



COMMENTARY

COVID-19 Responses: Unintended and Undiscussed Potential Consequences

Joel B Epstein, DMD, MSD^{1,2*} , Sean Mark, PhD³ and Richard G Mathias, MD, PhD⁴

¹Professor, Cedars-Sinai Health System, Los Angeles, CA, USA

²City of Hope Comprehensive Cancer Center, Duarte CA, USA

³Epidemiologist, Approach Analytics Inc, Vancouver BC, Canada

⁴Professor Emeritus, University of British Columbia, Vancouver BC, Canada

*Corresponding authors: Joel B Epstein, DMD, MSD, Professor, Cedars-Sinai Health System, Los Angeles, CA, USA; City of Hope Comprehensive Cancer Center, Duarte CA, 91010, USA



With the focus upon “flattening the curve”, ongoing non-COVID-19 medical care needs have been displaced and care delayed. These have included oncology care and cardiac care, and research interruption and delay as examples of unintended consequences of the COVID-19 response, the implications of which will be realized in upcoming years [1,2].

Reduction in health care productivity due to infection control recommendations that increase time of preparation and increase time of providers and staff and time between patients may drive costs and limit access to care. For example, time required to prepare the treatment room before and after people receive treatment, reduces the capacity to see numbers of people previously seen reducing access to care.

Not discussed are the potential microbiological and environmental outcomes among the myriad of unintended consequences. Our purpose is to raise these questions for future consideration.

Intensive use of PPE, including disposable (paper), one use items and plastic waste, increased laundering of reusable gowns in delivery of health care and by the public are piling up fast! Evidence of necessary use and awareness of potential environmental impact are of importance.

The continual and widespread use of disinfectants on surfaces and hands may have impacts not yet discussed. These include skin and mucosal irritation, respiratory

tract irritation and potential triggering of respiratory sensitivity and systemic absorption. This includes the potential of sprays for environmental clearing including in streets/public transportation, offices and schools. The potential impact of disinfection in risk in urban wildlife has been shown reported [3]. In the school setting, exposure to children has not been considered. Exposure of school children to repeated personal disinfectant applications and environmental sanitation should at a minimum be monitored for potential positive and harmful effects. Not discussed has been the potential for selection of resistant organisms, which has been seen throughout the history of antimicrobials including antibiotics, antifungals and antivirals. The specter of selection of potentially resistant organisms may haunt mankind for years to come.

Another environmental concern relates to the widespread use of disinfectants released into the air, water, landfills and soils. The potential to impact the water supply and potentially affecting marine organisms including plankton, soil based microorganisms and the food supply. The potential to impact the water supply has been shown in commonly used medications, with measurable levels in the environment including rivers and lakes with medications including antibiotics and hormone therapies (eg: birth control medications) [4-6].

Risk remission of COVID-19 should be assessed with evidence of risk, and evidence of the effect of the response to reduce risk. The outcomes may include finan-



Citation: Epstein JB, Mark S, Mathias RG (2021) COVID-19 Responses: Unintended and Undiscussed Potential Consequences. J Infect Dis Epidemiol 7:190. doi.org/10.23937/2474-3658/1510190

Accepted: January 28, 2021; **Published:** January 30, 2021

Copyright: © 2021 Epstein JB, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

cial toxicity (increased cost of care) and reduced quantity of care delivered (reduced access to care). Environmental impact in its broadest sense and the microbial impact should be assessed. These issues deserve consideration, assessment and planning for the betterment of all.

References

1. Bin Han Ong M (2020) Sharpless: Covid-19 expected to increase mortality by at least 10,000 deaths from breast and colorectal cancers. *Cancer Letter*.
2. Sud A, Jones M, Broggio J, Loveday C, Torr B, et al. (2020) Collateral damage: The impact on outcomes from cancer surgery of the COVID-19 pandemic. *Ann Oncol* 31: 1065-1074.
3. Nabi G, Wang Y, Hao Y, Khan S, Wu Y, et al. (2020) Massive use of disinfectants against COVID-19 poses potential risks to urban wildlife. *Environ Res* 188: 109916.
4. Bexfield LM, Toccalino PL, Belitz IK, Foreman WT, Furlong ET (2019) Hormones and pharmaceuticals in groundwater used as a source of drinking water across the United States. *Environ Sci Technol* 53: 2950-2960.
5. Vulliet E, Cren-Olive C (2011) Screening of pharmaceuticals and hormones at the regional scale, in surface and groundwaters intended to human consumption. *Environ Pollut* 159: 2929-2934.
6. Caldwell DJ, Mastroco F, Nowak E, Johnston J, Yekel H, et al. (2010) An assessment of potential exposure and risk from estrogens in drinking water. *Environ Health Perspec* 118: 338-344.