

Transplant Surgery: Sustaining a Workforce at a Critical Juncture

Dimitrios Moris, MD, PhD,¹ Paulo N. Martins, MD, PhD,² Eliano Bonaccorsi-Riani, MD,³ Trevor Nydam, MD,⁴ Yuri S. Genyk, MD,¹ and Emmanouil Giorgakis, MD⁵

INTRODUCTION

Abdominal organ transplantation has become 1 of the most successful forms of high-acuity surgical care, with survival outcomes that would have been inconceivable only decades ago. Yet the specialty responsible for these achievements faces increasing difficulty sustaining its workforce. In the United States, transplant surgery now confronts declining trainee interest, increasingly demanding clinical expectations, and institutional structures that have not kept pace with the changing nature of the field. Although some pressures are unique to the United States—particularly compensation models and regulatory oversight—many high-income countries report similar concerns regarding recruitment, burnout, and the expanding scope of transplant care, underscoring the global relevance of the issue.¹

The goal of this commentary is to outline the structural factors contributing to workforce instability and to propose practical, system-level reforms. Improving sustainability is not merely a matter of surgeon wellbeing; it is fundamental to maintaining organ utilization, equity, and public trust.

CLINICAL WORKLOAD AND PRODUCTIVITY METRICS

Clinical unpredictability remains 1 of the strongest deterrents to entering the field. Abdominal transplant surgeons frequently manage high-acuity perioperative issues while remaining continuously available for organ offers, procurements, and emergent operations. Traditional 24-h call structures, often without structured recovery time, contribute significantly to cumulative fatigue and are a known factor in burnout among trainees and fellows.² Shifting more transplant procedures into daytime hours is

increasingly feasible due to advances in organ-preservation technologies. Machine perfusion allows decoupling procurement from implantation, enabling more predictable operative scheduling without compromising outcomes. Programs in North America and Europe have demonstrated that increasing daytime case starts is both workable and beneficial for continuity.

Transplant surgery may be undervalued relative to the actual work performed compared with other high-complexity fields. In the United States, the existing work payment system used by the Centers for Medicare and Medicaid Services and private payers predominantly incentivizes procedural volume. It does not comprehensively recognize the extensive preoperative, postoperative, and multidisciplinary efforts involved in transplantation, nor does it consistently correlate with surgical complexity or patient risk.³ Recent proposals endorse the adoption of customized payment models to better reflect the comprehensive work of transplant physicians and surgeons. These models seek to integrate nonbillable tasks and value-based metrics, such as patient outcomes and cost savings, into compensation systems.

TRAINING AND EARLY-CAREER SUPPORT

Interest in transplant surgery among general surgery residents continues to decline, with surveys citing concerns about lifestyle, unpredictability, and the length and intensity of training.⁴ Modernizing fellowship structure and early-career support is critical to reversing these trends.

Competency-based training, with explicit milestones in procurement, bench work, implantation, and perioperative management, provides transparency and reduces the sense of prolonged apprenticeship. Protected academic

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¹ Department of Surgery, MedStar Georgetown Transplant Institute, Washington, DC.

² Department of Surgery, Oklahoma Transplant Institute, Oklahoma City, OK.

³ Hepatopancreatobiliary Surgery and Liver Transplantation Unit, Cliniques Universitaires Saint-Luc, Université catholique de Louvain, Brussels, Belgium.

⁴ Division of Transplant Surgery, Department of Surgery, University of Colorado Anschutz Medical Center and Children's Hospital Colorado, Aurora, CO.

⁵ Division of Abdominal Transplantation, Department of Surgery, University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC.

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Correspondence: Dimitrios Moris, MD, PhD, Department of Surgery, MedStar Georgetown Transplant Institute, 3800 Reservoir Rd, Washington, DC 20007. (dimmoris@yahoo.com).

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time—now standard in other surgical fellowships—should be fully integrated into transplant training. Exposure to machine perfusion-enabled daytime operations is equally important so that trainees engage with a sustainable model of transplant care.

The transition from fellowship to independent practice is a particularly vulnerable period. Early-career transplant surgeons often assume substantial call duties before they have fully developed procedural independence, administrative familiarity, or leadership experience. Structured launch periods featuring reduced calls during the first year, paired mentorship, and defined early-career goals improve retention and allow new surgeons to establish a grounded professional identity. These approaches shift the paradigm from endurance-based survival to intentional career development.

ACADEMIC PRODUCTIVITY AND PROMOTION METRICS

Academic promotion pathways often do not reflect the realities of transplant practice. High-acuity clinical work, organ assessment, longitudinal patient care, quality-improvement initiatives, and program building are core components of transplant surgery, yet these activities frequently receive limited recognition within traditional promotion frameworks. Many transplant surgeons report that productivity expectations—often based on publications and grant funding—are misaligned with the unpredictable, time-intensive nature of their clinical work.⁵

A more accurate and equitable definition of academic productivity should incorporate 3 domains: first, clinical excellence, measured not only by outcomes but also by appropriate utilization of complex or marginal organs and the safe management of high-risk patients; second, applied scholarship, including quality-improvement initiatives, participation in multicenter research, machine perfusion program development, and contributions to clinical pathways; third, systems leadership, encompassing program development, equity-focused initiatives, procurement-process improvements, and sustained mentorship.

Recognizing these domains as legitimate pathways for promotion aligns incentives with the actual work of transplant surgeons. This reduces disillusionment—particularly among early-career faculty—and supports the long-term sustainability of the workforce, which has shown measurable attrition in recent analyses.²

TRUST AND PUBLIC CONFIDENCE

Public trust is essential to a functioning transplant system and is tightly linked to the stability of the surgical workforce. Recent US media coverage has questioned organ procurement practices and allocation fairness, increasing scrutiny on the system and heightening public uncertainty. Surgeons themselves report that these pressures—combined with moral and ethical complexities of allocation—contribute to contemporary forms of moral injury.¹

Stable, well-supported surgical teams reinforce patient and public confidence through improved continuity, communication, and predictable care. When surgeons are

exhausted or frequently rotated off service due to fatigue or burnout, variability in care can increase in ways noticeable to patients and referring providers. Strengthening the workforce—through improved schedules, modernized training, and appropriate academic recognition—supports public trust by demonstrating that the system is safe, accountable, and sustainably staffed.

International experience reinforces this connection: countries with structured procurement roles, national call systems, and predictable staffing frequently report more consistent outcomes and higher donation rates. Although the US system differs in scale and financing, the principle remains universal—public confidence grows when the clinical workforce is stable and adequately supported.

A PATHWAY FORWARD

Meeting the workforce challenges facing transplant surgery requires structural solutions rather than individual resilience. Three priorities are central as follows: first, redesign clinical operations to promote predictability. Expanded use of machine perfusion, increased daytime scheduling, and formal recognition of call as clinical work are immediately implementable strategies. Greater regional coordination in procurement can further reduce overnight travel and more equitably distribute responsibilities. Second, modernize training and early-career development. Competency-based fellowships, protected academic time, balanced operative exposure, and structured launch periods can make transplantation more attractive and reduce early attrition. Third, realign academic promotion metrics with the actual work of transplant surgeons. Including clinical complexity, applied innovation, and systems leadership as promotion criteria strengthens morale and supports long-term career development.

These reforms reinforce each other: predictable schedules improve training; better training enhances recruitment; and fair promotion systems retain the surgeons needed to sustain equitable, high-quality transplant care.

CONCLUSIONS

Ensuring the future of transplant surgery requires redesigning clinical structures, training pathways, and academic incentives so surgeons can practice safely and sustainably, and US transplant programs and health systems should jointly implement these structural reforms now.

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