



RURAL SURGICAL PRACTICE:

A personal perspective

**by Tyler G. Hughes, MD, FACS,
McPherson, KS**

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My chief during training, Ernest Poulos, MD, FACS, said more times than I can count that surgery is a difficult business. In the 23 years since I left his tutelage, I have had the honor of practicing in a teaching environment, a private urban practice, and, for the last 11 years, in a rural practice. I have no illusions regarding my importance to the field of surgery (none of you will have to learn the “Hughes criteria” for a major illness or read chapters by me in textbooks); however, I am joined in my love of rural surgery by real surgical giants like Carl Moyer, MD, FACS, and Ben Wilson, MD, FACS. Both of these men were university department chairmen who left the “rat race” of urban practice to work in smaller venues, doing the sort of variegated practice that matched their skill and intellectual abilities.

When flying over the U.S., one might notice vast expanses of seemingly empty terrain. Through the haze are blurry images of what is classified as rural America. This is land from whence came amazing men and women like Pres. Dwight Eisenhower and Amelia Earhart (both Kansans). The view, though, of this land from 35,000 feet and 400 nautical miles per hour is inadequate in helping one understand what life and medicine are like far down below. Our government uses the Metropolitan Statistical Analysis method to define demographically what is rural. Unfortunately, like the airplane flying high above, the human nature of rural living is lost in such statistical examination.

Every year, residents of McPherson, KS, celebrate All Schools Day. This local event is highlighted by a parade that features dozens of bands, floats, horses, antique cars, Shriner clowns, and much more. When I look upon the crowd during the parade, I see the panoply of rural surgery. Looking at the teenagers, I remember a recent splenic injury to a student during a football game. A young baby held in the arms of her mother represents the child who may come in with a strangulated hernia or intussusception. The proud grandparent is reminiscent of all the

advanced procedures I must do from time to time, from ruptured aortic aneurysms to colon resections. These people are my friends and neighbors, vulnerable to all the ailments that flesh is heir to. These people and the range of cases they represent are the width and breadth of practice for a rural surgeon. I would not trade it for any other kind of practice.

Challenges of rural practice

Charles Rinker II, MD, FACS, reports a practical definition of rural surgical practice by D.C. Lynge: More than 50,000 people is urban, whereas a population of 50,000 down to 10,000 is large rural and fewer than 10,000 is small rural.¹ I live on the cusp between small and large rural in a town of 13,000 people. These towns with fewer than 50,000 residents represent approximately 25 percent of the American populace, but only 9 percent to 12 percent of the entire surgical workforce serves that population.^{1,2} This demographic fact dominates the nature and challenges of working in rural America. Other issues include geographic and intellectual isolation as well as an increased number of on-call nights and the absence of immediately available subspecialty care. In addition, rural patients are generally older and sicker, and they smoke more and receive less medical care than their urban counterparts.^{2,3}

Several times a year, I fly to Smith Center, KS, to assist Pamela Steinle, MD, FACS, in her OR. One morning as I approached the airfield there, I was struck by how small the town appeared from the air and what resources were not available. There was no blood bank with many units of blood available in Smith Center. The large white building that composed the “skyline” of Smith Center was not a professional building full of cardiologists and intensivists—rather, it was a grain elevator. Dr. Steinle serves a population that represents the fifth oldest per capita in the U.S. Not long ago, while trying to log one of her cases in the ACS Case Log System, she found she could not enter the complete data on her patient because the system would not accept a birth date 107 years in the past.

Despite these and similar “impediments,” that morning she and I excised a colon cancer in a gi-



McPherson, KS, on All Schools Day.

ant incarcerated inguinal hernia in a 70-year-old man. The operation took less than two hours, and the patient left the hospital a few days later. The social implications of attempting this operation in a regional center were simply untenable: This elderly man—with very few monetary resources; a significant speech defect; an elderly, frail wife; and marginal coping mechanisms to wend his way through a large tertiary care facility—would have been emotionally and physically unable to endure an operation away from his familiar and supportive home. I flew home proud to be a rural surgeon.

Fewer resources equals greater variety

When I practiced in Dallas, TX, I took up flying as a hobby. At that time, perhaps it seemed frivolous, but now, as a rural surgeon, I realize how important general aviation is to rural patients and practitioners. Helicopters and fixed-wing aircraft get sick patients where they need to be fast. Access to general aviation allows the rural surgeon to travel quickly to conferences and short holidays, which is so essential to maintaining both clinical competence and a certain sanity and respite from the constant pressure of caring for

an entire community. I certainly do not believe that a rural surgeon must be a pilot, but I can vouch to the reader that it is practical.

The rural surgeon has limited resources. My hospital, which is licensed for 49 beds but usually runs a census of 20, maintains an intensive care unit every day of each year with only 10 registered nurses, one licensed practical nurse, and four monitor technicians. Our operating room handles more than 1,800 cases a year with a total staff of 10. Despite this challenge, we supply quality care to patients ranging from newborns to nonagenarians. Rural people are hardly the hicks that stereotypes make them out to be: Their values are sometimes portrayed as unsophisticated, but they accomplish a great deal with very few resources.

I am often asked what kind of cases I do in such a “small” place. The answer is “everything I need to.” According to my ACS Case Log, I performed 531 procedures in the last year. The most frequent cases were endoscopic (279, all types), cholecystectomy (43), inguinal hernias (11), carpal tunnel releases (11), and appendectomies (8). The remaining 187 procedures ran the gamut of surgery. I never know what condition a person who walks through the door might have.



Downtown Smith Center, KS.

One of my favorite cases was that of a man who appeared at my office complaining of a stingray injury—an unusual injury in central Kansas. He had been hit by the ray's barb earlier in the day and flew home from Florida to be treated locally. The patient recovered uneventfully thanks to research via the Internet and advice from surgical friends outside my region.

Developing human resources

Key to being a successful and safe surgeon in such an environment is attitude. I often say that I have no desire to be a small-town physician, but rather a big-town physician who happens to work in a small town. The rural American surgeon does not have excuses for inferior results that perhaps surgeons of developing nations or combat surgeons might. Rural surgery must have results comparable to those in more major centers. To that end, a network of resources is required. For me, the support of those working at the Wichita, KS, surgery residency is important. Through knowing the faculty of that program, I have benefited greatly. Equally important is the rotation of third- and fourth-year medical students from Kansas University Medical Center in Kansas City.

Teaching these young men and women requires me to know my subject and stimulates me to constantly study. Since trauma is so common in surgical practice, an association with a level 1 trauma center is essential. Rural surgeons must not abdicate the care of the injured to others. By being part of a trauma system, rural surgeons limit mortality and morbidity of these patients. Emergency medical systems and the rural surgeon should work in concert. The night I assisted paramedics in extracting an impaled patient from his overturned tanker truck—while fire hoses were aimed at us in case of explosion—instilled in me a real-life understanding of prehospital care.

I am fortunate to have two associates—Erik Rieger, MD, FACS, who has been with me for 10 years, and Clayton Fetsch, MD, who joined the practice this year—who help share the load of call work and allow me the luxury of immediate technical and cognitive support with difficult cases. Would that more rural surgeons could have partners to ease their sometimes lonely burdens. I've also benefited from the experience of William Collier, MD, FACS, who served McPherson for 35 years before his retirement. His sage guidance in acclimating me to rural surgery from an urban practice was invaluable.



Small-town aviation.

Surgeons in small towns are relatively big fish in small ponds. We are regarded as a key resource in the community and through that are often involved with local, state, and national officials. This situation gives the rural surgeon significant influence in policymaking if he or she chooses to put forth the effort: by actively interacting with officials, government entities will better understand the needs of the surgical community. In the long run, this understanding is returned to the community in the form of better patient care through support from government officials.

The last, but by far not the least, important network for me is the Kansas Chapter of the American College of Surgeons. Through the chapter, I've come to know those throughout my state who are practicing in all sorts of specialties. My chapter colleagues are among my best sources of support in patient care and intellectual development.

Planning is essential

The following case encapsulates the implications of the rural surgical environment. Two days after Christmas in 2004, a single-engine aircraft suffered an engine failure during a night flight at low altitude. The pilot crash-landed in a field

in South Texas. He was air-evacuated to a level 2 trauma center in Brownsville. He walked away from that crash with a broken finger and three nondisplaced rib fractures. That pilot was my brother. I later asked him at what point he made the various decisions in landing his plane. He told me that he had actually made those decisions years previously. He always knew it was possible that his engine might fail. He knew that should that happen, he needed a plan for survival based on data accrued before the moment of crisis. From predisaster planning, he knew he needed to land with wheels up, that the fuel valves to the engine must be closed to minimize the chance of fire, and that he had to maintain the lowest safe airspeed all the way to the ground to reduce energies at the moment of impact. My brother never saw the ground before impact that night, yet his planning saved his life.

This case represents not only the type of trauma that can literally fall out of the sky onto a rural surgeon, but the type of thinking the rural surgeon must exhibit. One must plan for the types of cases that may occur before they drop into the office or emergency room. Then, the surgeon must develop contingency plans to follow rather than rely on improvisation or, worse, luck. The rural

surgeon knows his or her resources are limited and that transfer may not be possible. The rural surgeon must play chess better. He or she must realize that resources may be overwhelmed and must consider many questions. Where is the blood? How much is there? How long will it take to get blood? What is the weather? Is there a capable assistant always within reach? What maintenance is being done in the hospital that might limit one's ability to respond? To whom can one turn when STAT transfer must occur, and how will the patient be transported? Finally, the rural surgeon must know his or her personal and facility limitations so that appropriate transfer to tertiary care is done in a timely and safe fashion.

Meeting real human needs

Some dissenters proclaim that there is no need for rural surgeons. These critics of rural surgery observe that there is a major center within an average of 50 miles of any place in the U.S. Factually, there is also an airport approximately every 50 miles in this country. But as in the case of my brother, the safe harbor of an airport or major hospital may be too far away. Imagine the plight of my cohorts in Colorado, Montana, or West Virginia. The most able pilots in the world and bravest ambulance personnel often cannot fly over or drive in mountainous terrain in severe winter weather. Such efforts put both the patient and the air crews in danger. For many of us in far-flung territories, 50 miles is an infinite distance. Critics of rural surgery bring to mind what surgical legend I.S. Ravdin, MD, FACS, said regarding criticism of his treatment of President Eisenhower's Crohn's disease: The severity of the criticism rose with the square of the distance from the operating table. Those wishing to limit rural surgery need to first spend time doing it.

Averages do not satisfy real, human needs. Actual emergencies happen in small towns. Without local surgical expertise, people will suffer mortality or disability. Transfer dislocates family from the patient and is especially hard on the elderly. Pain is a real issue during transport. Lastly, continuity of care is lost by relocating the patient. Although large centers often complain of poor communication by smaller centers, the same can be said of the reverse.

An old saying is that "nothing ever happens in a small town." I would disagree. In August 2006, along with my routine cases, I dealt with a paraesophageal hernia with organoaxial torsion, a newborn with imperforate anus, an inflammatory breast cancer, a gastrinoma, a massive upper gastrointestinal bleed from a lymphoma, a massive lower gastrointestinal bleed from a colon cancer, and one case each of brucellosis and tularemia.

Without question, rural surgery—like all of surgery—faces an uncertain and challenging future. For those individuals who wish to take the challenge, rural surgical practice is highly rewarding. New opportunities and challenges present themselves daily. Rural medical access is essential to the economic viability of a town. Every day, in the grocery store, on Main Street, and in the faces of the people in our community, I get to see the results of my life's work. I know not what path others might take—but, as for me, there is no place like my small town home and practice. □

References

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Dr. Hughes is in practice in the surgery department of Memorial Hospital, McPherson, KS, and clinical instructor at Kansas University Medical Center, Kansas City, KS. He is President of the Kansas Chapter of the ACS.

