

# Vaccine and the Need To Be Heard: Considerations for COVID-19 Immunization in ESKD

Vesh Srivatana,<sup>1,2</sup> Caroline Wilkie,<sup>3</sup> Jeffery Perl,<sup>4</sup> and Suzanne Watnick<sup>5,6</sup>

KIDNEY360 2: 1048–1050, 2021. doi: <https://doi.org/10.34067/KID.0001932021>

The coronavirus disease 2019 (COVID-19) pandemic represents an unprecedented challenge in the care of individuals with ESKD receiving maintenance dialysis. These individuals not only suffer from multiple medical comorbidities, but also need to attend in-center dialysis sessions in an era of social distancing, and, in many cases, rely on care partners for daily needs. Herein, we advocate for these vulnerable patients and for their voices to be heard.

“As a home dialysis patient of 11 years, I was very concerned when COVID-19 hit the United States. Since January of 2020, I have been following all the public health guidelines to try not to contract the virus. I have been watching the clinical trials for the vaccines since they started. I felt like the vaccine was the only way we were going to get back to a normal life and the only way I was going to be able to not worry about contracting COVID-19 all the time. I live in Florida where there is an executive order that states that hospital providers may also vaccinate persons who they deem extremely vulnerable to COVID-19. However, all the vaccine registration websites state that you must be over 65 to register for an appointment. I received a letter from my doctor stating my medical need for the vaccine as well as a prescription for it. It was still difficult to get an appointment for the vaccine because there is no infrastructure in place for people who are deemed medically needy despite the executive order. My husband ended up going to the different pharmacies around town to explain the situation and see if they could help me figure out how to get an appointment. He happened on one pharmacy that had extra doses from no shows to appointments and they were able to call the regional headquarters and get approval for me to get the vaccine. I have never felt such relief to get a vaccine. While I understand that I will still need to follow all the public health guidelines, to have that extra layer

of protection makes me feel much safer than I did without the vaccine. I am looking forward to my second shot to get the full effect of that protection.”

## Patient Interest in COVID-19 Vaccination

This patient offers her perspective on COVID-19 vaccination, and a majority of patients share this view. The American Association of Kidney Patients performed an online flash survey in January 2021 and received 700 responses. Whereas 85% had not received the vaccine at the time of survey, 74% indicated they planned to receive vaccine when available, and 78% believed the benefits outweighed the risks. Those unsure about receiving the vaccine cited concerns around safety and effectiveness (1). In January 2021, at one dialysis organization with a socioeconomic, racial, and ethnic diversity similar to metropolitan areas around the United States, patients who had not yet been vaccinated were asked if they would receive the COVID-19 vaccine when available. A total of 1094 (72%) patients reported “yes,” 237 (16%) patients reported “maybe,” and 178 (12%) patients reported “no” (S. Watnick, personal communication). These rates were higher than those from polls of the general population, although sampling bias may be playing a role in such a small sample size.

The Advisory Committee on Immunization Practices provided recommendations to the Centers for Disease Control and Prevention for COVID-19 vaccination, which federal, state, and local government used for implementation of the vaccination program. Patients receiving dialysis were not specifically designated in any phase, despite increased incidence of disease, risk of hospitalization, and mortality. Some patients on dialysis were eligible to receive the vaccine in phase 1a, which included residents of long-term care facilities. However, the majority did not qualify until phase 1b (which included persons aged  $\geq 75$  years) or phase 1c (which included those aged  $\geq 65$

<sup>1</sup>Division of Nephrology and Hypertension, Weill Cornell Medicine, New York, New York

<sup>2</sup>The Rogosin Institute, New York, New York

<sup>3</sup>Private citizen, Punta Gorda, Florida

<sup>4</sup>Division of Nephrology, Keenan Research Center, Li Ka Shing Knowledge Institute, St. Michael's Hospital, University of Toronto, Toronto, Ontario, Canada

<sup>5</sup>Division of Nephrology, University of Washington, Seattle, Washington

<sup>6</sup>Northwest Kidney Centers, Seattle, Washington

**Correspondence:** Dr. Vesh Srivatana, Division of Nephrology and Hypertension, New York Presbyterian Hospital/Weill Cornell Medicine, 505 E 70th St., Suite 140, New York City, NY 10021. Email: [ves2009@nyp.org](mailto:ves2009@nyp.org)

years and individuals aged 16–64 years with medical conditions) (2). Each state has adopted modified versions of these recommendations; although some states have prioritized patients on dialysis, patients must review their local guidelines to determine when they are eligible to receive the vaccine. Nephrologists should be well familiar with local COVID-19 vaccine information to enable informed discussions with their patients.

### Why Patients with ESKD Should Receive the COVID-19 Vaccine

Preliminary data from the Centers for Medicare and Medicaid Services, detailing Medicare claims related to COVID-19 from January 1, 2020 to November 21, 2020, demonstrate that ESKD beneficiaries experience extraordinarily high rates of hospitalization (4,721 per 100,000) in comparison with Medicare beneficiaries aged >65 years (732 per 100,000). This holds true even compared with Medicare patients aged >85 years, who were hospitalized at the rate of 1,436 per 100,000 beneficiaries (3). COVID-19–associated mortality in patients with ESKD is described as roughly 25% (4). Furthermore, patients with ESKD who develop severe COVID-19, requiring admission to an intensive care unit, have a staggering 50% mortality at 28 days (5).

Dialysis providers have adjusted safety protocols to comply with public health efforts to ensure that dialysis can be provided while minimizing COVID-19 risk. However, dialysis centers remain densely populated for patients who attend sessions three times per week. Although patients on home dialysis do not face the same risks of dialysis in congregate settings, they still have similar underlying comorbidities and close contact with care partners (4). The seroprevalence of severe acute respiratory syndrome coronavirus 2 antibodies was between 8% and 9% in a large, national sample of patients with ESKD in the United States (6). However, in the state of New York, seroprevalence rates among those receiving dialysis reached nearly 34% (6).

Despite data demonstrating tremendous COVID-19–related morbidity and mortality among patients with ESKD, they have still not been prioritized for vaccination. Promptly vaccinating this vulnerable group is critical. In the United States, the Food and Drug Administration (FDA) has issued emergency-use authorizations (EUAs) for COVID-19 vaccines that have been effective in the general population with minimal side effects (7,8). The American Society of Nephrology (ASN) has recently sent a letter to the White House advocating for direct vaccine allocation to dialysis providers to oversee and implement vaccination within facilities, analogous to long-standing hepatitis and influenza vaccination programs (9). Dialysis facilities are a lost opportunity for the effective vaccination of patients with ESKD, with staff who are experienced in the provision of other vaccines to this patient population. Large public vaccination sites or retail pharmacies are unlikely to be the first choice for patients with ESKD who are looking to be vaccinated. Many patients have long-standing relationships with their dialysis unit and team, who are uniquely poised to address vaccine hesitancy among their patients. Simply observing other patients with ESKD receiving the vaccine and continuing their usual care serves as a powerful

message to those contemplating vaccination. However, at this time, an initially hesitant patient is left to scramble and call local pharmacies, wait in online queues, or otherwise try to navigate a confusing local vaccine distribution system. Ultimately, this serves as a deterrent to well-meaning vaccination efforts.

The COVID-19 vaccines approved in the United States thus far have shown greater efficacy and safety than anticipated. The Pfizer and Moderna mRNA vaccines, granted EUA in the United States, showed 94%–95% efficacy, with few serious adverse events (7,8). The Johnson & Johnson adenovirus vector vaccine was approved for EUA, also with minimal side effects (10). However, these studies did not include large numbers of patients on dialysis. We know that patients with ESKD exhibit a poorer immune response in several situations, with seroprevalence rates of approximately 50%–60% after hepatitis B vaccination compared with 80%–90% in the general US population (11). Approximately 80% of patients with ESKD develop antibodies after the influenza vaccination (12). Patients with ESKD may experience a similarly decreased immune response to the COVID-19 vaccine. Additionally, the durability of any immune response to a COVID-19 vaccine in patients with ESKD is not clear. A longitudinal, 3-month, serologic assessment of severe acute respiratory syndrome coronavirus 2 infections in a Belgian hemodialysis facility demonstrated a decrease in antibody titer 3 months after natural infection with the virus (13). If the combination of decreased initial immunogenicity to COVID-19 vaccination and a waning response over time is verified for patients with ESKD, the dialysis facility is a logical location to administer COVID-19 booster vaccines. With several vaccines receiving EUA by the FDA, it is likely that the vaccine supply in the United States will increase over time (8,9,11). A discussion about which vaccine is preferred for patients with ESKD will ensue; however, as it stands, patients with ESKD have neither easy access to COVID-19 vaccines, nor a choice in which vaccine they receive. At this time, given the high risk of morbidity and mortality from this disease, patients with ESKD should prioritize getting any approved vaccine that is available to them.

### Summary

The available COVID-19 vaccines are both safe and effective in all subgroups tested in clinical trials published to date. Although patients with ESKD on maintenance dialysis were not well represented, prevailing recommendations are to vaccinate this extremely vulnerable population. Dialysis facilities still represent an untapped resource to quickly and effectively vaccinate patients with ESKD and monitor their response to vaccination. As a kidney community, it is our obligation to advocate for our patients, allowing them to become more resilient as they emerge from the pandemic.

### Disclosures

J. Perl reports receiving research funding and salary support from Agency for Healthcare Research and Quality and Arbor Research Collaborative for Health; having consultancy agreements with AstraZeneca, Baxter Healthcare Canada, DaVita HealthCare

Partners, Fresenius Medical Care, Otsuka, and LiberDi; receiving honoraria from AstraZeneca, Baxter Healthcare USA/Canada, Davita HealthCare Partners, DCI, Fresenius Medical Care, and US Renal Care; and serving on speakers bureaus for Baxter Healthcare and Fresenius Medical Care. S. Watnick reports receiving honoraria from the ASN for the Board Review Course and Update; serving on the ASN Quality Committee and on the editorial board for *CJASN*; having ownership interest in Cricket Health; and serving as the chief medical officer of Northwest Kidney Centers, a not-for-profit organization. C. Wilkie reports having consultancy agreements: with the HOPE Consortium of the University of Pennsylvania, Kidney Health Initiative, University of North Carolina at Chapel Hill, and University of Pittsburgh; and having other interests in/relationships with the National Kidney Foundation. The remaining author has nothing to disclose.

#### Funding

None.

#### Acknowledgments

The content of this article reflects the personal experience and views of the author(s) and should not be considered medical advice or recommendation. The content does not reflect the views or opinions of the American Society of Nephrology (ASN) or *Kidney360*. Responsibility for the information and views expressed herein lies entirely with the author(s).

#### Author Contributions

J. Perl, V. Srivatana, and S. Watnick conceptualized the study; J. Perl, V. Srivatana, S. Watnick, and C. Wilkie reviewed and edited the manuscript; and V. Srivatana, S. Watnick, and C. Wilkie wrote the original draft.

#### References

- American Association of Kidney Patients: Survey: As kidney patients await Covid vaccines, their questions mount, 2021. Available at: <https://www.prnewswire.com/news-releases/survey-as-kidney-patients-await-covid-vaccines-their-questions-mount-301219502.html>. Accessed February 6, 2021
- Dooling K, Marin M, Wallace M, McClung N, Chamberland M, Lee GM, Talbot HK, Romero JR, Bell BP, Oliver SE: The Advisory Committee on Immunization Practices' Updated Interim Recommendation for Allocation of COVID-19 Vaccine - United States, December 2020. *MMWR Morb Mortal Wkly Rep* 69: 1657–1660, 2021 <https://doi.org/10.15585/mmwr.mm695152e2>
- Centers for Medicare and Medicaid Services: Preliminary Medicare COVID-19 data snapshot, 2021. Available at: <https://www.cms.gov/files/document/medicare-covid-19-data-snapshot-fact-sheet.pdf>. Accessed February 8, 2021
- Hsu CM, Weiner DE, Aweh G, Miskulin DC, Manley HJ, Stewart C, Ladik V, Hosford J, Lacson EC, Johnson DS, Lacson E Jr: COVID-19 among US dialysis patients: Risk factors and outcomes from a national dialysis provider [published online ahead of print January 17, 2021]. *Am J Kidney Dis* 10.1053/ajkd.2021.01.003
- Flythe JE, Assimon MM, Tugman MJ, Chang EH, Gupta S, Shah J, Sosa MA, Renaghan AD, Melamed ML, Wilson FP, Neyra JA, Rashidi A, Boyle SM, Anand S, Christov M, Thomas LF, Edmonston D, Leaf DE; STOP-COVID Investigators: Characteristics and outcomes of individuals with pre-existing kidney disease and COVID-19 admitted to intensive care units in the United States. *Am J Kidney Dis* 77: 190–203.e1, 2021 <https://doi.org/10.1053/ajkd.2020.09.003>
- Anand S, Montez-Rath M, Han J, Bozeman J, Kerschmann R, Beyer P, Parsonnet J, Chertow GM: Prevalence of SARS-CoV-2 antibodies in a large nationwide sample of patients on dialysis in the USA: a cross-sectional study. *Lancet* 396: 1335–1344, 2020 [https://doi.org/10.1016/S0140-6736\(20\)32009-2](https://doi.org/10.1016/S0140-6736(20)32009-2)
- Polack FP, Thomas SJ, Kitchin N, Absalon J, Gurtman A, Lockhart S, Perez JL, Pérez Marc G, Moreira ED, Zerbini C, Bailey R, Swanson KA, Roychoudhury S, Koury K, Li P, Kalina WV, Cooper D, Frenck RW Jr, Hammitt LL, Türeci Ö, Nell H, Schaefer A, Ünal S, Tresnan DB, Mather S, Dormitzer PR, Şahin U, Jansen KU, Gruber WC; C4591001 Clinical Trial Group: Safety and Efficacy of the BNT162b2 mRNA Covid-19 vaccine. *N Engl J Med* 383: 2603–2615, 2020 <https://doi.org/10.1056/NEJMoa2034577>
- Baden LR, El Sahly HM, Essink B, Kotloff K, Frey S, Novak R, Diemert D, Spector SA, Rouphael N, Creech CB, McGettigan J, Khetan S, Segall N, Solis J, Brosz A, Fierco C, Schwartz H, Neuzil K, Corey L, Gilbert P, Janes H, Follmann D, Marovich M, Mascola J, Polakowski L, Ledgerwood J, Graham BS, Bennett H, Pajon R, Knightly C, Leav B, Deng W, Zhou H, Han S, Ivarsson M, Miller J, Zaks T; COVE Study Group: Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine. *N Engl J Med* 384: 403–416, 2021 <https://doi.org/10.1056/NEJMoa2035389>
- American Society of Nephrology: American Society of Nephrology statement requesting prioritization of dialysis patients and frontline dialysis staff for COVID-19 vaccination, 2020. Available at: [https://www.asn-online.org/news/2020/2020\\_12\\_22\\_COVID\\_19\\_Vaccine\\_Statement.pdf](https://www.asn-online.org/news/2020/2020_12_22_COVID_19_Vaccine_Statement.pdf). Accessed March 12, 2021
- US Food and Drug Administration: FDA issues emergency use authorization for third COVID-19 vaccine, 2021. Available at: <https://www.fda.gov/news-events/press-announcements/fda-issues-emergency-use-authorization-third-covid-19-vaccine>. Accessed March 16, 2021
- Stevens CE, Alter HJ, Taylor PE, Zang EA, Harley EJ, Szmunes W: Hepatitis B vaccine in patients receiving hemodialysis. Immunogenicity and efficacy. *N Engl J Med* 311: 496–501, 1984 <https://doi.org/10.1056/NEJM198408233110803>
- Scharpé J, Peetermans WE, Vanwalleghem J, Maes B, Bammens B, Claes K, Osterhaus AD, Vanrenterghem Y, Evenepoel P: Immunogenicity of a standard trivalent influenza vaccine in patients on long-term hemodialysis: An open-label trial. *Am J Kidney Dis* 54: 77–85, 2009 <https://doi.org/10.1053/ajkd.2008.11.032>
- Labriola L, Scohy A, Seghers F, Perlot Q, De Greef J, Desmet C, Romain C, Morelle J, Yombi JC, Kabamba B, Rodriguez-Villalobos H, Jadoul M: A longitudinal, 3-month serologic assessment of SARS-CoV-2 infections in a Belgian hemodialysis facility. *Clin J Am Soc Nephrol* 16: 613–614, 2021 <https://doi.org/10.2215/CJN.12490720>

Received: March 22, 2021 Accepted: April 7, 2021