The Nephrology Nursing Shortage: Insights From a Pandemic

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For over a decade, nephrology nurses, including those with dialysis expertise, have been in short supply, reflecting a broader nursing shortage in the United States. By 2030, experts project a national deficit of more than 900,000 nurses, largely attributed to a growing elderly population and limitations in nursing school capacity. Vacancies across nursing positions are estimated at 8%-17%, depending on region and specialty. In nephrology, data from the US Renal Data System estimate an annual 5%-7% deficit in registered nurse positions at outpatient dialysis facilities since 2004. In 2018, this meant 1,750 open registered nurse positions. However, these data exclude inpatient, predialysis outpatient, and transplant positions and do not account for regional variation. No national database tracks nephrology nursing needs across all settings.

Although the nephrology nursing shortage existed before the coronavirus disease 2019 (COVID-19) pandemic, the pandemic’s unprecedented demand for dialysis highlighted its urgency. In this editorial, our physician and nephrology nursing team proposes strategies for the nephrology community to promote recruitment and retention of nurses and stem the looming workforce deficit as a majority approach retirement age.

COVID-19 and Nephrology Nursing: Exposing Vulnerabilities in the Workforce

Nephrology nurses, with their significant specialization, are not fungible; proficiency in dialysis management requires technical and patient-level experience gained over months. Their skills include operating and troubleshooting dialysis equipment, managing vascular access, and recognizing and responding to subtle changes in a patient’s clinical status. They largely function independently in outpatient and inpatient facilities where nephrologists are not always on site. Other nurses cannot substitute for them on short notice.

The COVID-19 pandemic pushed nephrology nursing services to their limit. It overwhelmed hospitals with demands for dialysis in patients with acute kidney injury and kidney failure. For example, at our hospital, from March to April 2020, the demand for bedside hemodialysis treatments tripled, and continuous kidney replacement therapy (CKRT) patient-days more than doubled.

In outpatient dialysis units, nurses faced rapidly changing COVID-19 screening and testing guidelines. They learned to triage patients with suspected COVID-19 infection, and to care for infected patients with less in-person support by nephrologists, who often delivered telehealth services. Nurses faced additional pressure from the significant proportion of hospitalized COVID-19 patients with acute kidney injury who remained dialysis dependent after discharge.

Nationally, nephrology leaders responded to the crisis with stopgap measures. The American Nephrology Nurses Association (ANNA) created a webtool for nephrology nurses to identify high-need regions and volunteer their time. Facilities used patient care technicians (PCTs) and nephrology fellows to assist with dialysis machine management. Nephrologists also produced dialysate in house to overcome commercial shortages, used urgent-start peritoneal dialysis owing to lack of hemodialysis machines, and modified CKRT prescriptions to extend filter life.

Despite these adaptations, it was clear that the most vulnerable resource for delivering lifesaving care for kidney patients was the expertise of a nephrology nurse.

Strategies for Nephrology Nurse Retention

About 17% of newly licensed nurses leave their first job within 1 year, 33.5% within 2 years. One survey study of new nurses (n = 1,653) estimated that over 3 years, turnover costs to US health care systems were $1.4-$2.1 billion. In nephrology, high turnover is problematic because competent nurses require between 3 and 9 months of...
The reasons for such high turnover rates are not fully understood but are likely influenced by satisfaction with the work environment. Thus, in times like the COVID-19 pandemic, when the nurse workforce is strained, retention is threatened. The nephrology community needs to promote nephrology-specific nurse retention by creating positive work environments. This requires prioritizing work-life integration and workplace safety, including minimizing physical demands and hazards (long hours, chemical exposures, heavy lifting, etc).

Nurse-to-patient ratios have been extensively debated with respect to their impact on patient outcomes and nursing burnout. Amidst this ongoing debate, the nephrology community, particularly dialysis organizations, must ensure that nurses practice at the top of their license—meaning that they are not overburdened with administrative duties that can be delegated to other staff members and PCTs. Strategic use of these personnel can allow nurses to focus their effort on direct patient care and thereby reduce burnout.

Nephrology fellowship programs should incorporate interprofessional curricula to help nurses and fellows learn with (and from) each other. This can facilitate teamwork, enhance patient safety, and promote efficient use of dialysis resources—all of which promote nurse retention. Workplace safety is also key to nursing satisfaction and retention, and translates into better patient outcomes. Like the work-related fatigue that led to reform in physician residency training, the number of hours nephrology nurses work is a serious concern. In a survey of 1,070 nurses, 35% reported working more than 12 hours a shift. Hours were reportedly higher among nurses performing inpatient dialysis, who at times logged 16-18 consecutive hours. Nurse leaders must be equal partners in their organizations’ executive committees to ensure policies are implemented to prioritize workplace safety.

Finally, offering current nurses opportunities for continuing professional education, including pathways to Certified Nephrology Nurse and Certified Dialysis Nurse, can promote retention. Forty percent of recently surveyed nurses reported that their organizations did not offer continuing education opportunities or financial support for initial certification exams.

Strategies for Nephrology Nurse Recruitment

Efforts to increase the nurse pipeline are urgently needed, particularly as the majority of the current workforce approaches retirement age. Only approximately 10% of the general nursing workforce is less than 30 years old. At our hospital, nearly 50% of the nephrology nurses have more than 30 years of experience. Our most experienced nurse has been in the field for 42 years. We must ensure that these experienced nurses can mentor and train new nurses before leaving the workforce in large numbers. Also, we have to be prepared that the stresses of COVID-19 could accelerate the retirement of older nurses.

One strategy to recruit new nurses is to partner nurse leaders with nursing schools. Most nursing school curricula have minimal, if any, clinical exposure to kidney replacement therapies. Bundling nephrology with required clinical experiences in acute and long-term care, and designing elective nephrology rotations, would expose students to careers in the field. Dialysis organizations and nephrology practices should likewise partner with nursing schools as clinical sites for students to gain nephrology exposure. Such experiences should emphasize the dynamic nature of nephrology nursing—from caring for critically ill hospitalized patients to educating patients on home dialysis therapies.

Nurse residency programs are another path to recruitment. In such programs, nursing school graduates are hired at entry-level salaries as “nurse residents.” After a 6-month curriculum designed to give them skills in a specific specialty, they are promoted to “nurse clinician” with a modest salary increase. Although limited, these programs have been successful in nephrology: one university hospital reported filling long-term vacancies in their acute dialysis staff through its program. The model can also be used to recruit non–hospital-based nurses, including those needed to grow home dialysis modalities, which is a focus of federal policies addressing kidney health.

Recruitment might also be enhanced by addressing the burdens of prior training. Sixty-five percent of new nurse graduates carry educational debt and for 25% of graduates, this debt exceeds $25,000. Loan forgiveness programs may attract new nurse graduates into the field. The Federal Public Service Loan Forgiveness Program is available for nurses employed by government or not-for-profit
Agencies, but other employers should consider offering them in exchange for a defined service commitment. In 2019, a bill introduced in Congress would have expanded the National Health Service Corps Scholarship and Loan Forgiveness Programs to include nephrology professionals in underserved regions. The nephrology community should advocate for similar national programs to ensure that the workforce is available to support the goals of recent kidney health initiatives.

A final recruitment tactic is through increasing community awareness about kidney disease, currently a major focus of national kidney health policy. The nephrology community can leverage awareness campaigns to highlight the important roles of nurses in kidney care. Professional organizations like the National Kidney Foundation, the American Society of Nephrology, ANNA, and the Renal Physicians Association should partner to stimulate interest in nursing careers. Current strategies used to recruit nephrology fellows—social media campaigns, informational videos, mentoring networks, programs at national meetings—may also be effective in attracting nursing students.

Conclusion
The dialysis crisis of the COVID-19 pandemic is a cautionary tale, and a reminder that the nephrology nursing pool is a limited resource in providing lifesaving therapies to a vulnerable population. Current projections suggest there will be fewer nephrology nurses at a time of steadily increasing need. Accurate national and regional data on nursing deficits are needed to fully appreciate the scope of this problem. COVID-19’s short-term burden on inpatient and outpatient nursing was significant, but its long-term effects, including the potential for increased incidence of chronic kidney disease and kidney failure, remain unknown. Therefore, all stakeholders—nephrologists, dialysis organizations, patient advocacy groups, hospitals, academic institutions, and health care systems—must ensure the vitality of the nurse workforce. Lives depend on it.

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