Dear Father Asclepius and Mother Hygieia,

It has been weeks now. The days and hours have become meaningless and time is marked, not by the calendar or clock, but by the uncomfortably familiar hum of the pager, going off at any hour of the day or night, like a Siren’s song. It has become a call to action in a fight that has consumed our lives.

The new enemy is one that we never expected, but quickly have come to respect and fear. Our nephrology universe has been replaced by one entity: “COVID-19.” Even sleep, an already ill-afforded luxury for nephrology fellows, has been tainted with the memories of this virus, morphing our dreams into a nightmarish monstrosity that will forever remain crystal clear in our minds.

And all the while we wonder, “What have we gotten ourselves into?” The incalculable hours put into residency studying and observing a range of disease and practicing the craft of medicine could never be enough to feel ready for this carnage. Dozens of patients with respiratory failure, the ICUs filled to the brim, new parts of the hospital becoming makeshift ICUs, and trainees from all different specialties, just like us, nervously taking up arms to try and make an iota of difference in this unrelenting and unforgiving disease. Eventually, the spotlight turned towards us.

The calls and pages poured in. “Rapidly worsening AKI,” “anuria,” “acidosis,” “fluid overload,” “hyperkalemia,” “hyponatremia”; all came relentlessly storming through. Our armamentarium of fluids, diuretics, potassium binders, discontinuation of nephrotoxins, and blood pressure management fell by the wayside. Most of the patients presented to us already needing our final line of defense: dialysis.

We wish we could say it stopped there. As the number of patients with kidney injury ballooned, our resources began to dwindle. We had to get creative with our treatments, utilizing unconventional dialysis fluids, switching modalities from CVVHDF to CVVHD as a means to conserve fluids, using old, yet battle-tested strategies like SLED, managing a suddenly decreasing supply of filters, keeping a tight grasp on numbers of dialysis machines available, and pushing our dialysis nurses and staff to the brink by dialyzing patients around the clock. Our leadership reinforced our resolve, redeploying additional faculty, innovating safety protocols in the dialysis units, acquiring supplemental equipment and dialysis nurses, and developing tele-visits to provide outpatient care.

This was all done to give us and the patients a fighting chance. We spent hours and hours discussing with ICU staff and nursing, troubleshooting problems with dialysis machines, changing modalities, dealing with clotting filters, changing parameters of machines just to keep patients going. We were doing things that even our seasoned veterans and generals of the field had never done before. We had to make do with what we had, for as long as we could, because we knew what was inevitably coming; there were too many sick patients and not enough we could do for them.

What continues to keep us awake at night are the conversations with the families and patients trying to explain that there was simply not enough we could do to stop this virus from its killing frenzy. Day in and day out, for all these painfully long weeks, the conversations have happened daily, and each one plays over and over like a broken record. What will remain with us forever is the desperation in the voices of these patients and families grasping at every word for hope or reason. “Please doctor, do everything you can,” “he is all I have,” “she was perfectly healthy before this.” Those words fester like a wound. And to have to lose battle after battle was not something anyone was prepared for, from fellow to seasoned attending. The ugly reality of this disease and of this war is that this is something we have never seen before in our lives. Our only hope is that we never see this again.

So we write to you in these brief moments of anxious tranquility that we seldom find, as we wait for the next patient, to tell you that this burden has been impossible to carry alone. The things we have been through as a family in medicine, the things we have had to do will never be forgotten. The emotional tumult combined with the constant threat of disease we have endured have weighed heavily on us. We have spent weeks isolating ourselves, avoiding our loved ones to avoid infection, and have dedicated most waking hours to the service of our patients. We have all donned our armor of masks that have left us bruised and battered, face shields and disposable scrubs that have left us unrecognizable to our patients. Make no mistake; this pandemic will have lasting effects far beyond what is currently seen.

And yet we have also witnessed an entire health care community working in harmony: physicians redeployed, nursing care expanded, respiratory therapists managing countless ventilators, pharmacists dispensing record number of medications, makeshift ICUs constructed overnight, sanitation and nutrition services working to keep us safe and well fed. The surrounding communities and local businesses have provided their overwhelming support by showering us with shelter, food, clothing, PPE donations, and so much more. As a
nephrology division we collaborated on patient care on a whole new scale, bonds were made, brothers and sisters in arms. Our failures led to research questions; we felt compelled to share our experiences, to prepare, to continue to innovate.

Dear Father and Mother, we know that others have battled enemies as seemingly impossible to conquer as this one. We look back at smallpox, polio, other diseases only known to us from the pages of textbooks and feel a kinship we never knew before with our predecessors, who could only keep watch while these viral scourges did their worst. We hope that we will live to see this virus join the ranks of the vanquished. For now, we will march forward with the techniques we have learned and the people we have saved, and we will honor those we have lost but never forgotten.

Your humble soldiers,

The Northwell Nephrology Fellows

In addition to the named authors, the Northwell Nephrology Fellows include Hugo Andrade Paz, Bessy Suyin Flores Chang, Shamir Hasan, Aireen Kuan, Varun Madireddy, and Abdulrahman Muzib.

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