




Engaging Trainees by Enriching Nephrology Elective Experiences

Jeffrey H. William,¹ Taimur Dad,² Rachel E. Hilburg,³ Koyal Jain,⁴ and S. Ali Husain ⁵

CJASN 17: 1073–1075, 2022. doi: <https://doi.org/10.2215/CJN.00070122>

There is increasing urgency to re-evaluate current efforts to recruit and inspire the next generation of nephrologists. In the Academic Year 2022 Nephrology Match, only 69% of fellowship positions and 52% of tracks were filled on Match Day (1). Much focus has been placed on understanding extrinsic factors that perpetuate low interest in nephrology among trainees, such as perceptions of high workload, high case complexity, and low compensation (2–4). However, we know that strong nephrology mentorship along with early engagement in clinical nephrology is associated with a higher likelihood of pursuing a career in nephrology (2).

Despite efforts to increase interest in nephrology through innovative experiences and mentorship (5–7), there has not been a measurable increase in fellowship applicants over the last decade, potentially because these activities attract participants with prior interest in nephrology. Further efforts to expand nephrology interest among trainees must therefore focus on improving the quality and breadth of our existing interactions at the local/institutional level (8,9). Nephrology educators have a unique opportunity with the new Accreditation Council for Graduate Medical Education internal medicine program requirements taking effect in July 2022, which will allow subspecialty clinics to count toward the required ambulatory experience for residents (10). As a result of this increased flexibility, increased participation in nephrology electives may be a way to both unburden general medicine clinic faculty and increase resident exposure to nephrology.

Such a grassroots effort was recently presented at the American Society of Nephrology (ASN) Town Hall for Nephrology Training Program Directors (TPDs). During registration for the town hall, participating TPDs were asked to describe the current state of student and resident elective experiences at their institutions. Responses from 34 academic TPDs indicated significant participation of students and residents in nephrology electives. Among divisions offering these electives, 60% estimated five or more student participants annually, with 36% reporting ten or more annually. Similarly, 80% of those offering resident electives typically saw five or more participants annually, with 50% reporting ten or more annually. Approximately two thirds of

student and one third of resident electives were reported to be 4 weeks long. Despite the frequency and length of these electives, they were not reported to be designed to expose trainees to the full breadth of nephrology practice. Rather, elective time was reported to be predominantly spent on inpatient nephrology consultation (Figure 1), and no division reported offering a purely outpatient rotation.

During the Town Hall small group discussions focusing on electives, several themes emerged. TPDs noted that direct faculty interaction with rotating trainees is typically limited by competing work demands and lack of protected time. Therefore, clinical fellows carry the burden of providing a meaningful experience even when electives are of sufficient duration. Similarly, the pace of outpatient clinics leaves little time for dedicated teaching of students who have a limited ability to see patients on their own, dampening many attendings' enthusiasm to host trainees. Exposure to offsite outpatient hemodialysis units was noted to be challenging due to transportation. Additionally, resident rotations were reported to have competing demands, including sick call coverage and resident continuity clinics, complicating the scheduling of educational experiences. Although survey respondents and Town Hall participants are from a small proportion of all institutions that offer nephrology electives, the consistency of the gaps identified warrants further consideration regarding how nephrology electives can be improved.

Given the importance of elective experiences in securing the future of the nephrology workforce, we propose the following action items.

- (1) Create an outpatient elective “blueprint.” An institutional elective blueprint can provide a scaffold for what trainees will experience during their electives (8). Although specific faculty members may differ on the basis of availability, the experiences could remain constant. These should include outpatient opportunities in clinics and dialysis units, with a particular emphasis on home dialysis modalities, including both home hemodialysis and peritoneal dialysis. Experiences in outpatient clinics should be varied to ensure that trainees spend time with a diverse group of nephrologists and patients, including managing patients in both general and

¹Division of Nephrology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, Massachusetts

²Division of Nephrology, Tufts Medical Center, Boston, Massachusetts

³Department of Medicine, Division of Nephrology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania

⁴University of North Carolina Kidney Center, Division of Nephrology and Hypertension, Department of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

⁵Division of Nephrology, Department of Medicine, Columbia University Medical Center, New York, New York

Correspondence:

Dr. S. Ali Husain, Division of Nephrology, Columbia University Medical Center, 622 W 168th St, PH4-124, New York, NY 10032. Email: sah2134@cumc.columbia.edu

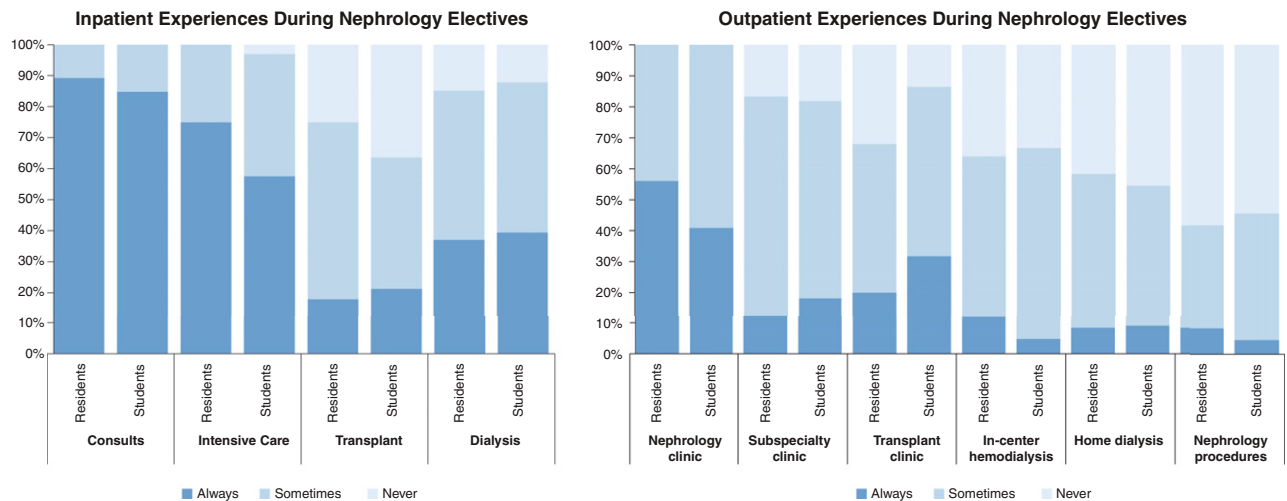


Figure 1. | Composition of nephrology elective experiences in the United States. Frequency of participation with different types of inpatient and outpatient nephrology experiences by students and internal medicine residents during nephrology electives as reported by nephrology training program directors and associate training program directors completing a voluntary registration survey for the American Society of Nephrology Town Hall for Nephrology Training Program Directors.

subspecialty clinics, such as transplantation (pre- and post-transplant), dialysis access, glomerular disease, *etc.* The breadth of these experiences will also expose the trainee to a diversity of potential mentors within the division. Feedback from trainees at the beginning of each rotation or at interim touch points can be used to personalize electives by increasing exposure to specific areas of interest within nephrology. Research electives and projects can serve as valuable nonclinical experiences that expose trainees to the breadth of nephrology and lend themselves to strong mentorship relationships between trainees and faculty. A repository of successful elective blueprints has been added to the ASN Educator website (<https://www.asn-online.org/education/training/educators>) and contains sample electives for academic and private practice settings. This repository will be continuously expanded *via* user submission.

- (2) Focus on institutional strengths. Each institution has unique strengths and resources. Although a given institution may not have a transplant program, it may have a robust network of dialysis units with experienced nurses who can teach trainees. General nephrology clinics may not be able to provide a trainee with multiple cases of GN over 1–2 weeks, but ancillary services (*i.e.*, nutrition or dialysis modality counseling) may expose trainees to previously unknown resources in the outpatient setting. Outpatient experiences will differ among institutions, but any unique experiences can highlight the strengths of a division or practice.
- (3) Leverage existing asynchronous learning resources. Even the most structured clinical experience in nephrology will be limited by available institutional resources and the case mix of a particular rotation. Nephrology educators globally have developed freely accessible resources, including NephMadness, GlomCon, web-based learning cases/modules (NephSIM), podcasts (*Freely Filtered, Channel your Enthusiasm*), and Twitter chats (NephJC). We should leverage the efforts of nephrology educators

and allot time during electives for trainees to engage with these resources. Current trainees are accustomed to asynchronous learning and will appreciate the flexibility in learning from these resources and obtaining a broader exposure to the world of nephrology.

- (4) Identify key administrative staff for elective coordination. Many TPDs remarked on the logistical challenges of tailoring worthwhile nephrology experiences. A dedicated administrative coordinator could engage with the medical school or internal medicine residency program to create individualized schedules for trainees using the institutional elective blueprint, ensuring that important medical school or residency commitments are not overlooked and that dedicated nephrology educators expect and prepare for a trainee's presence in their clinical work.
- (5) Support faculty "touchstones" and mentors. Faculty mentorship is important in improving interest in nephrology among trainees (2). Skilled faculty educators with an interest in working with trainees should take on the responsibility of "division champions" that serve as touchstones throughout elective experiences. Key expectations may include a meeting at the start of the rotation regarding expectations and assigned asynchronous learning as well as scheduled weekly check-ins thereafter. Institutional support of these faculty touchstones will ensure that trainees receive attention and continuity in furthering their nephrology education.

Tailored electives with broad exposure to nephrology represent a key opportunity to increase interest in nephrology among trainees. However, the current landscape of homogeneous, inpatient-focused electives with limited one-on-one faculty mentorship represents missed opportunities to expose elective participants to the breadth and excitement of careers in nephrology. Our ongoing dismal fellowship match data, along with upcoming changes in the internal medicine program requirements, make this the perfect time for

nephrologists to invest in improving these experiences for trainees to ensure the future of our specialty's workforce.

Disclosures

R.E. Hilburg's spouse reports employment with Lockheed Martin. S.A. Husain reports research funding from the Nelson Family Foundation and honoraria from the Renal Research Institute. K. Jain reports research funding from Visterra as a principal investigator for an IgA trial and from Kaneka as a principal investigator for a liposorber study. J.H. William reports ownership interest in Gerson Lehrman Group. The remaining author has nothing to disclose.

Funding

None.

Acknowledgments

The authors thank Dr. Scott Gilbert for his guidance in the planning and preparation of this manuscript.

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 ASN or CJASN. Responsibility for the information and views expressed herein lies entirely with the author(s).

Author Contributions

T. Dad, R.E. Hilburg, S.A. Husain, K. Jain, and J.H. William conceptualized the study; T. Dad, R.E. Hilburg, S.A. Husain, K. Jain, and J.H. William wrote the original draft; and T. Dad, R.E. Hilburg, S.A. Husain, K. Jain, and J.H. William reviewed and edited the manuscript.

References

1. Pivert K: AY 2022 Nephrology Match, 2021. Available at: https://data.asn-online.org/briefs/12_ay-2022-match/. Accessed December 2, 2021

2. Sozio SM, Pivert KA, Shah HH, Chakkera HA, Asmar AR, Varma MR, Morrow BD, Patel AB, Leight K, Parker MG: Increasing medical student interest in nephrology. *Am J Nephrol* 50: 4–10, 2019
3. Beck N, Furgeson S, Chonchol M, Kendrick J: Internal medicine residents' perceptions of nephrology as a career: A focus group study. *Kidney360* 1: 1052–1059, 2020
4. Daniels MN, Maynard S, Porter I, Kincaid H, Jain D, Aslam N: Career interest and perceptions of nephrology: A repeated cross-sectional survey of internal medicine residents. *PLoS One* 12: e0172167, 2017
5. Bayliss GP, Cobb J, Decker B, Hellman R, Vasavada N, Mackelaite L, Shadur C, Ilori T, Ibrahim T, Leight K, Hsiao LL, Molitoris BA, Okusa MD, Parker MG; ASN Workforce Committee: Kidney Mentoring and Assessment Program for Students: A guide for engaging medical students in nephrology. *Clin Kidney J* 12: 761–766, 2019
6. Maursetter LJ, Stern LD, Sozio SM, Patel AB, Rao R, Shah HH, Leight K, Okusa MD, Zeidel ML, Parker MG: Enhancing nephrology career interest through the ASN Kidney TREKS program. *J Am Soc Nephrol* 27: 1604–1607, 2016
7. Hsiao LL, Wu J, Yeh AC, Shieh EC, Cui C, Li A, Polding LC, Ahmed R, Lim K, Lu TS, Rhee CM, Bonventre JV: The Kidney Disease Screening and Awareness Program (KDSAP): A novel translatable model for increasing interest in nephrology careers. *J Am Soc Nephrol* 25: 1909–1915, 2014
8. Agrawal V, Jhaveri KD, Shah HH: Enhancing outpatient nephrology experience for internal medicine residents. *Clin Kidney J* 10: 429–436, 2017
9. Shah HH, Adams ND, Mattana J, Kadiyala A, Jhaveri KD: Nephrology elective experience during medical residency: A national survey of US nephrology fellowship training program directors. *Ren Fail* 37: 999–1006, 2015
10. ACGME: ACGME Program Requirements for Graduate Medical Education in Internal Medicine. Available at: https://www.acgme.org/globalassets/PFAssets/ProgramRequirements/140_InternalMedicine_2022.pdf?ver=2021-02-19-152614-193&ver=2021-02-19-152614-193. Accessed December 2, 2021

Published online ahead of print. Publication date available at www.cjasn.org.