



Guest Director's Corner

Learning to Care for Those in Harm's Way – Educational Innovations from The Uniformed Services University School of Medicine

by Louis Pangaro, MD, MACP

It is my privilege to comment on the contributions of the Uniform Services University School of Medicine to advance in how we educate doctors. Our school is directly funded by the federal government to produce physicians who will serve the country in the United States Army, Navy, Air Force, or Public Health Service. This notion of service is implicit in our school's motto, "*Learning to care for those in harm's way.*"

A commitment to public service is made by students in all medical schools in the country, but our innovative model of service in return for education is even more specific. After completing graduate medical education training, all of our students have an obligation to remain in national service for at least another seven years. Scholarships to medical school are not uncommon, and it is worth noting that our students not only have no tuition but are paid as active-duty officers in one of our uniformed services. Thus, they have no financial burden to make up in the decade or two after medical school, and their careers choices are not based on debt. We hope that the USU model will be used by more and more medical schools.

This long-term commitment gives rise to another unique aspect of our school, in that our graduates will, with few exceptions, do their specialty training in graduate military medical education programs and, after this, they will have at least seven years of further commitment to remain in the Military Health System (MHS) or in the Public Health Service. At a minimum, our students are in our own system for fourteen years, and most stay longer. This gives USU an

extraordinary laboratory for studying the outcomes of medical education over time, and we have our own dedicated program, the Long-Term Career Outcomes Study, designed to do just this. We now also have graduate degree programs (masters level and PhD) to provide the educational leadership needed to study the relationship between education and the care given to the nearly ten million beneficiaries in our large military health care system.

As medical educators will understand, this give us a laboratory to study our graduates long term. As you would expect, we have always placed an emphasis on competence and the readiness of graduates to perform in graduate medical education in our own programs and, eventually, to serve in combat, natural disasters, and humanitarian missions around the globe to provide, as one might say, “good medicine in bad places.”

Why we developed the RIME Framework

One of our innovations in the 1990s to support this competency-based approach was to move away from using numerical rating scales for student progress in clinical rotations to a descriptive vocabulary of students' progress, known as the “RIME framework” for “Reporter-Interpreter-Manager-Educator.” This framework supplemented the commonly used analytic frameworks (which divide competence into knowledge, skills and attitudes) into roles, which synthesize those domains. (More recently, Milestones and Entrustable Professional Activities (EPAs) have used such a synthetic approach.) RIME captures the basic rhythm of clinical work (history and physical – assessment – plan) and capitalizes on our clinical reasoning processes, which internalizes patterns of illness or, in this case, stages of professional competence. In other words, our teachers are not asked “to give a grade” for their students, but to “diagnose” or classify the levels of RIME proficiency in which the student has shown reliability. Studies of the RIME scheme from USU and other schools have shown it has a reliability and validity as good and perhaps better than commonly used alternatives.

The challenges of assuring educational quality across multiple sites and the importance of face-to-face sessions between clerkship directors and faculty members

One of the reasons it was important for USU to have an intuitive, performance, behaviorally-based evaluation framework was that we have for decades had core clinical clerkships far from our home base in Bethesda, Maryland. (We have clerkships in San Antonio, San Diego, Honolulu and other places across the country.) While all medical student schools struggle with consistency across their local regions, the LCME has held USU accountable for such inter-site consistency at great distances. Hence, we have made something of a science of this problem. The combination of the intuitive RIME scheme and face-to-face conversations with teachers has been a major component of our process.

At our institution, clerkship directors hold face-to-face conversations with faculty every few weeks to discuss their own students in a form of “case-based faculty development,” with their own students as the “cases.” These “formal evaluation sessions” were introduced at USU by my own mentor, Gordon Noel, three decades ago, and we believe that they remain the state-of-the-art in the assessment of students on clinical rotations. It may be obvious that teachers will tell you what they won’t write down, and our studies show that the process doubles the chance we will pick up cognitive or professional issues. Moreover, in a form of multi-source feedback, the clerkship director and the teachers agree on the next steps for the students, which will be looked at again at the next evaluation session. So, we have credible evaluation, we generate feedback and we calibrate the faculty all in the same session in what my colleague, Paul Hemmer, calls the “triple play.”

While the RIME scheme has been adopted in many medical schools across the country, the use of these regularly held evaluation sessions has been less popular, probably because of the time commitment for teachers and clerkship directors, approximately fifteen minutes for assessment and then fifteen minutes to generate feedback per student. With students dispersed in many hospitals, the work load is shared across on-site clerkship directors.

The Education Committee and its role in determining the need for remediation

The use of the RIME framework and then the calibration of faculty in using it are fostered by oversight of the process by an education committee review of all pass-fail grading decisions of students identified in the evaluation sessions. This innovation is at the top-level of the three-tiered system in which the clerkship directors who run these on-site evaluation sessions are themselves calibrated by a group of senior colleagues who meet on a regular basis, timed to the students' schedule to review performance, and to make any determination of a failing grade or need for remediation. The departmental education committee has representatives at the clerkship level from the pre-clerkship clinical courses, from the sub internships, and from our graduate medical education program directors involved in the decision. (Such a process has recently been adopted as a national standard for GME in the form of competency committees.) The process separates not just the teacher, but also the clerkship director herself, from making a pass/ fail decision. While not relieving individual teachers from evaluating how successfully their own students are progressing, it does separate them from the "grading process" that many teachers find emotionally difficult.

Systems and simulation in military medical training

A systems approach has been inherent in how students and faculty understand their roles in the larger military healthcare system. From our first graduating classes in the 1980s, our students have learned how their own work in our academic health center tertiary hospitals is related to medical care at the site of injury in combat settings thousands of miles away, and how triage, stabilization and evacuation back to the United States is all part of their system. This innovation may not have been widely applicable in the first decades of the school, but now all medical schools are actively looking at health systems science.

Our school has been heavily invested in simulation for decades and the Val G. Hemming Simulation Center has been a world leader in development and application of medical simulation programs. Unusual is our Wide Area Virtual

Environment (“WAVE”) where students practice resuscitating and stabilizing a patient for transfer in a setting in which the sounds of bullets flying and helicopters landing are all around them. Our final year students participate in the unique Operation Bushmaster, a combat-like exercise in which they are put into a remote, forest-like setting to practice teamwork, leadership and military medicine. Several students on a team will in this simulation be the operating surgeons, several others triage officers, several supply officers, and several will maintain the periphery against possible hostile action. (First year students play the moulaged casualties).

“A promise of duty and expertise”

We have for years used the idea of professionalism as a promise of duty and expertise introduced to our students by Dr. Edmund Pellegrino. Our educational innovations are intended to foster in our students the promise which they make to their patients and to our nation. For our faculty the promise is to foster progressive independence and to evaluate or students’ readiness for the next level of responsibility. We think of USU as “America’s medical school” with a unique role in our society and we hope that some of our innovations may be useful to other schools.

Thank you very much for the opportunity of sharing the system of which we are very proud. The innovations which I have mentioned are described in more detail in the annotated bibliography attached.

Link to [Dr. Pangaro’s annotated bibliography](#).

Link to [Dr. Pangaro’s faculty page](#).

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