



ELSEVIER

WHAT I HAVE LEARNED

What I've learned



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Bernie Morrey is a native of Texas who has become known as an orthopedic surgeon at the Mayo Clinic in Rochester, Minnesota. A mathematician by training, he worked for a time with NASA (National Aeronautics and Space Administration) on the Apollo missions. Known to all in orthopedics as “Mr. Elbow,” he has been a pioneer in his work on this formerly neglected joint, especially with the publication of sentinel work, *The Elbow and Its Disorders*, now in its fifth edition since it first published in 1985. He assisted Dr. Ralph Coonrad in the design of the Coonrad-Morrey total elbow replacement, which has been the most used elbow replacement worldwide since the 1980s. Morrey was a founding member of the American Shoulder and Elbow Surgeons and served as its president in 1999-2000. He was also president of the American Academy of Orthopaedic Surgeons in 1994-1995, president of the American Orthopedic Association in 2000, and was a long-term chairman of orthopedics at the Mayo Clinic.—W.J.M.

The fact is I often do think about this topic, possibly more so recently than in prior years. The reason seems obvious given that we have chosen a profession that is so rapidly expanding the knowledge base and one that to some extent was chosen for this very reason, and this imposes on us the absolute requirement to stay current. Furthermore, the demands of the profession have introduced an inherent conflict in each of us—how do we prioritize our time to learn, to treat, and to still be present for the family? So the first and overriding insight is that time is the currency of the realm. This recognition occurred early in my career and remains a constant consideration. So what else have the past 40-plus years of being engaged in a “lifelong learning experience” actually taught me? For me it is logical to answer this question in 4 categories: the medical profession in general, orthopedic surgery in general, the elbow, and life.

Medical profession

My experience as a physician has taught me the wisdom of my decision to enter the medical field. I began my career in medicine when options were rapidly expanding largely because of the explosion of advances in the technology sector. I

witnessed an almost boundless expansion of opportunities that were unfolding when I was working on the Apollo mission at NASA. Yet I found myself thinking ahead 10 years and asking, What will I be doing after we have sent a man to the moon? I was seeking relevance, and with the help of my wife, Carla, I decided to try to match my interests and talents in a meaningful way. Although there were no physicians in our family, I grew up respecting and admiring the commitment and professionalism of the doctors I had met, usually because of high school athletic injuries. I became committed to becoming a physician when even at that time there was growing dissatisfaction with the changes occurring in the profession. I was and still am saddened by comments advising against pursuing the medical profession because of the ever-growing and onerous regulations, decreasing reimbursement, constant threat of litigation, unreasonable patient expectations, and the list goes on. I am disappointed to hear a colleague saying, “I would never recommend any of my children to go into medicine today.” So what have I learned? Despite the negative features noted above, if one is fortunate enough to have the calling, there is no greater expression of a meaningful life than as a physician. However, the degree of satisfaction with our profession is directly correlated to the primary motivation for becoming a physician and surgeon in the first place. Finally, I have learned that when we become fully trained, we obtain privileges to practice. In reality, a

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medical privilege does not make one special; it only allows one to serve our patients. So for a physician, our privilege is that of a servant, not of a master.

Orthopedics

Without question, if one has the calling, orthopedic surgery is the best possible specialty in my opinion. I have learned the gratification that comes from a patient who tells you that you have changed or even saved his or her life. This motivates you to continue to improve and to always have a sound reason for your opinion or treatment recommendation. As a mathematics major in college, I remember when proving a theorem, one could get the wrong answer and still get an “A.” Why? You were being graded on your knowledge and ability to think in a logical sequential manner. Even if the final step was wrong, you got credit for your thought process. This was a great insight and shaped my approach to clinical practice. If I had a clear, logical, and evidence-based rationale for my treatment recommendation and if I successfully executed the plan at surgery, then even if it turned out poorly, I did not beat myself up too badly. Why? Because the plan was sound, it just didn’t work. I summarize this approach with my teaching mantra—the scientific basis of clinical practice. In this context, I was taught and have verified the wisdom of the recommendation that when evaluating and adopting new technology, one should stay at least 1 and sometimes 2 steps behind. I have learned that all change is not necessarily synonymous with progress and the key to adopting new technology is to determine the right technology at the right time at the right price.

Along the lines of the comments above, it remains a major disappointment to observe how slowly our profession modifies management based on what are considered good clinical data. This of course is not limited to orthopedics, but the considerable lag time between evidence-based treatment and adoption at the bedside remains hard to understand. Similarly, I have learned that the desire to provide cost-effective patient care is not very high on our list of priorities and that few seem interested. While the wheels of change turn slowly, it is obvious that we have lost control of our profession to some extent primarily because of our lack of attention to the cost of our care. Unless we participate in a meaningful way, we will not be the architects of change but will be the victims of inaction.

An additional insight is that of the great value in being able to identify a colleague who possesses expertise both that is needed to optimally care for your patient and that you do not yourself possess. For most of us, this will include not only anesthesiology, radiology, infectious diseases, and cardiology but especially colleagues to whom you can turn for a second opinion. There is great value in being able to rely on their recommendations with confidence since they, like you, have the patient’s best interest in mind with no secondary gain. So the lesson is to identify those with special competencies in whom you have confidence and, in so doing, develop your personal team approach to patient care.

From the beginning, I have appreciated, and it has been reinforced along the way, the great personal value of my friendships with my partners at the Mayo Clinic and indeed the value of my friendships around the country and around the globe. I have learned that the collegiality of our specialty is second to none and is the source of great enrichment both socially and professionally. These relationships are also a great source of ideas that provide the potential for clinical improvement or new surgical techniques. In addition, I have experienced the great benefits that come from treating all of our colleagues and associates with respect and especially making an effort to recognize and encourage them to develop their talents. This lesson is what one of my mentors called “enlightened self-interest.” The fact of the matter is that we benefit when we treat others appropriately. For me, this was expressed in my 32 years of practice as having 2 clinical secretaries, 2 primary scrub nurses, and 1 physician assistant. This level of stability of the team brings great value in terms of patient satisfaction, professional satisfaction, and practice efficiency. I benefited tremendously from the way they reacted to knowing their talents were recognized and utilized.

The elbow

Why the elbow? A respected mentor, Pat Kelly, provided the answer when as an intern, I asked him his recommendation for research that would make a difference. His response was typically cryptic: “Morrey, work in a vacuum.” This advice was easy to follow as I had just recently seen several failed elbow surgical procedures and, upon investigation, found little was really known about the elbow except it was a capricious joint, to say the least. Over time, nothing has changed: the joint is capricious no matter what description one wishes to apply to it. That said, careful study of the 3 features of elbow joint function—force transmission, motion, and stability—has provided a basis for a prosthetic design that has proved very successful clinically. In addition to hours spent in the biomechanics laboratory, a similar amount of time was spent in the anatomy department. These 2 efforts provided the basis of the design of an articulated external fixator based on the understanding of the axis of rotation of this complex joint. We returned to the laboratory to determine whether a simple half-pin configuration was effective in the clinical circumstances in which it was being used. It was. This is an example of 3 principles: “the scientific basis of clinical practice,” “keep it simple,” and “there are no reliable shortcuts—success is the result of hard work.” It was these concepts that prompted the design of a prosthetic elbow that could reliably be used by any well-trained elbow surgeon or even motivated trauma surgeons.

One must keep an open mind. It takes a special person to push the envelope. We must be receptive to innovation, even when it seems disruptive. In my career, this is embodied by the introduction of arthroscopy into our profession. Who would have ever dreamed we would be able to fix fractures, decompress nerves, repair massive rotator cuffs, or even examine

the small bones of the wrist and foot? However, in this context, I have come to view with some degree of skepticism the motive behind the “envelope.” It appears that today, as in the past, self-gratification as well as recognition remains a palpable motive behind efforts at innovation. So the test for successful innovation is the answer to the following question: Does this innovation really make a difference, or is it just a “me too” idea?

One should keep it simple. This is one of the most important concepts by which I try to practice and to live. In clinical practice, I continue to adhere to the simple idea of listening to the patient and performing a careful history and a directed examination. Imaging, however extensive, is really not too helpful if we have inadequate information from the above 2 steps. In my last 2 clinic sessions, I encountered 2 major misdiagnoses based on the reading of the magnetic resonance imaging study that totally missed the true problem. Plain films are all that is required in the majority of elbow problems I see in my practice. That said, 3-dimensional reconstructions have become a godsend for the more complex cases, especially following trauma. When it comes to formulating the plan, the same rule holds. I try to stratify complex problems according to first principles—what is essential for success, what goals can be accomplished concurrently, what interventions need to be staggered. As a rule, I do the least amount of surgery that provides the best likelihood of realizing the patient's needs with the least chance of a complication. It is a 3-variable optimization process. The important corollary of this plan is to know when to stop. This is usually predicated on a risk-benefit consideration.

Function trumps appearances. Despite the image appearance of the joint, sometimes it is wise not to treat. For me a good example is the “two runner elbow.” I have seen several elbows over the years that, because of trauma or avascular necrosis of the trochlea, are missing the entire lateral trochlea. Yet if the radiohumeral joint is intact and the medial portion of the trochlea is intact and articulates in a congruous and stable fashion with the medial aspect of the greater sigmoid notch, nothing need be done. I feel I cannot make this elbow function any better than it is. As another example of the principle, a thorough débridement of an infected arthroplasty leaving well-fixed components in place with suppressive antibiotics is being used more and more and is an expression of a variation of the theme: function first, rules second.

The stiff elbow remains an enigma to me. Just today I received an email from an experienced and published European elbow surgeon regarding a lady with 50° spontaneous contracture of both elbows with no known systemic disease and without trauma. We have seen a small number of patients over the years in whom high-grade contractures develop with completely normal joints following trivial injury or minor surgery. Our understanding of the enigma of elbow stiffness is poor, but it is known to be genetically controlled. Regardless, surgery is effective to some extent in the majority but is not the ultimate solution. This is a biological problem that has mechanical consequences, but it is not primarily of a

mechanical etiology. Our laboratory is actively studying the problem from the perspective of both the genetic pathways that control the development of stiffness and possible treatment strategies to prevent its occurrence.

Life

Only recently have I come to appreciate something that stares us all in the face. By becoming a physician and surgeon, if we are married or have assumed such responsibilities, we have entered into an untenable situation. We have taken an oath to put our patients before our own well-being. Most of us have also taken an oath to put our partner and our relationship before anything else—hence the dilemma. How do we manage two number 1 priorities in our life? And today we see a third contender for the number 1 spot—ourselves. I have thus concluded the resolution is one that is an ongoing effort that is only ultimately resolved when we put down the scalpel or, sadly, if it results in dissolution of our bond of marriage. The second thing I have learned about life is how to prioritize. This is not to say I feel I have perfected that process, but I have found a couple of approaches to help avoid making big mistakes. When confronted with a choice between 2 options that seem to have equal importance, I perform the “step up, look back” exercise. I project myself to this same time next year, look back and ask, What do I wish I had done? Somehow for me this provides great clarity and that is what I act on. The second priority “test” is discussed below.

I have learned what I knew to start with: it's all about other people, not ourselves. This takes the form of patients who trust in us and rely on us to place their best interest ahead of all other considerations. It includes our brothers and sisters in the profession, at our institutions, and in our specialty societies and those from other cultures. These relationships add immeasurably to the satisfaction of our calling. Of course this priority must include consideration of our families. So now the final test: How does one prioritize among all these worthy groups competing for our attention? The simple answer is from a question I learned from my father—“Who will remember you when you are gone?” It is an absolute truth and one of the most important lessons. Fame and recognition, if they are present at all, are rapidly fleeting. Our contributions will be surpassed and our professional identity and contributions will fade more rapidly than we may like to believe. However, we will never be forgotten by our family. So in the end, what should be our first priority?

QED

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