



University of Louisville Journal of Respiratory Infections

PERSPECTIVE PIECE

Vaccine-Preventable Diseases in the Time of COVID

Thaddeus Zajdowicz^{1*}, MD, MPH; Margan Zajdowicz¹, MD, MPH

¹United States Navy Medical Corps (Retired)

*trzajdowicz@gmail.com

While the world's attention is riveted on the search for a COVID-19 vaccine, we must not lose sight of the pandemic's impact on the prevention of other vaccine-preventable diseases (VPD). The reduction in morbidity and mortality from infectious disease is truly one of public health's greatest accomplishments. [1] Advances in molecular biology have expanded the pool of vaccine platforms and worldwide research efforts towards a COVID-19 vaccine have already produced multiple vaccine candidates leading to several ongoing clinical trials. [2] In the meantime, other pathogens have not vanished as the world's attention is diverted elsewhere.

The risk of resurgent COVID-19 through summer and into the fall and winter season remains high, in the face of economic and political pressures to open up nations under virtual lockdown. It is certain that influenza will reappear in the Northern Hemisphere by the end of 2020. Questions to be asked prospectively include: Will there be enough influenza vaccine available and will the means to deliver the vaccine exist when influenza season returns? The World Health Organization published its recommendations for the composition of the 2020-21 influenza vaccine on February 28, 2020. [3] Will production of adequate amounts of influenza vaccine be possible as multiple companies focus on COVID-19 vaccine? Will the healthcare system be ready to vaccinate for influenza if a surge of new COVID-19 cases occurs at the same time? Since the clinical presentations of COVID-19 and influenza are similar, prevention of influenza is key in reducing diagnostic confusion in the upcoming influenza season. Some evidence from Japan suggests that both infections can coexist, providing additional diagnostic and therapeutic confusion. [4]

Hungerford and Cunliffe note that the pandemic will impact VPD in several ways. [5] Whereas increased hand hygiene, social distancing, and masking may reduce VPD, a negative and more significant impact may be on interruption of vaccination schedules in both children and adults. In the United States, children are already missing doses of vaccines due to the lockdown. [6] The result of missed doses could well be epidemics of measles and diphtheria if the missed doses are not caught up quickly. This impact could occur both domestically and internationally. Additionally, programs to eradicate diseases such as polio will be at risk in nations that already have weak public health programs. As Hungerford and Cunliffe point out, governments and health agencies must monitor other VPD and respond quickly as new outbreaks of those diseases arise.

Finally, evidence is mounting on social media that anti-vaccination groups are actively fighting a proposed COVID-19 vaccine. [7] The term vaccine hesitancy has been used in an effort to lower tensions between pro and anti-vaccine groups [8]; regardless of the term used, failure to deploy vaccines on schedule remains a significant impediment to public health and will only increase morbidity and mortality from infectious disease. Rejection of an effective COVID-19 vaccine by vaccine hesitant individuals will slow the world's ability to emerge from this pandemic and will amplify social and economic harm far beyond what has already occurred. Clinical medicine and public health communities must be prepared to deal with the anti-vaccination threat.

As this is being written, we are at the six-month mark of this pandemic. While a laser focus is appropriately on development and testing of an effective COVID-19 vaccine, we

Recommended Citation:

Zajdowicz, Thaddeus; Zajdowicz, Margan (2020). "Vaccine-Preventable Diseases in the Time of COVID," *The University of Louisville Journal of Respiratory Infections*: Vol. 4, Iss. 1, Article 48.

Received Date: June 12, 2020

Accepted Date: June 26, 2020

Published Date: July 21, 2020

Copyright: © 2020 The author(s). This original article is brought to you for free and open access by ThinkIR: The University of Louisville's Institutional Repository. For more information, please contact thinkir@louisville.edu. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



Funding Source: The author(s) received no specific funding for this work.

Conflict of Interest: All authors declared no conflict of interest in relation to the main objective of this work.

must not forget about the threat of other VPD. Vaccines are said to save lives but the act of vaccination is a crucial step for eradication of infectious disease. An effective vaccine in a vial is of little use until it is administered to a susceptible human.

References

1. Centers for Disease Control and Prevention (CDC). Control of infectious diseases. MMWR Morb Mortal Wkly Rep. 1999 Jul;48(29):621–9. Available from: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm4829a1.htm> PMID:10458535
2. Lurie N, Saville M, Hatchett R, Halton J. Developing COVID-19 vaccines at pandemic speed. N Engl J Med. 2020 May;382(21):1969–73. Available from: <https://www.nejm.org/doi/full/10.1056/NEJMp2005630> <https://doi.org/10.1056/NEJMp2005630> PMID:32227757
3. World Health Organization. Recommended composition of influenza virus vaccines for use in the 2020 – 2021 northern hemisphere influenza season [report on the internet]. Geneva: WHO Consultation; 2020 Feb 28 [cited 2020 May 25]. Available from: https://www.who.int/influenza/vaccines/virus/recommendations/2020-21_north/en/
4. Azekawa S, Namkoong H, Mitamura K, Kawaoka Y, Saito F. Co-infection with SARS-CoV-2 and influenza A virus. IDCases. 2020 Apr;20:e00775. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7184249/> <https://doi.org/10.1016/j.idcr.2020.e00775> PMID:32368495
5. Hungerford D, Cunliffe NA. Coronavirus disease (COVID-19) - impact on vaccine preventable diseases. Euro Surveill. 2020 May;25(18): Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7219030/> <https://doi.org/10.2807/1560-7917.ES.2020.25.18.2000756> PMID:32400359
6. Santoli JM, Lindley MC, DeSilva MB, Kharbanda EO, Daley MF, Galloway L, et al. Effects of the COVID-19 pandemic on routine pediatric vaccine ordering and administration - United States, 2020. MMWR Morb Mortal Wkly Rep. 2020 May;69(19):591–3. Available from: https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e2.htm?s_cid=mm6919e2_w <https://doi.org/10.15585/mmwr.mm6919e2> PMID:32407298
7. Stanley-Becker I. The Washington Post. Trump’s promise of ‘Warp Speed’ fuels anti-vaccine movement in fertile corners of the web [press release] (2020 May 20) [cited 2020 Jun 26]. Available from: https://www.washingtonpost.com/national/trumps-promise-of-warp-speed-fuels-anti-vaccine-movement-in-fertile-corners-of-the-web/2020/05/20/c2b3d408-9ab2-11ea-89fd-28fb313d1886_story.html
8. MacDonald NE. SAGE Working Group on Vaccine Hesitancy. Vaccine hesitancy: definition, scope and determinants. Vaccine. 2015 Aug 14;33(34):4161–.