Clinical Infectious Diseases

SUPPLEMENT ARTICLE

Precision Vaccines: Lessons Learned From the Coronavirus Pandemic

Asimenia Angelidou,[1,2,3] Jay Evans,[4] Olubukola Idoko,[1,5] Ofer Levy,[1,3,6] Nicole Pignatiello Lewis,[1] Etsuro Nanishi,[1,3] Oludare A. Odumade,[1,3,7] Al Ozonoff,[1,3,6] Stanley Plotkin,[8] Amy C. Sherman,[1,9,10] Simon D. van Haren,[1,3] and Elissa R. Weitzman[3,11,12]

[1]Precision Vaccines Program, Division of Infectious Diseases, Boston Children's Hospital, Boston, MA, USA; [2]Department of Neonatology, Beth Israel Deaconess Medical Center, Boston, MA, USA; [3]Department of Pediatrics, Harvard Medical School, Boston, MA, USA; [4]Center for Translational Medicine, University of Montana, Missoula, MT, USA; [5]The Vaccine Centre, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London WC1E 7HT, UK; [6]Broad Institute of MIT & Harvard, Cambridge, MA, USA; [7]Division of Medical Critical Care, Department of Pediatrics, Boston Children's Hospital, Boston, MA, USA; [8]Emeritus Professor of Pediatrics, University of Pennsylvania, Doylestown, PA, USA; [9]Division of Infectious Diseases, Brigham and Women's Hospital, Boston, MA, USA; [10]Department of Medicine, Harvard Medical School, Boston, MA, USA; [11]Division of Adolescent/Young Adult Medicine, Boston Children's Hospital, Boston, MA 02115, USA; and [12]Computational Health Informatics Program, Boston Children's Hospital, Boston, MA 02115, USA

We have all been through a harrowing year. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic affected us, our loved ones, and communities across the globe. Fortunately, innovative approaches and technologies were ripe and poised to contribute to a robust response against this menace. This special supplement of *Clinical Infectious Diseases*, entitled "Precision Vaccines: Lessons Learned From the Coronavirus Pandemic," highlights investigators who presented at the Third Biennial International Precision Vaccines Conference (IPVC; Harvard Medical School, Boston, Massachusetts, 22–23 September 2021).

Addressing the SARS-CoV-2 pandemic has underscored the importance of precision vaccinology—that is, the application of precision medicine principles to vaccine discovery, development, and implementation. Speakers at IPVC 2021 discussed key principles of precision vaccinology that have come into clear focus during the pandemic, including that demographic factors such as age, sex, geographic location, and individual immune status affect (1) susceptibility to and severity of coronavirus disease 2019 (COVID-19); (2) safety and efficacy of COVID-19 vaccines; (3) access to COVID-19 vaccines; (4) vaccine attitudes; and (5) susceptibility to other sequelae of the pandemic, including opioid use disorder. We take the opportunity to thank the Organizing Committee and our Sponsors for their generous efforts in bringing together such a diverse and expert group of investigators.

We invite you to read this article collection from the Third IPVC and encourage the interested reader to contact our supplement authors and connect with the *Precision Vaccines Program* by joining our collaborative Precision Vaccines Network (email: precisionvaccinesprogram@childrens.harvard.edu) as we partner to advance precision vaccinology to address current and future public health challenges.

Note

Supplement sponsorship. This supplement is sponsored by the *Precision Vaccines Program* of Boston Children's Hospital.

Potential conflicts of interest. S. A. P has received funding from Merck, GSK, NovaVax, Takeda, NTx, Vaxart, Moderna, NewLink, OmVax, XVax, Valneva, and Sanofi. O. L. has received support from the NIH/NIAID for a vaccine adjuvant discovery program (contract number HHSN272201800047C) and from Boston Children's Hospital Department of Pediatrics for the *Precision Vaccines Program*. OL have also been named inventor on patent applications regarding adjuvants as adjuvanted vaccines. E. R. W. has received support from the National Institute for Allergy and Infectious Diseases (NIAID) for the development of vaccines for the treatment of opioid use disorder (contract number 75N93020C00038) and from the National Institutes of Health (NIH) (contract number HHSN272201800047C). All other authors report no potential conflicts of interest.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

Correspondence: O. Levy, MD, PhD, *Precision Vaccines Program*, Division of Infectious Diseases, Boston Children's Hospital, Harvard Medical School. 4 Blackfan Street, Harvard Institutes of Medicine (HIM) Room 836, Boston, MA 02115 (ofer.levy@childrens.harvard.edu).

Clinical Infectious Diseases® 2022;75(S1):S1

https://doi.org/10.1093/cid/ciac300