



## THE NEW SPECIALTY OF ACUTE CARE SURGERY: *A Graduate's Perspective*

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### BACKGROUND

In recent decades, one of the overwhelming issues in hospital care is overcrowding in emergency departments. Patients are condemned to waiting long hours to be seen, some decide to find care elsewhere, and ambulances are diverted away due to the limitations of many emergency departments. This causes significant delays in patient care, and a general sense of dissatisfaction has become pervasive among patients. The backlog of patients creates a barrier to the throughput in and out of the emergency room. This phenomenon resulted in the Institute of Medicine's description of emergency medicine as being at its breaking point, particularly in rural hospitals.<sup>1</sup> Though Urgent Care Centers and Retail Clinics provide some relief from the congestion by treating minor problems,<sup>2</sup> the most common reasons for presentation to the emergency department are injuries and abdominal pain, which create a pressing need for general surgeons and trauma surgeons to provide timely evaluation of these patients.<sup>3</sup>

According to Solucient,\*\* the recommendations for general surgery coverage are six general surgeons per 100,000 people.<sup>4</sup> Across the nation, the Association of American Medical Colleges estimates that in 2008, there was an overall deficit of 7,400 physicians, but by the year 2020 the shortage will be greater than 91,000 including the shortage of 35,000 surgeons.<sup>5</sup> This deficit is so large that even if the Accreditation Council for Graduate Medical Education (ACGME) approved 10,000 more resident positions, a large gap in the supply and demand of physicians would remain.<sup>6</sup> Additionally, there is an increase in specialist surgeons and a decline in the number of general surgeons, especially those general surgeons who

exclusively perform general surgery. The nationwide trend towards increased use of minimally invasive techniques, and the increased restrictions on duty hours, limits the operative experience of surgical residents in training. Furthermore, priorities are changing in the younger generations of physicians. Considerations collectively described as lifestyle, which include scheduling, workload and family life, have risen as driving factors in determining the field of medicine that residents pursue; increasing numbers of trainees are choosing fellowships in more specialized fields.

The discipline of surgery has become increasingly specialized for multiple reasons. Among them are: 1) rapid expansion of medical knowledge; 2) advances in techniques and technologies, and; 3) patient demands, based on increased access to medical information. This rapid expansion of specialization has resulted in centers of excellence and centralization of care which has the unintended result of further limiting patients' access to optimal care.

Another consequence of these trends is that specialty surgeons are often reluctant to take emergency general surgery call. The reasons are several: it shifts the focus of their practice away from their specialties; they prefer to avoid getting involved with problems outside their area of expertise; and general surgery call would increase their exposure to liability. Finally, though surgeons historically took general surgery call in order to build up their client base or to maintain hospital admitting privileges, some specialty surgeons are now shifting the focus of their practices away from the hospital setting, or even to hospitals without an emergency room. These changes in the specialists' preferences, coupled with the overcrowding of emergency rooms, cries out for certain

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\*\* Solucient provides comprehensive healthcare databases, analytics, professional services, and research services to help health professionals and institutions improve their performance.

remedial changes that will assure comprehensive care with 24/7 emergency department coverage by surgeons with broad-based surgical and critical care skills. In response to this need, the American College of Surgeons set out to create the specialty of Acute Care Surgery. According to Jerry Jurkovich, past president of the American Association for the Surgery of Trauma, the acute-care surgeon should,

“... be responsible for managing acute general surgical problems, covering general surgical and specialty services, providing surgical critical care, and managing acute trauma . . . The training . . . would require a core general surgery training, as well as in thoracic, vascular and gastrointestinal surgery, so as to not just allow but to encourage the development of a diverse elective surgical practice.”<sup>7</sup>

#### DEVELOPMENT OF ACUTE CARE SURGERY AS A SPECIALTY

In September 2002, the American College of Surgeons initiated an ad hoc committee for “Consideration of Trauma Specialization.” The committee was charged to consider the problems of patient access to emergency surgical care and the future viability of trauma surgery as a career. In 2003, the “Committee to Develop the Reorganized Specialty of Trauma, Surgical Critical Care, and Emergency Surgery” was formed through a joint meeting between the American College of Surgeons Committee on Trauma, the American Association for the Surgery of Trauma (AAST), the Eastern Association for the Surgery of Trauma, and the Western Trauma Association. In 2005, the Acute Care Surgery Committee was created, and they determined to create a new specialty of training and practice. This new discipline would require broad-based surgical training including elective and emergency general surgery; it would have a strong emphasis on trauma; and it would have at its core a surgical critical care residency approved by the Accreditation Council for Graduate Medical Education. Since its inception in 2002 this committee has established Acute Care Surgery as a new specialty, with its own curriculum, site verified program requirements, and a certificate of completion. This has become a growing specialty that has had a major presence at many national surgical conferences.

#### MY EXPERIENCE AS AN ACUTE CARE SURGEON

Seven fellowship programs have been certified by the AAST as training facilities for the specialty

of Acute Care Surgery. The first of these was at the University of Nevada School of Medicine (UNSOM) in Las Vegas, and as part of the first graduating class of Acute Care Surgery Fellows at UNSOM, I had the honor of being part of the development, the certification, and the completion of this new specialty. In my mind, acute-care surgery is the combination of trauma surgery and critical care surrounding a core of elective and emergency surgery. But there are many types of surgical emergencies: orthopedic, neurosurgical, and the subspecialties of general surgery (i.e. vascular, thoracic, and biliary). An acute-care surgeon should be familiar with each of these many disciplines. One of the purest examples of an acute care surgeon is the general surgeon who practices in a rural environment without much specialty support. This surgeon must be a renaissance man in order to take care of anything that may come through his door. This is the surgeon that one would hope to have in the hospital when a surgical emergency enters the building. This surgeon would be able to take care of some of the most critical patients during the worst possible times.

I wanted to be the surgeon that everyone could depend on when they needed me most. I was told that the University of Nevada School of Medicine was planning to become a training facility for acute-care surgeons, and I jumped at the opportunity to become a part of this process. Although I was aware that the program did not exist when I applied for fellowship, I knew my training would be at least modeled on the acute-care surgery curriculum, but I expected to need a second year of fellowship to obtain additional training in trauma. However, three months into my fellowship I was told by my program director, Dr. John Fildes, that the curriculum for the acute-care surgery fellowship had been established and that the committee was ready to entertain applications to certify training programs in acute-care surgery. During the next month, we furiously developed goals and objectives for each of the ACGME core competencies for each rotation that the acute-care surgery fellow would be expected to complete. In addition to the predetermined rotations in emergency surgery, trauma surgery, vascular, thoracic, orthopedic, and neurosurgery, we created curricula for interventional radiology, burns, rural surgery, and colorectal surgery, among others. Most of these curricula had never been created in the past, but we derived the information from programs that offered complete training fellowships in these specialties, and modified them for a surgical fellow.

After submitting the application for approval of an Acute Care Surgery Fellowship we became the first facility to undergo a site visit for such a program in December 2007. An esteemed panel toured the facilities and probed the faculty, fellows, and residents with questions about the desire, feasibility, and impact of having an Acute Care Surgery fellowship at the University of Nevada School of Medicine. Our center, the University Medical Center of Southern Nevada, was in the unique situation of having no residencies in orthopedic surgery or neurosurgery, and no fellows in vascular surgery, thoracic, pediatric, or colorectal surgery. Thus, the faculty, caseload, and desire were abundant for training Acute Care Surgeons in each of these disciplines without negatively impacting the training of other fellows. During the last few hours of their inspection, the visitors spoke to my co-fellow and me and said, "We'll be keeping a close eye on your careers." At that point I knew that we had passed the inspection and were to become the first training program for Acute Care Surgeons.

During the second half of the critical care portion of my fellowship we had already inserted a few Acute Care Surgery rotations. These continued into the second year of the fellowship. During these rotations I was able to obtain experience in many different disciplines, and not at the level of a medical student or intern; in most cases we were trained like specialty fellows in each of the rotations. I gained knowledge in many domains, I performed diverse surgeries and procedures, and I developed a level of respect amongst the specialists for the ultimate care of our patients. However, one of the most valuable rotations that I experienced was what the program called "Trauma Systems." This rotation was designed to familiarize us with the requirements of caring for trauma beyond the walls of the hospital. We attended meetings with the Southern Nevada Health District, spent time with the coroner witnessing autopsies, had first-hand experience riding along on EMS responses, and observed incident command tactics. This gave us additional experience and insight into the requirements for a trauma system to run smoothly from the level of government offices down to each individual within the hospital.

#### THE BENEFITS OF ACUTE CARE SURGERY TO THE COMMUNITY

How does Acute Care Surgery benefit the hospital and community? In the eyes of the hospital,

the acute-care surgeon can fit into many roles: as a trauma surgeon who fulfills the 24 hour/7 day a week requirements; as an intensivist who manages the critically ill and injured; and as a general surgeon who can ameliorate the problem of the paucity of general surgeons taking emergency room call. All of these roles are fully integrated into the specialty of acute-care surgery. Those that enter into this specialty are fully aware of the requirements and expectations of taking in-house trauma and emergency general surgery call. For hospitals in small communities or in rural environments the acute-care surgeon has the expertise to stabilize critical patients in order to transport them to more definitive care by specialists. They will become the surgeons that are indispensable in these smaller centers which often lack many specialists. The acute-care surgeon will at least have some experience in dealing with a variety of specialty problems, in order to determine the necessity of transport across great distances to a more extensively staffed center.

The crucial question for larger communities like ours is whether acute-care surgery only benefits smaller communities and smaller hospitals? Acute-care surgeons and the acute-care surgery model of staffing emergency rooms can improve the access of emergency room patients to on-call surgeons. A recent study indicated that the acute-care surgeon model improves care in acute appendicitis.<sup>8</sup> In a large academic center, the emergency department was staffed by either in-house trauma/emergency surgeons, thus mimicking the acute-care surgeon model, or by surgeons at-home in the traditional model. Between September 1999 and August 2002, 294 appendectomies were performed—167 by in-house Acute Care surgeons, and 127 by traditional home-call surgeons. There was no statistical difference in their time to consultation, but the Acute Care surgery model resulted in significant decreases in: time from consultation to operating room; complication rate; rupture rate; and overall hospital length of stay.

The impact of Acute Care Surgeons on other general surgeons should also be positive, as they should coexist and complement each other. As previously stated there is a changing paradigm for practice models, and current graduating physicians place more emphasis on workload and lifestyle. In order to satisfy their lifestyle plans, an increasing number of general surgery graduates continue their training to obtain subspecialty fellowships, which creates a potential shortage of practicing general surgeons. The availability of Acute

Care surgeons to care for much of the emergency surgery will encourage more trainees to enter the field of general surgery, because they will be able to maintain an elective practice with more consistent office hours and surgery schedules that are not disrupted by emergency consultations and add-on operations.

### CONCLUSIONS

Acute Care Surgery is a new specialty encompassing trauma, critical care, and emergency care, with its

core of general surgery. This specialty was created to address a need in the community for more expeditious access to surgeons. In doing so, this field was created with its own curriculum and governing association. But in addition to the establishment of this new specialty as a recognized entity, it has become a model on which hospitals are structuring general surgical responsibilities within the emergency room. It has become a more efficient system for the emergency care of surgical patients.

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