

Acute care surgery: a new strategy for the general surgery patients left behind

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In Canada, acute care surgery is defined as the urgent assessment and treatment of nontrauma general surgical emergencies involving adults. More specifically, this model of health care delivery surrounds the optimal treatment of intra-abdominal surgical crises. Whether located in an academic or community hospital facility, acute surgical emergencies often represent the most common reason for hospital admission. These conditions include, but are not limited to, acute appendicitis, cholecystitis, diverticulitis, pancreatitis, intestinal obstruction, intestinal ischemia, intra-abdominal sepsis, incarcerated hernias and perforated viscous.

Until recently, the most common delivery model for the care of these patients centred around a surgeon who was required to manage all surgical emergencies for a 12- to 24-hour interval, while concurrently working within the demands of a scheduled clinical practice. Although based in tradition, this system has multiple limitations, including interference with and required time away from a busy “scheduled” subspecialty practice; providing emergent surgery coverage throughout the night, with the high likelihood of still needing to engage in patient care during a busy “post-call” day; and a potential lack of coordinated and current academic expertise within the specific focus of acute care surgery.

As a result of these challenges, numerous “super-subspecialty” trained surgeons have recently stated their aversion to on-call work because many emergent conditions now lie outside their “comfort zone” of clinical practice. In response to these limitations inherent in the current paradigm, as well as the recent tension between traditional surgical expectations and the limited comfort of some recent subspecialty graduates, the concept of acute care surgery has recently evolved in Canada.

The realistic delivery of an acute care surgery model requires a dedicated hospital-based service that provides comprehensive care for all general surgical emergencies over a defined period of time (usually 7-day intervals). Unlike in the United States, in Canada this structured approach is entirely inclusive. All general surgeons, regardless of their personal subspecialty training, are included. The Canadian experience recognizes and values the enormous contributions from “nontrauma” specialists who care for emergency surgical patients in all hospitals, whether community or academic, metropolitan or rural. The potential benefits of this concentrated, focused approach to acute surgical care are multiple and include the following:

- predictable scheduling for busy surgeons
- the ability to focus one’s attention entirely on “elective” subspecialty work when not engaged on an acute surgical service block (and vice versa)
- predictable administration of operating suite resources
- improved initial patient access, as well as follow-up of discharged patients with surgical emergencies
- potentially improved patient care

In the context of protected operating suite block time, overall cost savings can also be substantial because of a reduction in nighttime operating and additional staffing requirements.

While these initial benefits are clear, a mature dedicated acute care surgery program would also ideally incorporate surgeons with a focused academic and clinical interest in patients with surgical emergencies, the evolution of a fellowship training program specific to this subspecialty, and evidence-based research centred on improving outcomes in patients with nontrauma emergencies. Although American health care recognized the value of this concept just before the Institute of Medicine's report *Hospital-based Emergency Care at the Breaking Point*,¹ it is only recently that their system has hit full stride with the development of acute care surgery fellowship training programs, site accreditations and a general restructuring of academic surgery departments.²⁻⁷ Although the formal academic organization of acute care surgery in Canada remains in its infancy, the reality is that beginning in Halifax in 1997, a number of Canadian centres have naturally evolved into this model of providing emergent surgical care. As of September 2009, there were 12 fully functioning acute care surgery programs across Canada. Although these clinical services share a common goal of improving the care of the often forgotten emergency surgical patient, local-regional variation has required distinct differences in their service structure and delivery. However, the end mission is the same: to provide quality care while concurrently enhancing clinical outcomes, increasing efficiency of the health care system and training a new generation of young surgeons with an enhanced core content focused on patients with nontrauma surgical emergencies.

Unfortunately, the academic advancement of the acute care surgery concept, and therefore evidence-based improvements in outcomes after emergency surgical care, has been historically limited by an inability to capture and synthesize even basic patient data. The ability to improve patient outcomes through evidence-based research is particularly crucial because the emergency care of surgical patients is the common denominator among all general surgeons. Whether engaged in solo or group practices, nearly all general surgeons are required to contribute to an on-call schedule offering emergent surgical care. This "common link" makes evidence-based research questions pertinent to nearly every general surgeon in Canada. Furthermore, unlike other surgical subspecialty research, which is generally advanced by surgeons with a genuine and life-long interest (and advanced postresidency training) in a specific field, there has been a historical absence of a dedicated group willing to advocate for evidence-based improvements in the care of those with general surgical emergencies.

Patients with general surgical emergencies have common diseases including appendicitis, perforated viscus, intestinal cancers, peptic ulcers, gallbladder disease, pancreatitis and hernia complications. Regardless of professional interests, clinical load or working environment, this list is common to every general surgeon in Canada who participates in an on-call schedule. It also involves a patient cohort that is unique from subspecialty nonemergent patients from both a physiologic and surgical perspective. As a result, the emerging organization of acute care surgery as a distinct entity is aimed at improving the care and experience of surgically ill patients in their most dire time of need. This will be accomplished via an open and inclusive mandate of systems implementation, academic evidence-based research, focused fellowship training and continuing medical education. We anticipate that the promotion and emphasis on acute care surgery as a distinct surgical entity will ensure that all patients under our care, irrespective of their surgical problems, will receive the best available and most advanced care possible. As a result, acute care surgery represents a revisitation of the principles of "general surgery" and the completion of a long-awaited return home.

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