

Lessons Learned for the Next Pandemic: Comments from National Kidney Foundation

The COVID-19 pandemic has already taken a significant toll on kidney patients. Data suggest that the mortality rate for patients with kidney failure on chronic dialysis who develop COVID-19 is in the range of 10-20% and Medicare beneficiaries with ESRD have the highest hospitalization rate of any group.ⁱ Moreover, patients are entering the hospital with COVID-19, and emerging as kidney patients. Early data from New York City indicate that 20 to 40 percent of COVID-19 ICU patients develop acute kidney injury (AKI) and need emergency dialysis. It is too soon to tell if these patients will recover or will develop chronic kidney disease.

We at the National Kidney Foundation (NKF) appreciate Chairman Alexander's foresight in taking the lessons we are learning now to prepare for future pandemics. We have been actively engaged with HHS in advising them in the needs and struggles of kidney patients coping with the current pandemic and are pleased to offer the following recommendations to ensure that our health care system is adequately prepared for future pandemics, natural disasters, or other unexpected disruptions:

1. Ensure adequate supplies of PPE and testing materials
2. Ensure adequate supplies of dialysis machines, supplies, and workforce
3. Increase utilization of home dialysis
4. Provide guidance and processes to ensure the safe continuation of essential surgeries
5. Make permanent and expand the use of telemedicine
6. Increase awareness of CKD and outreach to at-risk communities

1. Ensure Adequate Supplies of PPE and Testing Materials

NKF supports the proposal to rebuild and maintain federal and state stockpiles and improve medical supply surge capacity and distribution. During the COVID-19 pandemic, we urged the Administration to work with FEMA to ensure that supplies of personal protective equipment (PPE) provided by the federal government was distributed as quickly as possible to areas with reported shortages. In the future, PPE released from the stockpile should be distributed to patients who are most at risk, especially dialysis and transplant patients, their families, and their health care practitioners, including dialysis facilities. The same concerns would apply for testing and distributions of vaccines or therapies; kidney and transplant patients, providers, and caregivers need to be prioritized.

2. Ensure Adequate Supplies of Dialysis Machines, Supplies, and Workforce

During peak utilization of ICU beds in New York City, shortages of dialysis machines and accompanying supplies were reported. Doctors were sharing machines between COVID-19 patients with AKI, who instead of getting the continuous renal replacement therapy they required, were only getting it for twelve hours a day. Specialized dialysis nurses and technicians were in short supply, as were the special fluids and filters used by the dialysis machine.ⁱⁱ A recent article in the *Clinical Journal of the American Society of Nephrology* further details this experience, and its authors conclude by saying:

The result of our experience is that we must now highlight the possibility that before a deficiency of ventilators become an issue in caring for patients with COVID-19, provision of kidney replacement therapy (*i.e., dialysis*) may face critical shortages. This occurrence is particularly likely in the absence of national or regional efforts to increase supply and ensure that fluids and consumables are delivered to those centers with the most pressing needs. Contingency planning is appropriate and must be instituted now by medical centers that may

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soon face the full strength of this pandemic.... We think it is time for medical authorities and ethicists to consider explicitly considering the possibility that KRT (Kidney Replacement Therapy) will have to be allocated at this time and in future public health disasters.ⁱⁱⁱ

There was no prior indication, from China or from Europe, that AKI would occur on this scale and require this response.^{iv} In planning for future pandemics, we must take into account the unknown toll that a novel infection could take, and ensure that proper supplies and training are available in a short period of time to respond. NKF proposes that machines and equipment to provide acute dialysis and continuous kidney replacement therapy be included in the national stockpile, and that reliable inventories of disposable supplies for the equipment be maintained to facilitate provision to areas of need in a timely fashion. NKF also proposes greater transparency in the decision-making and allocation of these supplies from strategic inventories.

In addition to having a strategic reserve of supplies and equipment, federal and state agencies should work with key equipment suppliers to ensure they have the capacity to rapidly accelerate production and distribution of equipment and supplies in an emergency.

Finally, the dialysis workforce should be supported and expanded to ensure there are enough trained providers to deploy in an emergency. Many dialysis providers contracted COVID-19 and had to quarantine, and some were not trained in all the available treatment modalities that had to be used when supplies for the usual course of care were short.

3. Increase Utilization of Home Dialysis

One of the major concerns with an infectious disease outbreak is maintaining isolation, especially of vulnerable patients, to slow or stop the spread of the disease. Unfortunately, despite being vulnerable patients, many kidney patients who receive dialysis do so in congregate “in-center” dialysis clinics, where social distancing and infection control is much harder to achieve. They travel to these clinics multiple times per week, and many do so on public transportation or through ride-sharing, sit side-by-side with other dialysis patients for several hours, and then travel home again.

Home dialysis allows a patient to receive their supplies and dialyze at home, on their own schedule. It prevents unnecessary travel, congregation at in-center clinics, and potential exposure to infection. While many patients prefer this method of treatment, it is under-utilized in the United States, which has leaned heavily on the brick-and-mortar in-center dialysis model, despite patient complaints of the difficulty of scheduling and obtaining reliable transportation to and from their appointments.

To prepare for future pandemics and protect vulnerable kidney patients, NKF proposes increasing the use of home dialysis, including incentivizing patients to move to home dialysis permanently and/or in emergency situations, and providing and paying for trained dialysis providers to assist patients in their home to ensure the optimal set up and/or transition to home dialysis. Furthermore, for patients who cannot move to home dialysis, there must be safer, more reliable transportation options that also coordinate with state and local health department to aid in contact tracing, transparency, and accountability. Transportation organizations must be committed to ensuring safe and reliable transport, and that includes a guarantee to be able to safely transport ill patients as well. Dialysis is a life-sustaining, mandatory treatment that cannot be paused or stopped even in the case of a patient becoming ill with an infectious disease.

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4. Provide Guidance and Processes to Ensure the Safe Continuation of Essential Surgeries

In the beginning of the COVID-19 pandemic, there was concern that some kidney-related surgeries, including transplants and vascular access procedures, were being considered elective rather than essential procedures. We appreciate that HHS acted quickly to re-classify both transplant surgeries and vascular access procedures as essential. NKF would ask that these classifications remain, and that additional guidance and processes be instituted to allow for the safe continuation of these procedures in future emergencies.

5. Make Permanent and Expand the Use of Telemedicine

NKF is grateful for the telehealth flexibilities extended to providers and patients during the COVID-19 pandemic, including removing the location requirements, expanding the methods to include telephone-only interactions, and allowing all outpatient dialysis services to be provided via telehealth. These are important improvements, especially for immune-suppressed transplant patients and vulnerable dialysis patients who must remain in contact with their healthcare providers while also isolating from the pandemic. In the future, we would request the expansion of telehealth and telemedicine to include remote lab draws for dialysis patients.

6. Increase Awareness of CKD and Outreach to At-risk Communities

NKF applauds the CDC for recognizing that patients with chronic kidney disease (CKD) are at higher risk for severe illness.¹ Given their compromised immune systems and multiple comorbidities, kidney patients will almost certainly be at elevated risk for infectious disease, and it is important for people with CKD to know and understand their risk. Unfortunately, awareness of CKD is low among both clinicians and patients and so it often goes undiagnosed until its latest stages. We are concerned that patients with undiagnosed CKD who are at high risk from infectious diseases may not be appropriately triaged for testing and subsequent care.

In the planning for future pandemics, state and territorial health departments should facilitate the testing of high-risk patients for both infectious diseases and CKD. Doing so will enhance our national response to pandemics and improve population health and our resiliency to future public health threats. NKF would be pleased to work with CDC and partners at the state and territorial level to facilitate the identification of all high-risk patients and ensure they are managed appropriately, both for the purposes of preparing for future pandemics and for improving the health of the nation.

Conclusion

As America copes with the fallout from COVID-19 and prepares for future outbreaks pandemic, it will be important to analyze what we have learned in the last few months. Hopefully, we have learned that availability of PPE and adequate testing capacity must be prioritized at a national level, and coordination and transparency in deploying these resources is essential. Similarly, while we cannot predict the nature of the next pandemic, ensuring that resource-intensive care like dialysis is also considered essential, and that those supplies are stockpiled and made available is equally important. Supporting our healthcare

¹ <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html>

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workforce, which is simultaneously essential and at a high risk of infection, is crucial to ensuring the health of the rest of the nation.

Recognizing that kidney patients are uniquely at risk for infectious diseases, partially due to the nature of kidney disease but also due to the nature of the treatments of dialysis and transplantation, it is essential that we develop and promote therapies that allow patients to maintain social distancing and continue to engage with their healthcare providers. We need to move more patients to home dialysis and have a system in place to quickly transition patients to home when an emergency requires it. We must continue and expand the use of telehealth and telemedicine provisions that allow patients to remain safely isolated while still receiving necessary care, such as lab work. We must ensure, as much as possible, that life-changing surgeries such as transplant and vascular access are considered essential and hospitals and transplant centers are given the regulatory and supply support needed to safely continue these procedures. And finally, because chronic kidney disease is a disease multiplier, we must make additional investment in the identification, treatment, and prevention of chronic kidney disease to ensure fewer Americans experience its adverse effects and advance to End-Stage Renal Disease, where, as dialysis and transplant patients, they are at increased risks of infectious disease.

We appreciate the Chairman's foresight in asking for input now and for looking ahead to prepare for the next pandemic or public health emergency. We at NKF stand ready to assist the Chairman, Congress, and the Administration in continuing to protect kidney patients and support the American healthcare system. If you have any questions about these or other kidney-related initiatives, please reach out to Lauren Drew (lauren.drew@kidney.org).

ⁱ <https://www.cms.gov/blog/medicare-covid-19-data-release-blog>

ⁱⁱ <https://www.npr.org/sections/health-shots/2020/04/19/838103327/shortage-of-dialysis-equipment-leads-to-difficult-decisions-in-new-york-icub>

ⁱⁱⁱ <https://cjasn.asnjournals.org/content/15/6/880>

^{iv} <https://cjasn.asnjournals.org/content/15/6/880>