that should be directed by the World Health Organization (WHO) and (inter) governmental instrumentalities in improving the supply chain and other factors to improve access to HIV medications that are threatened by COVID-19.

3. Conclusion

The COVID-19 pandemic has highlighted the lack of preparation to deal with earth-shattering structural changes in an increasingly uncertain world. The discussion of the innovative and informative presentations in some recent papers in the Journal of the American Medical Association (JAMA) demonstrate that there are more unknowns than knowns regarding the highly contagious and dangerous SARS-CoV-2 virus that causes the COVID-19 disease. The compelling developments are being highlighted on a daily basis. Sadly, the worst is yet to come, and possibly in several waves, especially given the numerous mutations that seem to be arising.

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