

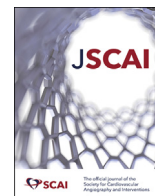


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Editorial

The Ongoing National Medical Staffing Crisis: Impacts on Care Delivery for Interventional Cardiologists



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We are currently facing an international health care staffing crisis. It extends to all aspects and members of the care delivery team, including both the hospital and ambulatory settings. The COVID-19 pandemic exacerbated this crisis by creating an increased demand for care, an increased burden of care for those on the front lines, and a realignment of values for many workers. The intersection of these factors (among others) resulted in high rates of burnout and a “great exodus” of health care workers. The ramifications of this departure have been broad, including but not limited to the rationing of health care, delayed/missed care, and redeployment of workers to jobs outside of their typical scope of practice (Figure 1). In order to begin addressing this issue, the Society for Cardiovascular Angiography and Interventions (SCAI) and the Interventional Council of the American College of Cardiology (ACC) held a joint webinar, bringing together international experts from various parts of the cardiovascular care delivery team to offer perspective and suggestions on how to move forward as a community. We provide a summary of this discussion pertinent to interventional cardiologists.

The pandemic as a watershed event

While widespread public recognition of the health care staffing crisis is relatively recent, a crisis in health care staffing preceded the recent COVID-19 pandemic. Episodic deficits of both physicians, nurses, and other team members have occurred throughout the past 20 years. Still, there is no doubt that the pandemic exacerbated this crisis through multiple strains that it placed on our health care environment and the

way it accelerated existing workforce trends in broader society (eg, the “great exodus”). In its most basic form, the crisis can be described as critical staff shortages, including the resignation of a substantial portion of nurses and other health care workers. According to the U.S. Bureau of Labor Statistics, it is projected that 500,000 nurses will retire between now and the end of 2022, creating a 1.1 million nurse deficit.¹ The additional stress on the health care system also affects physicians, with recent estimates suggesting up to a quarter of practicing physicians are contemplating leaving the workforce in the next 2 years.² Poor recruitment into health care fields has further compounded this large departure of health care workers. While these trends disproportionately impact staffing for nursing homes and residential programs, hospitals have also been hit hard. Shortages have led to major competition for staff with exorbitant salaries that lure workers to temporary positions, thereby limiting workforce retention and disrupting both inpatient and outpatient care. The ensuing rapid staff turnover has limited our ability to maintain the appropriate level of training and competency for highly technical environments such as operating rooms and cardiac catheterization laboratories. Thus, the pandemic has exacerbated our health care crisis in 2 distinct ways: first, by overwhelming a health care system poorly designed for excess capacity with large surges of often critically ill COVID-19 patients and second, by leading to acute staff shortages that have prompted the closure of critical care beds in this already taxed system. This has resulted in limiting patient access to the health care system, which has been manifested in delays of time-sensitive “elective” procedures and the inability to transfer patients requiring high levels of

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Figure 1. The scope, etiologies, and strategies for addressing the current medical staffing crisis

care to appropriate facilities. Ultimately, these issues impact not only patients directly afflicted with COVID-19, but also patients who have other life-threatening ailments, such as critical cardiovascular conditions that often require operating room and/or cardiac catheterization laboratory expertise.

Impacts on care delivery in the catheterization laboratory

The staffing crisis has particularly impacted acute care delivery in the cardiac catheterization laboratory and presented an unprecedented shift in the practice of interventional cardiology. A 2019 survey of 509 interventional cardiologists across 18 countries reported $\geq 50\%$ reduction in urgent or emergent invasive coronary procedures for acute coronary syndromes, including ST-segment-elevation myocardial infarctions (STEMIs).³ Subsequent studies reported reductions in STEMI admissions of 27%-48% during the pandemic.⁴ This resulted in an estimated 3-fold increase in late presenting STEMI patients during the pandemic period.⁵ Additionally, 28% of recent survey respondents among members of the European Society of Cardiology reported increased rates of cardiogenic shock and mechanical complications in STEMI patients, while 48% reported delay in reperfusion time.⁶ Besides the impact on clinical outcomes, there were operational impacts noted as well. In a single-center study, 10% of patients awaiting transcatheter aortic valve replacement ended up undergoing urgent transcatheter aortic valve replacement or died in the first 30 days after elective procedures were halted during the pandemic.⁷ While many of these care delays can be directly linked to the effects of the pandemic on hospital resource utilization, the staffing crisis certainly played a significant part in the inability to provide urgent and emergent cardiovascular care during this period.

Decreased procedural volumes across cardiovascular medicine and other medical specialties during lockdowns significantly contributed to losses in net income for many hospitals across the United States over the past 2 years as well. This has further compromised the already constrained financial capabilities of many of these health care systems, including their ability to both hire and retain staff that have been under tremendous stress during the pandemic. It appears that the pandemic has further accelerated the already cyclic nature of catheterization laboratory staffing, leading to a larger percentage of inexperienced staff, which in turn has the potential to contribute to safety and efficiency issues.

International perspective on the staffing crisis

The staffing crisis, along with the subsequent broad ramifications on care delivery, has been felt internationally. Many countries have developed cross-functioning “leaner” teams with more flexible schedules to accommodate the increased ebbs and flows of staffing. To achieve this structure, these teams engage a diverse workforce across different specialties according to the level of acuity of individual units or the type of planned procedures. For example, training and work frameworks in Europe have identified key themes for nursing and allied specialists that are transferable across different health systems. These themes underscore the importance of technical knowledge, legislative priorities, and regulatory standards for governing safe practices and have become integral to the education of a newer generation of nurses and allied professions in these areas.^{8,9}

Similarly, several countries are exploring the role of software that can automate the more routine tasks required by any health care system. These tasks include tools facilitating patient communication, scheduling, billing, coding, and insurance verification. For example, robotic process automation can process high volumes of data to generate or complete staff schedules, patient logs, order requests, and transportation checklists. The purpose of integrating such automated solutions is to streamline care and free the already limited number of professionals for clinical responsibilities and cut costs. Although its role is promising, robotic process automation raises other concerns that need to be addressed, including adjustment to a novel medium of communication with patients and coworkers, information overload, and flexibility of the system.^{10,11}

Finally, balancing smaller teams and busy workloads with burnout mitigating strategies appears to be a matter of trial and error in many systems. Intuitively, an expanded care team reduces individual load and hence burnout. Shared experiences in finding solutions to these issues open the dialog to potential shared solutions to help navigate this complex crisis as a global community.

Moving forward as a cardiovascular community

How can the interventional cardiology community continue to address the health care setting staffing crisis? First, we need to increase awareness of the problem in our communities and in our societies. The

SCAI/ACC webinar helped focus attention on the extent of the current problem and the challenges we face. Second, both ACC and SCAI will focus on advocacy with lawmakers at the state and federal level in an attempt to not only find solutions but also minimize deleterious effects to Medicare costs. Third, we need to consider innovative mechanisms to train more health care workers including nurses, catheterization lab technologists, x-ray technologists, advanced practice providers, and cardiologists. Finally, we all need to do our part to create healthy and safe work environments. By its very nature, interventional cardiology centers on acute cardiovascular emergencies involving complex procedures, which can frequently create stressful environments. Radiation exposure and orthopedic injuries compound the problem. We need to continue to work on finding innovative ways to address the occupational hazards and lower the stress levels with adequate training, staffing, and realistic call schedules. While the health care staffing crisis poses a major challenge to the interventional community, we can collectively find solutions that can enhance the safety and well-being of our patients and ourselves.

Declaration of competing interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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