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Novel research opportunities: An unfortunate small silver lining to COVID-19

ABSTRACT

COVID-19 remains pandemic at the time of writing (September 2020) and it has opened up many avenues of research, on itself and on other aspects of medicine and science. This collection of Best Practice Guidelines (BPG) and the one following will review various aspects of COVID-19. Two papers review schools: reported clusters to date globally and the specific preparations made by one specific Maltese school to try to avoid/dampen any outbreaks in the school. Some economic aspects are also reviewed including the effects of the second wave on tourism revenues in Malta and a clarification of how (carefully) raising lockdowns is crucial to revive devastated economies. Three papers deal with statistics; estimating delay to death from surges of cases, demonstrating the second wave globally and by continent, and finally estimating the risk of rare and severe hypothetical adverse events after a vaccine has undergone standard testing and compares this to estimated death rate/s from COVID-19. The results of an influenza and COVID-19 vaccine hesitancy questionnaire in Malta’s healthcare workers are also depicted. One general review reiterates that COVID-19 is ageist, sexist, ruthless, dispassionate and opportunistic, and that protecting our vulnerable while easing restrictions remains crucial. Another review recaps the increased importance of less influenza vaccine hesitancy and less presenteeism among health care workers next winter. We dedicate this BPG to the ill and to the fallen.

1. Introduction

COVID-19 remains pandemic and it has opened up many avenues of research, not only on itself, but also on other aspects of medicine and science [1]. This collection of Best Practice Guidelines (BPG) and the one following will review various aspects of COVID-19.

2. Schooling

Children are an important part of COVID-19 and potential transmission [2]. Social distancing, including school closures has prevented millions of infections and deaths. At the time of writing (September 2020), with public health restrictions easing in an attempt to revive economies [3], a second wave has commenced [4]. Summer school holidays are coming to an end in the Northern Hemisphere and one of the papers in this collection shows that as schools open, outbreaks are almost impossible to prevent and must be minimized so as to keep the reproductive rate <1 [5]. Another paper describes the events leading up to school closures in Malta with reference to San Andrea independent school, and the contingency plans and modus operandi created by the school for safe school reopening so as to avoid or minimize outbreaks, as already witnessed in several other countries [6]. This is because while children may not generally be severely affected [7], they may be in contact with vulnerable members of society on whom COVID-19 is not so forgiving [8].

3. Economics

The economic aspects of COVID-19 are also reviewed. The first paper reviews the second wave in Malta which devastated the tourism industry, a crucial (17% of GDP) source of revenue [4]. The second paper reviews COVID-19 as both a supply-side and a demand-side shock. It also outlines the need of reopening economies and the importance of gradual and careful easing of restrictions as excessive GDP losses may in themselves cause excess short, medium and long term mortality [9]. The paper concludes that the need for unbiased and rigorous quantitative evaluations of all possible public and economic decisions is paramount.

4. Statistics

Three papers are more statistically oriented. Using public domain data, as restrictions are raised, the delay to death from COVID-19 upsurges is estimated at approximately 20 days. This information may alert healthcare systems and hospitals for surges [10]. A second paper using the same dataset demonstrates how globally, we are in the second wave of COVID-19 and how deaths in the second wave are proportionately attenuated when compared to the initial wave. Researchers are racing to develop a vaccine for COVID-19 and vaccine hesitancy is already manifest [11]. A final statistics paper estimates the risk of rare and severe hypothetical adverse events after a vaccine has gone through the appropriate testing phases and compares this to estimated death rate/s from COVID-19. Best case scenarios are used with asymptomatic cases factored in, with estimates of population, case and infection fatality ratios (Population Fatality Rate, Infection Fatality Ratio and Case Fatality Ratio). The paper concludes that even after factoring in up to 80% of COVID-19 being asymptomatic, an effective vaccine that completes phase 3 trials having been administered to 20,000 individuals (as per AstraZeneca ongoing trial) with very few (≤2) or no serious effects is well worth taking [12].

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5. Questionnaires

Since influenza and COVID-19 vaccine hesitancy are so currently topical [11], a questionnaire was circulated to Malta’s healthcare workers. This showed that the proportion of workers who will take the influenza vaccine this year increased significantly when compared to last year. Doctors had the highest baseline uptake and highest likely influenza vaccine uptake this coming winter. The likely/undecided/unlikely to take a COVID-19 vaccine was 52/22/26% respectively and the likelihood of taking COVID-19 vaccine was directly related to the likelihood of influenza vaccination. The concerns understandably raised were related to insufficient knowledge about such a novel vaccine, especially unknown long term or serious side effects, a factor which is addressed in a paper in this BPG, as mentioned above.

6. General reviews

The BPG concludes with two general reviews, one reiterating that COVID-19 is ageist, sexist, ruthless, dispassionate and opportunistic and that protecting our vulnerable while easing restrictions remains of paramount importance. The second paper reiterates the increased importance of less influenza vaccine hesitancy and less presenteeism among health care workers in the COVID-19 era this coming winter. In essence, this paper focuses on a narrower segment of crucial workers and constitutes on a follow-up on an earlier paper that generically discussed influenza vaccination at population level in the COVID-19 era [13].

Dedication

We conclude with a dedication that may state the obvious, but one that we wish to nevertheless profess from our very hearts: the research opportunities that this pandemic has created pale to merest insignificance when compared to the morbidity and mortality that COVID-19 has directly and indirectly inflicted, inflicts and will continue to inflict, even when eventually tamed. We dedicate these collections to the ill and to the fallen.

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Victor Grech*, Sarah Cuschieri*

* Mater Dei Hospital, Malta

Anatomy Department, Faculty of Medicine and Surgery, University of Malta, Malta

Corresponding author.

E-mail addresses: victor.e.grech@gov.mt (V. Grech), sarah.cuschieri@um.edu.mt (S. Cuschieri).