Building an Academic Colorectal Division

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Abstract

Colon and rectal surgery is fully justified as a valid subspecialty within academic university health centers, but such formal recognition at the organizational level is not the norm. Creating a colon and rectal division within a greater department of surgery requires an unfailing commitment to academic concepts while promulgating the improvements that come in patient care, research, and teaching from a specialty service perspective. The creation of divisional identity then opens the door for a strategic process that will grow the division even more as well as provide benefits to the institution within which it resides. The fundamentals of core values, academic commitment, and shared success reinforced by receptive leadership are critical. Attention to culture, commitment, collaboration, control, cost, and compensation leads to a successful academic division of colon and rectal surgery.

Keywords

- core values
- academic
- research
- division

CME Objectives: On completion of this article, the reader should be able to define the academic perspective and be able to summarize the critical steps necessary to gain divisional identity within a department of surgery.

It has only been recently that colon and rectal surgery, as a discipline separate from general surgery, has gained recognition as a valid subspecialty in the academic, university-affiliated setting. In large part due to the increasing focus on quality outcomes and the need for efficiencies in care including shortening length of hospital stay, colon and rectal surgery is poised to hold a prominent and unique position in academia. It is becoming increasingly recognized that specialty care is better care and this translates into improved outcomes, decreased costs, improved patient satisfaction, and advances in clinical care that comes from research done with larger numbers of patients cared for in a uniform way by colorectal specialists who pursue the growth of surgical knowledge living within a culture of academic pursuit.^{1–5}

However, there are still relatively few separate divisions of colon and rectal surgery within university-affiliated medical centers. This presents distinct challenges both for department chairmen and the individual colon and rectal surgeon specialist. When specific quality criteria apply to only colorectal

surgical procedures, such as those presently delineated in the National Surgical Quality Improvement Program (NSQIP), for example, corrective action to improve these focused outcomes can only be taken when those who actually perform the surgery can be identified. The academic mindset, by definition, seeks to further the frontiers of surgical knowledge through a process of peer review and scholarship. Such is only possible when those responsible for the surgical care of patients are distinctly identified and “self-correct” using this academic paradigm. If any and all do whatever, whenever, this feedback process is confounded. Thus, “building” an academic colon and rectal surgery division, within a larger department of surgery is integral to the academic process, now more than ever when demands for improved outcomes, cost-effective use of newer technologies, and improvements in care of patients suffering from colon and rectal diseases are demanded by the government, third-party payers, and especially the patients.

I originally came to the Milton S. Hershey Medical Center (HMC), Penn State College of Medicine, in 1990 as a member of the Division of General Surgery within the larger Department of Surgery recruited from fellowship by founding department chair, Dr. John Waldhausen. In 2000, 10 years later, Dr. Wiley Souba the subsequent chairman of surgery

created a Division of Colon and Rectal Surgery, distinct from General Surgery with me as division head and Dr. Lisa Poritz as my sole colorectal surgical colleague. Since then this division has grown to include six surgeons, four advanced practice extenders, an American College of Graduate Medical Education (ACGME)–approved colorectal surgery training program, several research laboratory staff including a full-time MD research fellow, and a division research data manager. This building process has been imperfect, but by some measure still successful. It did not follow a specific recipe, but there were principles and philosophies applied that served its growth well and are still in effect. What follows, then, is somewhat of a retrospective on the process of building such a specialty Division of Colon and Rectal Surgery from the perspective of describing those processes and attitudes that were integral to this growth. It is divided into six sections, the order of presentation approximating the importance of each subject, but all were critical and most were simultaneously implemented. In single word representations of each section, they include (1) culture, (2) commitment, (3) collaboration, (4) control, (5) cost, and (6) compensation (► **Table 1**). With each section, as appropriate, I will describe an example of where application of the described principle promoted the academic identity and development of the Division of Colon and Rectal Surgery.

Table 1 Critical factors in building an academic division of colon and rectal surgery

Culture
Core values
Living the academic mindset
Shared success
Commitment
Focused research topics
Collaboration with
Basic scientists
Outcomes researches
Education scientists
Control
Separate and distinct performance and financial data
3 and 5 years strategic plans, aligned with institutional commitments
Cost
Responsibility for research costs, divisional initiatives
Create named endowments
Compensation
Physician report cards
Annual letter of expectations
Base plus performance-linked bonus

Culture

Culture is without doubt the most important element of a successful academic division of colon and rectal surgery. Culture describes the daily expectations of performance and accepted activity within the group. It is critically dependent on shared core values, including a definition of what constitutes the academic perspective. A culture should originate at the institutional and department level, but then must be promulgated by divisional leadership such that each divisional member, MD or otherwise, recognizes and lives this cultural mindset.

Core values are key to any culture and represent the foundation upon which any organizational enterprise exists.⁶ These values are integral to surgical professionalism in general and include (1) rigorous *honesty* in all statements and actions; (2) *reliability* and closely related, individual *accountability*; (3) *hard work and personal sacrifice* reflecting a greater concern for the well-being of others over one's self; (4) *loyalty*; and finally (5) *civility* which reflects a respect for others including colleagues and patients. The failure in any-one or more of these core values by an individual strikes at the foundation of any group collaboration, not just an academic division of colon and rectal surgery. If one member of the team is dishonest or shirks responsibility, it can rapidly contaminate the working milieu and lead to discord and adverse consequences for the group at large and, in the case of a division of surgery, can even affect patient care. In building a division of colon and rectal surgery, it is therefore critical to recruit and hire those who recognize and live with these core values as integral to their personal standards of performance. The careful “vetting” of potential divisional colleagues (which includes support staff) will serve the divisional leader well in the long term. When such values are commonly shared, team members function in concert and look to do more than their proportional share. This minimizes group discord that can sap a division leader's time (needed for investigation and meditation of conflicts) as well as avoids deterioration of division morale. In addition, the common expectation of such standards by the group tends to result in a self-correcting process for those who are deficient, even to the point of resignation (as opposed to active dismissal) due to simple peer pressure. The divisional leader needs to set, regularly revisit, and honor these core value standards.

A natural consequence of such shared values is the concept of shared success. Divisional members recognize that the unique contribution of the individual leads to the success of the division that then reflects back on the other members by being part of the successful enterprise. No one can be expert in all facets of academic colon and rectal surgery, but each individual's expert contribution is recognized by others in the group, who then take pride (and partial credit) by being associated with the contributing individual.

Beyond core values, the institutional organization from the highest to the lowest level must also foster a culture of academic pursuit. The definition of what it means to be “academic” is variable but contains three key elements. These include (1) doing research or moving the boundaries of

medical knowledge forward, (2) scholarly reporting through a peer review publishing process, and (3) teaching the next generation of caregivers.⁷ Note that this definition does not include excellence in patient care which I believe is integral to the surgical creed itself and thus is an unstated given in the academic environment.

Research means investigating new avenues of potential knowledge whether it is in basic science, new clinical care paradigms, or clinical outcomes research. Such research is only beneficial, however, if it is exposed to the criticism and review of knowledgeable peers who further refine its value. This is usually through a process of publication which is probably the most difficult but important hurdle, because it reflects the immortalization of the new knowledge for others to then benefit the future. Teaching similarly is an investment in the future well-being of the surgical discipline and the patient community. At the academic level, teaching means more than simply having residents and students in the operating room, however. Academic teaching means developing and guiding programs of didactic learning that includes the newest knowledge using tools and techniques of teaching that go beyond the “see one, do one, teach one” paradigm. Such teaching must reach beyond the individual (although mentoring is also critically important) and seek to more widely disseminate newfound knowledge to a greater number of learners. Most importantly, it means time dedicated to teaching as a priority, not incidental or secondary to other more primary pursuits. Finally, this recognition and dedication to the academic lifestyle needs to be embodied in each member of the surgical division so that when one is pursuing their academic passion, the other divisional members fill the clinical vacancy without complaint, recognizing, of course, that the favor will be returned.

An important venue for the reinforcement and education of new or ancillary staff in regard to core values and the academic mindset in our division is a mandatory divisional meeting every Wednesday morning at 6:45. This is attended by all faculty, residents, and physician extenders in the division, with representatives from continuing care, enterostomal therapy, floor nursing, operating room staff, laboratory staff, as well as occasionally coders and administration. All patients on the service and all upcoming admissions/surgeries for the following week are presented and discussed as a group. This includes identifying patients as potential study candidates to be recruited. This meeting allows all to see the standards and performance that are expected; in patient care, teaching, research, and the necessary shared contribution all make to the complex but successful process of providing patient care in an academic setting.

Commitment

In brief, commitment refers to whole-heartedly subscribing to the core values and academic mindset outlined earlier. However, satisfying the academic criteria for a research commitment from a practical standpoint can be problematic. In the modern colon and rectal surgical environment, it is impossible to be expert in everything and each individual has unique capabili-

ties and interests. Thus, to successfully pursue research, one must become especially expert in a specific and probably very narrowly defined topic and commit to becoming a world leader in that area.⁷ Such a research commitment can be in outcomes research, basic science, teaching, surgical technique, or new technologies, but rarely can it be all of these for any single individual. Pursuing several different areas of research commonly results in being expert in none and failing the peer review process that then leads to failure at a grant funding level. A successful researcher has many potential tools for success, but a key one is a dedication to knowing all there is to know on a specific subject and then creatively finding answers to relevant questions that further the field. This commitment, to being absolutely expert in an identified specific subspecialty area, is necessary for each member of a division of colon and rectal surgery. If properly done, this will lead to individual research success (including funding) which then contributes to the success of the division as a whole and fosters divisional credibility at every level. It is part of the division leader's job to help each division member identify areas of research interest, recognizing their respective strengths and interests and then to provide support (protected time, money, staff, and advice). Finally, the division leader must strategically mesh the various research commitments made by each individual so that the division as a whole maintains its financial viability while growing its academic credibility.

Within the Division of Colon and Rectal Surgery at HMC, each faculty member has recognized areas of subspecialty expertise that he or she pursues with an academic research mindset. These include minimally invasive surgery (robotics and single incision laparoscopic surgery), the genetic basis for colorectal disease and how genetics can be used to assist in surgical decision making, surgical quality and outcomes research (including minimizing readmission rates and venous thromboembolism), evolving techniques of surgical education, and the basic science of intestinal epithelial integrity including stem cell research and *Clostridial difficile* infection. Not all these research endeavors will succeed. Such is the nature of research. But each faculty member has the opportunity and, in fact, the responsibility, to pursue such an effort.

Collaboration

Increasing numbers of colon and rectal surgeons have been trained in methods of research, frequently obtaining additional degrees recognizing this effort. Such individuals can sometimes pursue academic research, grant writing, and achieve funding at an individual level. However, this is still a relatively rare phenomenon, and the majority of colon and rectal surgeons have little or no training in basic science research, clinical research design, statistical methods, bioengineering, simulation education, survey validation, materials science, or any number of other disciplines that are often necessary to pursue high-quality clinical research. However, just as we as colorectal surgeons have become expert in the clinical care of patients with colorectal diseases, others are expert in other fields that can play a critical role in finding the answers to problems in colorectal disease. The most effective

paradigm of clinical research therefore is based on collaboration, between a highly trained clinician and a highly trained basic scientist. However, to be a true research collaboration, the clinician needs to bring something to the table.⁸

As surgeons, we have a unique advantage that is infrequently available to basic scientists studying human disease. That advantage is human material including blood, serum, DNA, and most importantly, tissue that can be both diseased and healthy, frequently from the same individual. Such human samples are extremely valuable because research using such material has direct relevancy to the studied disease in question, as opposed to what information may come from an animal or cellular model that only mimics the disease process. Especially productive is a collaboration that seeks to confirm or refute in human tissues, what has been previously found in a laboratory setting by a basic scientist, using identical methodology. This kind of collaboration takes advantage of experts in both the clinical and basic science arenas, and is viewed much more favorably by funding agencies.

In our case, in 1998, we established an Inflammatory Bowel Disease (IBD) Familial DNA Registry for the initial purpose of studying the genetic causes of IBD. Over time, this has evolved into an all-encompassing Colorectal Diseases Biobank that collects blood, serum, and DNA, as well as diseased and healthy tissue from all patients undergoing surgery, regardless of diagnosis or family history. It also now includes isolated *C. difficile* microbial organisms for research. The Biobank now has specimens from over 1,700 unique individuals and is a mainstay of our division's research effort. This Biobank also represents, however, a ready resource for investigative material for other scientific researchers in the greater Penn State University system wishing to collaborate with the colorectal division. We have partnered with several basic scientists who have studied specimens collected in this way. This Biobank has now gained added notoriety by its affiliation with the recently inaugurated Penn State Hershey Institute for Personalized Medicine which seeks to identify genetic markers of disease and more importantly markers of therapeutic response. The colorectal division's Biobank is a clear example of the important contribution an academically oriented surgical colorectal division can provide using its own expertise to complement that of basic science collaborators.

Control

Much of what is described earlier took place before the creation of the Division of Colon and Rectal Surgery at HMC in 2000. This was necessary and understandable. To gain respect and credibility as a valid academic specialty service within the Department of Surgery, it was first necessary to establish the culture, show the academic commitment, and create the collaborative research enterprise. During this period, I as an individual colorectal surgeon had very little actual control over my future within the institution. To enter the next growth phase required a divisional identity, distinct from general surgery and on par with other specialty divisions, such as urology, plastic surgery, and pediatric surgery.

This occurred in 2000 and with the creation of the Division of Colon and Rectal Surgery came access to institutional data on performance, including clinical outcomes, market share, patient demographics, and financial reimbursement. Now, beyond clinical care, research, and teaching, came control and the added responsibility of broader decision making that would foster or inhibit clinical growth, improve or worsen institutional resource utilization, and thus have the newly formed Division of Colon and Rectal Surgery be viewed as either an asset or a burden on the greater medical center enterprise. Such strategic decision-making authority is the real benefit of having divisional identity. It is the inflection point that defines colon and rectal surgery as a valid subspecialty within the academic health center.

A key responsibility of the leader with such divisional identity is the generation of a business or strategic growth plan for the division as a whole for the longer term. Typically, this is done in 3- and 5-year time frames and will require the input from administrators and institution leadership. Frequently, the division leader knows exactly what he or she wants to achieve, but putting it into a time frame and then parsing those goals into the necessary intervening milestones to arrive at the larger goal is extremely important. This is a form of "project management" that is familiar to those in the business world, but less so to physicians, who often simply expect things to get done because they say so. Things will not get done without taking the big problem and breaking it up into smaller ones and assigning duties and, most importantly, defining deadlines that hold people accountable. Such planning needs to be spelled out in written, strategic 3- and 5-year plans. Frequently, such plans will be categorized into the classic triad of clinical care, research, and teaching and will therefore include targets regarding case load and market share expansion, research publications/funding, and resident training program issues.

Extremely important for success is to recognize "you can't fight city hall" and therefore the leader must align the division's strategy with that of the institution's. Many academic medical centers have institutional strengths that come from conscious decision making at the upper leadership levels. Taking advantage of those institutional commitments can rapidly propel the division forward and make it eligible for added resources and recognition. An obvious example is an institutional commitment to cancer care which can easily align with the goals in a division of colon and rectal surgery. Conversely, if the institution has a commitment to transplantation, it might be wise to include divisional efforts at identifying IBD patients with primary sclerosing cholangitis who could be candidates for liver transplant that then similarly would complement both the institution and the division's growth plans.

Cost

Along with control, comes responsibility for financial performance and suddenly the "cost" of everything affecting the division becomes important. This section will focus on those monies that are used to propel the academic initiative forward, not compensate faculty (see "Compensation" section, later). Such academic costs can be subcategorized into two

parts: (1) unfunded research which includes research technicians and data manager's salaries, laboratory supplies, publication costs, and subcontractor costs such as pathology slide preparation and statistical work and (2) divisional identity building initiatives, for example, visiting professorship costs, team building events, CME conferences put on by the division, and faculty travel costs above and beyond that covered by the department or institution.

Unfunded research costs are the greatest liability in an academic setting and in this environment of limited resources, demands careful oversight. In return for divisional research support of a faculty member, timelines are set and expectations for publications and grant writing are made. At times internal institutional funding mechanisms are available for "startup" initiatives, but even these are highly competitive and infrequently fund the entire project even when awarded. A less quantifiable cost of such unfunded research is the opportunity cost of having an expert surgeon sitting at the computer or research bench instead of being in the operating room generating relative value units (RVUs) and income. But as discussed earlier, this is the academic commitment that the institution, department, division, and faculty member accepts. In my own institution, the past accepted ratio of academic-to-clinical time was 20/80% for those not funded, but recently that has been changed to 15/85%. Those with external funding can increase the former number and decrease clinical commitment accordingly. To those without funding, increased academic time is found on weekends and evenings which tests the mettle of the academic surgeon.

Developing a source of money for such divisional discretionary spending requires effort and creativity. Again, such money can be classified into two parts: (1) operating funds and (2) endowment investment. The former pays for short-term expenses and once the money is gone, it is gone. The second, however, is key to the longer term viability of the division and its continuous academic effort. Operating funds frequently come from involvement in industrial trials, smaller donations from grateful patients, industrial fees (e.g., for the opportunity to display at a CME conference), and community fundraising efforts, such as disease awareness races or walks. Such sources can sometimes be significant as is exemplified by the "Penn State Dance-a-Thon" where students raise money through a 46-hour endurance dance which in 2013 garnered over 10 million dollars for pediatric cancer research. My own division benefits from annual cancer awareness walks and a golf fundraiser that helps support IBD research.

Endowment funds usually come from larger agencies and very commonly from individual philanthropists who have some personal bond with the recipient, whether it be the institution or a specific clinician, more usually the latter. This commonly involves a donation of somewhere between half a million and 2 million dollars or more. This can sometimes come from multiple sources, but a named professorship or chair usually is funded by a single individual or family. Such endowed positions are critical for the long-term viability of a division of colon and rectal surgery. A funded chair or professorship effectively immortalizes its home division forever more. The interest yield from the endowed amount

(usually 4–5% annually) can be used for discretionary spending to support divisional initiatives, salaries, research, or other justifiable expenses and provides a more or less guaranteed annual source of revenue. For a lesser amount, usually \$50 to 100,000, a named annual lectureship can be created, which again perpetuates a subject or person and raises the profile of the division within the institution. A major responsibility of the division leader is to recognize and pursue such endowment opportunities that will permanently guarantee the existence of the Colon and Rectal Surgery Division.

Compensation

The issue of compensation is difficult to discuss in detail because of the many different systems of financial organization among academic health centers and departments of surgery.^{9,10} Our own division, at HMC is entirely centralized, with all professional and hospital dollars being placed in "one pot" that then is distributed using a formula between academic and hospital departments based on performance and budget targets being achieved. This system has advantages and disadvantages, but what should be common in any system is the use of some sort of "physician report card" to objectively assess individual performance. In this case, included in this report are the obvious data such as RVUs, billings, collections, and case number, but it also includes "good citizenship" criteria such as attendance at key conferences (grand rounds, morbidity mortality conference), chart, and operative dictation delinquency rates and vacation/professional days used. Academic criteria are also included such as lectures given, reviews by both residents and students of teaching effort, and quality and number of publications. Research funding and other grant support is also summarized. Patient satisfaction both in the outpatient and inpatient settings is reported along with individual Surgical Care Improvement Project and NSQIP data.

Having such data provided in a summarized, uniform fashion for each faculty member is extremely valuable and allows both the division head and department chairman to be equitable in their compensation between individuals. There is still a great deal of discretion, recognizing, for example, that the potential of a new recruit doing great things in the laboratory but less active clinically still needs financial recognition. Base salaries are determined annually, based on the previous year's activity and academic title, but also tied to nationally reported compensation tables provided by the University HealthSystem Consortium (UHC) or commercially available tables (e.g., Medical Group Management Association). A significant opportunity for incentive payment bonus exists, determined by overall clinical and academic performance. Increasingly, bonuses are being tied to the satisfaction of institutional targets (e.g., decreasing length of stay at a departmental level). An annual summary letter of assessment and performance is written to the faculty member by the division head that clearly lists both academic and clinical targets for the coming year, which is then reviewed at the end of the coming year. Such a system fosters clear and common

expectations with fairness and opportunity for financial recognition of superior performance.

Summary

Colon and rectal surgery is easily justified as a valid subspecialty within academic university health centers, but such formal recognition at the organizational level is not the norm. However, when it does occur, it results in significant benefits for both the institution and the individual colon and rectal surgeon by raising the standards and profile of all involved. The academic commitment on the part of the individual colon and rectal specialist is absolutely key to achieving divisional identity, and once such recognition is achieved, opens the door for a strategic process that will grow the specialty and the home institution even more. The fundamentals of core values, academic commitment, and shared success, reinforced by receptive leadership, are critical.

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