These are certainly interesting times for nephrology education. As the number of patients with chronic kidney disease increases, the number of trainees seeking careers in nephrology is not keeping pace. The nephrology workforce forms the ASN, so this month we examine personnel issues, including changes in the education of nephrologists-to-be and those maintaining certification. Other topics of interest include international medical graduates, women, transplant nephrologists, and pediatric nephrologists.

We started with a curse; let’s end with a wish: “May you find this an interesting section.”

—Pascale Lane, editor in chief, ASN Kidney News

The United States will face a shortage of nephrologists during the next decade. This shortfall will occur despite the fact that the number of nephrology fellows nearly doubled during the past 20 years, from 460 in 1987 to 863 in 2008 (1,2). The current disparities—by ethnicity, socioeconomic status, and geographical location—among patients with kidney disease will worsen as a result of this shortage.

At least three simultaneous trends are conspiring to fuel this crisis: Nephrology is not an appealing career option for the majority of U.S. medical school graduates (USMGs), the graduates of international medical schools are facing pressures not to seek additional training or to practice in this country, and the prevalence of chronic kidney disease (CKD) and end stage renal disease (ESRD) is rising dramatically.

Nephrology is not an appealing career option for the majority of USMGs

Today’s medical students are fundamentally different from their predecessors. As has been well documented, they value a controllable work-life balance, define success within the context of their personal lives instead of professional accomplishments, sacrifice salaries and career advancement for time with families, and characterize professionalism differently.

Medical students also face staggering debt. According to a recent report from the Government Accountability Office (GAO), “The median amount of educational debt for indebted medical students graduating in 2008 was $155,000—a 53 percent increase since 1998, controlling for inflation” (3). GAO calculated that the monthly loan payment for a resident or fellow with a $155,000 debt “could reach over $1700 (about 48 percent of pretax income).” Given this financial situation, it is not surprising that medical students want to complete their training and start generating salaries high enough to pay down their debt.

These factors—combined with more career options (due to new specialties, such as sleep medicine)—have decreased the interest of USMGs in internal medicine residency positions, which are the pathway to nephrology fellowships. In 2009, 1196 fewer graduates of U.S. medical schools selected categorical residency programs in internal medicine than in 1985 (Figure 1). Many have commented that today’s students see radiology, ophthalmology, anesthesiology, and dermatology as the “ROAD” to successful careers in medicine.

In addition to selecting from an already diminished pool of USMGs, nephrology is further challenged by the fact that students have little exposure to kidney disease before they must choose a career path. For most medical students, the first exposure to nephrology is during their third-year internal medicine clerkship, which in U.S. medical schools lasts on average 10.5 weeks.

Although internal medicine residency programs are required to include a “clinical experience” in each of the subspecialties of internal medicine, it is “not necessary that each resident be assigned to a dedicated rotation in every subspecialty” (4). Given the breadth and depth of internal medicine—let alone nephrology—it is not surprising that the exposure of medical students and residents to career options in nephrology is limited.

The Impending Workforce Crisis in Nephrology

By Susan Owens

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Approximately 25 percent of U.S. physicians hold J-1 visas (and remain in the United States as part of a waiver program that requires them to work in an underserved area for three years), hold H1-B visas, have become naturalized U.S. citizens, or are U.S. citizens who traveled abroad for medical school. An estimated 40 percent of nephrologists in the United States graduated from an international medical school, making nephrology more dependent on international medical graduates (IMGs) than any other specialty, except geriatrics (5). A “convergence of technology” and other factors (such as global supply chains) is causing the developing world—particularly India and China—to provide opportunities for well educated people to work in efficient systems. A reduction in IMGs from these countries could have long-term consequences on the nephrology workforce. Together, India and China account for more than 20 percent of IMGs in the United States (6).

Complicating matters, the immigration process became more restrictive with its move, after September 11, 2001, from the Department of State to the Department of Homeland Security. The number of IMGs entering the country on J-1 visas dropped from 11,471 in 1996 to 6033 in 2006. As a result, underserved rural and urban communities must meet workforce needs with a smaller pool of J-1 visa holders. At the same time, the number of H1-B visa holders—who have no requirement for working in underserved areas—is increasing. These trends (fewer J-1 and more H1-B visa holders) have several implications for nephrology. Fellowship program directors need to rely more on IMGs with H1-B visas, IMGs who are U.S. citizens, and graduates of osteopathic medical schools to fill training positions. The number of DOs in nephrology fellowships increased from seven in 1987 to 54 in 2007 (Figure 2).

The prevalence of CKD is rising dramatically

An estimated 31 million adults in the United States (or 16 percent of the population) currently have some form of CKD, and another 20 million are at risk for developing it. As the U.S. population ages—and a greater number of individuals suffer from diabetes, hypertension, and obesity—the prevalence of CKD rises. For the first time, the United States Renal Data System (USRDS) in 2008 included a separate volume focusing on CKD in its Annual Data Report. Some of the data for this report were collected from the National Health and Nutrition Examination Surveys (NHANES). These surveys, conducted by the National Center for Health Statistics (part of the Centers for Disease Control and Prevention), indicate that the prevalence of CKD has increased by 20 to 25 percent during the past decade. Josef Coresh, MD, and colleagues evaluated the same data for a study published in the Journal of the American Medical Association in 2007. Their study found that the prevalence of CKD rose from 10 percent of the population in 1988–1994 to 13 percent in 1999–2004 (7).

The increasing prevalence of CKD also threatens to multiply the number of patients with ESRD. In 2005, 484,995 U.S. adults had ESRD. USRDS estimates that this number will increase by 60 percent by 2020, to nearly 785,000. The incidence rate of ESRD is expected to increase by 41 percent to 151,000 new cases in 2020 (8). With 7550 active physicians, nephrology currently ranks 22nd among 36 physician specialties in the United States. The nephrology workforce is larger than that of child and adolescent psychiatry but smaller than that of internal and rehabilitation medicine workforce. At this time, there are 39,950 people per nephrologist in the United States. The prevalence of CKD and ESRD escalates—and the gap widens between the number of people and the number of nephrologists to treat them—who is going to care for all the patients with kidney disease? If fewer IMGs train or practice in the United States, who will care for underserved rural and urban communities? If USMGs continue to pursue other career pathways, who will care for poor patients as well as patients in underserved rural and urban communities? Without IMGs, the nephrology workforce would likely be in serious decline. IMGs supplement the general workforce and provide additional care in medically underserved areas. While not suggesting that IMGs interested in the profession should be discouraged or underrepresented, the nephrology community should assess why the specialty is less appealing to U.S. medical graduates and consider ways to encourage greater attention to diseases affecting the kidney.

Allison Haupt was ASN research policy coordinator until June 2009, when she left the Society to attend the New York University School of Law.

References