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Maximizing the Potential of Vaccination



John M. Kelso, MD^a, and John B. Ziegler, MD^{b,c} San Diego, Calif; and Sydney, NSW, Australia

Vaccination is regarded as one of the greatest achievements in the history of medicine, preventing untold millions of deaths from an ever-broadening array of vaccine-preventable infectious diseases,¹ most recently including coronavirus disease 2019 (COVID-19).² New vaccines are being developed to improve protection from diseases for which immunization is currently available and to provide protection from diseases for which no vaccines currently exist. Although side effects from vaccination are common, serious reactions are quite rare.³ Unfortunately, the choice of many patients and parents not to accept recommended vaccinations, a phenomenon broadly termed “vaccine hesitancy,” has kept vaccination from reaching its full potential. This month’s theme reviews these issues and provides important information on the critical role of allergist-immunologists in promoting vaccination, evaluating adverse reactions, and addressing the concerns of vaccine-hesitant patients.

The current global pandemic of COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) will only be brought under control with the widespread use of vaccines. The paper by Flanagan et al⁴ brings us up to date on the full range of SARS-CoV-2 vaccines, including those currently in use and those still in development. Poland et al⁵ describe the many developments underway to improve the efficacy of influenza vaccines. Patients who have suffered possible allergic or other adverse reactions to vaccines are often referred to allergists, and Des Roches et al⁶ review the most appropriate evaluation and management of such reactions. The fear of adverse reactions often prevents patients from receiving recommended vaccines, and Turner et al⁷ explore this phenomenon and provide strategies for addressing it.

The development of several vaccines against SARS-CoV-2 infection in less than a year was remarkable, especially considering that no previous mRNA vaccines existed and viral vector vaccines had not been widely used. These advances provide optimism that rapid progress can be made in the development of vaccines to control diseases such as those caused by malaria parasites, respiratory syncytial virus, herpesviruses, hepatitis C, and perhaps even HIV. An exciting feature of these genetic

vaccine technologies is the ready incorporation of new genetic sequences or even new antigens into the products. Still, there are many knowledge gaps regarding COVID-19 vaccination including epidemiological impact, optimal schedules, the role if any of mixing of products, the role in children, and management of serious side effects. It remains uncertain whether COVID-19 vaccination is able to limit emergence of new strains, whether widespread vaccination is critical for that reason, and whether modifications to existing vaccines or development of new ones will be critical to control long term. Yet the importance of wide use of currently available vaccines and strategies cannot be overemphasized. Making COVID-19 vaccination widely available in resource-limited populations is critical.

Although our attention is currently focused on COVID-19 vaccines, we should not forget that hundreds of thousands of patients are sickened each year and tens of thousands die due to other vaccine-preventable diseases in the United States (eg, from influenza and invasive pneumococcal disease)⁸ and around the world (eg, from measles and rotavirus).⁹ What can we do as allergist-immunologists to maximize the benefit of vaccinations for infectious diseases? The first step should be to regularly ask patients about their vaccination status. We often assume that this is addressed by the patient’s primary care provider. This is typically the case for children, where vaccines are routinely administered as part of well-child care. However, vaccination status is addressed less consistently in adults. When we are evaluating patients for any condition, we should not miss the opportunity to get them up to date on their vaccines, including those for influenza, pneumococcal disease, pertussis (Tdap), and shingles. We should take advantage of our expertise in evaluating patients who report adverse reactions to vaccines, or who have been labeled as allergic to vaccines, because in almost all cases, such patients can be safely vaccinated. Finally, we should be vocal advocates for vaccination, stressing the safety and effectiveness of vaccines and thoughtfully addressing patients’ concerns about vaccines.

The COVID-19 pandemic has once again reminded us of our ongoing battle with emerging infectious diseases, but also highlighted our ability to confront and defeat such plagues with vaccines. Let us use this opportunity not only to inquire about and encourage COVID-19 vaccination, but also so to renew our efforts to minimize other vaccine-preventable diseases.

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^aDivision of Allergy, Asthma and Immunology, Scripps Clinic, San Diego, Calif

^bSchool of Women’s and Children’s Health, University of NSW, Sydney, NSW, Australia

^cDepartment of Immunology & Infectious Diseases, Sydney Children’s Hospital, Randwick, Sydney, NSW, Australia

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Corresponding author: John M. Kelso, MD, Scripps Clinic, 3811 Valley Centre Drive, San Diego, CA 92130. E-mail: kelso.john@scrippshealth.org.

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