

THE EVOLUTION OF U.S. ACADEMIC HEALTH CENTERS AND HOW THEY APPROACH PRODUCT LINE MANAGEMENT MODELS

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Abstract

Over the last 25 years, as health care has developed into an “industry” and the influence of business thinking has begun to permeate health care delivery, the U.S. academic health center faces an organizational, strategic and financial realignment in carrying out its core missions of discovery (research), transfer (education) and application (patient care). Centers of excellence and product/service line management models are emerging as a growing trend, and traditional academic structures are being challenged as the relationship between the medical school and the hospital evolves. This paper examines some of the key issues and current trends surrounding this evolution and discusses the Medical University of South Carolina’s approach to implementing a patient-focused program administration model for digestive diseases.

Changes

There are multiple forces driving the need to redefine clinical organizational structure and the delivery of care in the U.S. Academic Medical Center (AMC) setting. Changes in payment and reimbursement mechanisms, increased competition, hospital/physician alliances and, perhaps most important, an increased demand for quality service driven in part by the “managed care” movement, are just some of the external forces at work driving this change. Payment incentives have shifted dramatically from the traditional ‘fee for service’ system, where reimbursements are made for each service rendered, to prospective payment systems, such as diagnostic related groupings (DRG’s), managed care, and capitation arrangements where a third party determines allowable reimbursements. This change in funding has created an emphasis on cost reduction, operational efficiency, and service integration.

AMC’s traditionally experienced a position of privilege and were historically shielded from competitive forces that other industries faced. They benefited from their ability to offer specialty and sub-specialty care with the latest technology and treatments available. However, decreased funding for research and training programs, the abundance of specialty trained health care professionals, shrinking clinical revenues and the increased operational costs of maintaining a teaching facility are prompting

AMC's to consider adopting business methods from other industries in directing the delivery of their missions.

Another external force influencing the healthcare industry is the accelerated consolidation of small for-profit hospitals and alliances between other for-profit and not-for-profit hospitals and provider organizations. This movement has created a limited number of provider groups vying for a patient base with little or no control over the "provider of choice", and has propelled the industry toward a price-competitive, product-specific marketplace (Figure 1).

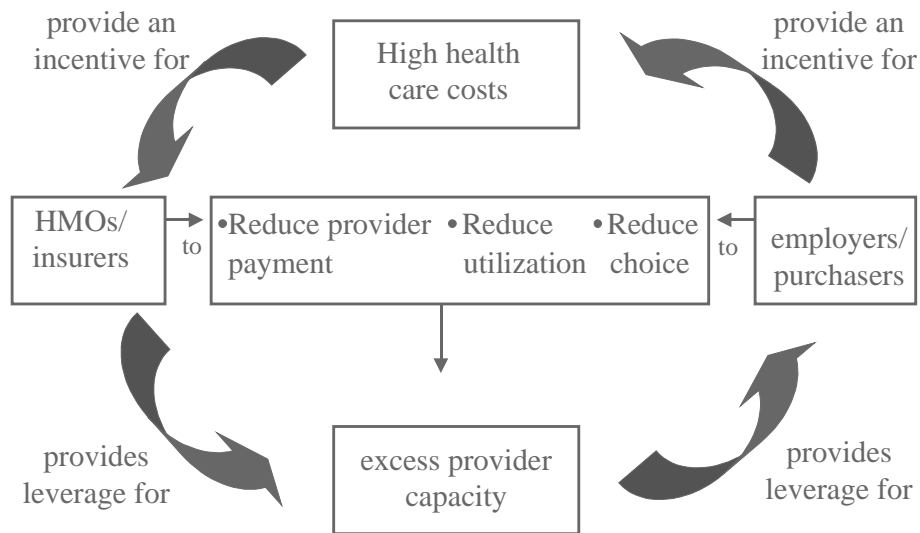


Figure 1⁷

AMC's have responded to these external forces by developing systems and structures that optimize their available resources.

History

Organizational modeling is not a new concept in healthcare. The scientific literature is full of articles which discuss the different management and organizational models used in the hospital setting over the past 20 years. Examples of well known organizational models include product line management, service line management, matrix organization and program administration. In the product line management model, the product line has been defined as "a set of activities and experiences that are offered and consumed by an identifiable set of people in ways that are different from other sets. . . .or a set of products

that when planned, managed, or marketed as a group yields some advantage over being treated as isolated individuals.”¹ Reference to a service line, or service line management, tends to be used interchangeably with product line management, but is argued to be better suited for the medical industry because “health care” is the delivery of a service with multiple products.²

The matrix model describes an organization where employees operate with two lines of authority – one oriented to the task and one to the medical discipline. This structure is well suited for bringing together the diverse specialized skills needed for solving complex problems. Sections of the Children’s Hospital in Boston and Johns Hopkins Hospital in Baltimore were reorganized using this structure.³

The program administration model is yet another system, but it distinguishes itself from product line management and other models by focusing on the patient as the critical element, instead of the process. This model is a method of organizing across traditional bureaucratic lines, and focusing organizational groups around key clinical programs in order to maximize the responsiveness to patient needs within the clinical program.⁴

Definition

The product/service line model can take place in many forms. One example is to define the product along departmental lines. Figure 2 illustrates a traditional approach to establishing product lines

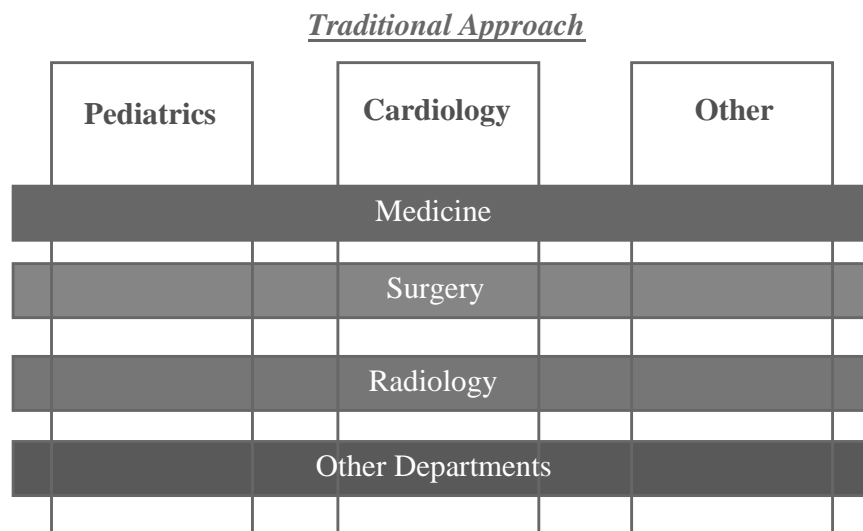


Figure 2⁵

within an AMC.⁵

In this example, the department is accountable for the activity in the product line. Many teaching institutions in the U.S. are structured along these traditional organizational lines. The departments typically have a chairperson and may have division/section chiefs or directors. They have varying degrees of autonomy, responsibility, authority and accountability for their department. The chairpersons' direct line of authority is usually the dean of the college or university.

Organization along specialty lines is shown in Figure 3. In this model, the medical specialty is the

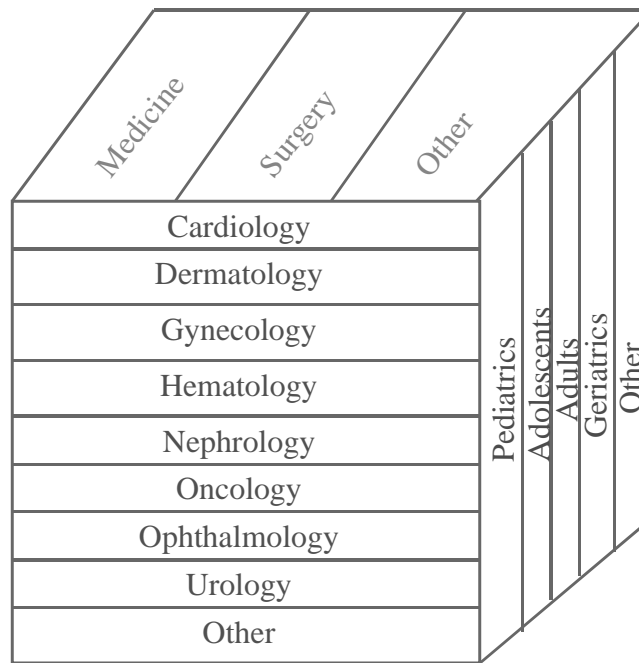


Figure 3⁵

product line and crosses over multiple departments and treatment modalities. However, as patients are referred to various departments (e.g. surgery, radiology) for diagnosis or treatment, the responsibility for their care may also transfer to that department. For example, a child that needs heart surgery, starting out as a patient in Pediatric Cardiology, may end up in the care of a cardiac surgeon from the Department of Surgery. The patient remains in the same cardiac product line, but the accountability for the care is still organized along departmental lines – the cardiologist from the Department of Medicine, and the surgeon from the Surgery Department. Even in the AMC's where product lines are organized as a matrix, the responsibility for the care of the patient still ultimately lies along departmental lines.

Many hospitals have overcome the potential fragmentation in patient care delivery by establishing care coordinators. These coordinators are usually advanced practice nurses or physician assistants with experience in the product line specialty. Their role is to work with the different departments and ancillary services within the medical center to guide the patient through their medical encounter.

The Virginia Heart Center (VHC) in Falls Church, Virginia has designed their cardiac service to focus operations and resources around a defined patient population. In the process of reorganization, they identified four changes that needed to occur to provide the foundation for their service line. First, they needed to change their thought process from focusing on disease to focusing on cardiovascular wellness, that is, providing quality, cost-effective services focused on the patient, delivered across the continuum of care including prevention, episodic acute care, chronic care, disease reversal and rehabilitation. Second, they wanted to break away from the model of designing their care around traditional departments and instead define their structure around the process of caring for similar patient groups (Figure 4). Third, they wanted to adopt a multidisciplinary model focused on the patient, which included all disciplines working together as teams. And finally, they realized that traditional roles of the employees had to be expanded to incorporate the entire continuum of care.⁶

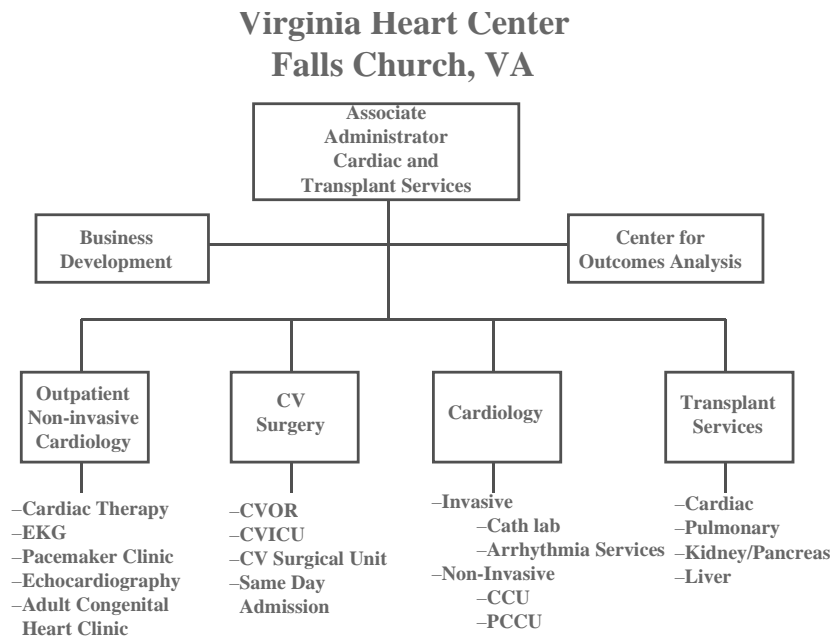


Figure 4⁶

Our Experience

Although there is no single organizational structure that will guarantee success, all AMC's require a structure that will empower the "decision makers," maximize collaboration among departments and demonstrate value in terms of cost, quality and service.⁷ The Digestive Disease Center at the Medical University of South Carolina (MUSC) is one example of how to structure and administer a program that attempts to bring the academic disciplines closer together and provide a powerful platform for collaboration in patient care, research, professional education and health promotion.

The Medical University of South Carolina in Charleston has served the citizens of South Carolina since 1824. It expanded from a small private college for the training of physicians to a state university with a medical center and six colleges for the education of a broad range of health professionals, biomedical scientists and health related personnel. The MUSC Medical Center is South Carolina's center for specialized health care. It consists of a 596-bed medical center, which includes four hospitals -- Medical University Hospital, MUSC Children's Hospital, Storm Eye Institute and the Institute of Psychiatry. It also contains centers for specialized care -- the MUSC Heart Center, MUSC Transplant Center, Hollings Cancer Center and Digestive Disease Center. More than 500 full-time physicians representing the medical and surgical specialties make up the Medical Center's staff. Teams of exceptional professional and technical staff from nursing, pharmacy, social work, therapeutic services, radiology, laboratory and other services support the delivery of patient care.

The Digestive Disease Center (DDC) began in 1994 as a collaborative venture between the College of Medicine's Departments of Medicine, Surgery and Radiology, the Medical University Hospital, and the physician practice plan (University Medical Associates). It is an autonomous organization within the College of Medicine responsible primarily to the Dean. The mission of the DDC is to provide courteous and cost effective care for patients with digestive disorders, and to provide a spring-board for the clinical research and education necessary to enhance it.

Fundamental to the concept of the DDC model was the idea that structures be designed to empower rather than restrict the patient care providers. Medical graduates training in digestive disorders are typically segmented into several different paths of specialization: gastroenterology, abdominal surgery,

invasive radiology, and others (figure 5). When put into clinical practice, this structure results in competition for patients not collaboration in patient care.⁸

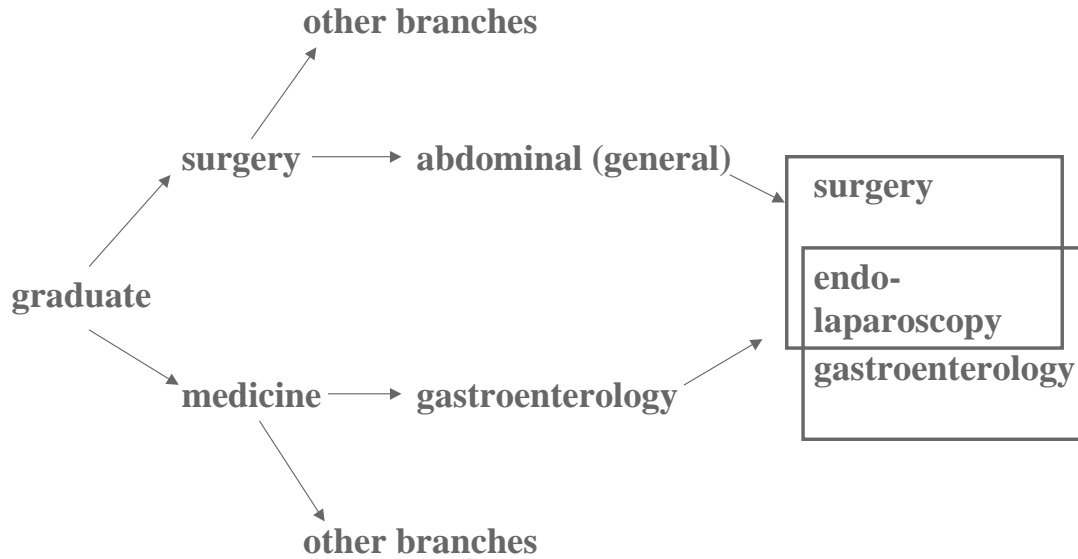


Figure 5⁸

A major challenge will be to change the structure of postgraduate education and the authority of specialty boards. Graduates would be trained in the digestive sciences before they move on into a more technical focus, for example open surgery, laparoscopy, endoscopy or interventional radiology (figure 6), with the goal of fostering collegial members of a multidisciplinary team focused on efficient patient

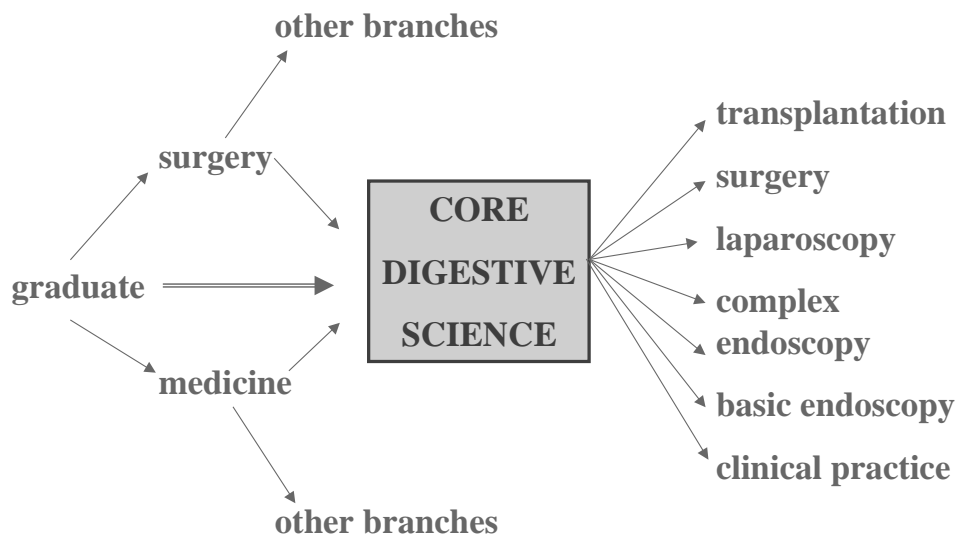


Figure 6⁸

management. The traditional specialty boards are likely to be the last barrier to fall.

However, some of the key issues surrounding the nature and delivery of health care are ignored because they raise turf battles, challenge the traditional roles of standard disciplines and specialties, and threaten existing methodologies in training and clinical practice.⁹

In October of 1998, the Board of Trustees at MUSC approved a clinical enterprise strategic plan outlining specific goals and objectives for improvements in organizational structure. The plan concluded that the restructuring of MUSC's clinical enterprise should occur on two levels: the integration of the hospital and physicians, and the integration among the physicians. In April of 1999, MUSC's College of Medicine launched a mission-based management program aimed at creating reporting tools to measure financial performance and productivity on a mission-specific basis, at three levels: the school, the department, and the individual faculty member.

Prior to adopting the new strategic plan, MUSC had already committed to two service lines, Pediatrics and Psychiatry. Both service lines have some blend of administrative and clinical leadership, however the Pediatrics service line director has no direct-line authority. The Psychiatry service line has full financial and operational integration, which allows centralized planning and resource allocation, but does not necessarily require collaboration with other departments.

In contrast to the departments of Pediatrics and Psychiatry, the Digestive Disease Center involves multiple departments and ancillary services and is organized around the patient and the disorders of a system – the digestive system. The clinical staff interfacing with the digestive patient includes gastroenterologists, hepatologists, surgeons, radiologists, oncologists, pathologists and pediatricians. It is the multidisciplinary nature of the DDC that allows it the flexibility to remain focused on the care and treatment of the patient.

The leadership group and steering committee within the DDC consists of the Medical Director, Associate Medical Director(s), Clinical Director, Business Administrator and representatives of the key constituent academic Departments (Divisions) and primary missions.

The Medical Director reports directly to the College of Medicine Dean (figure 7), and informally

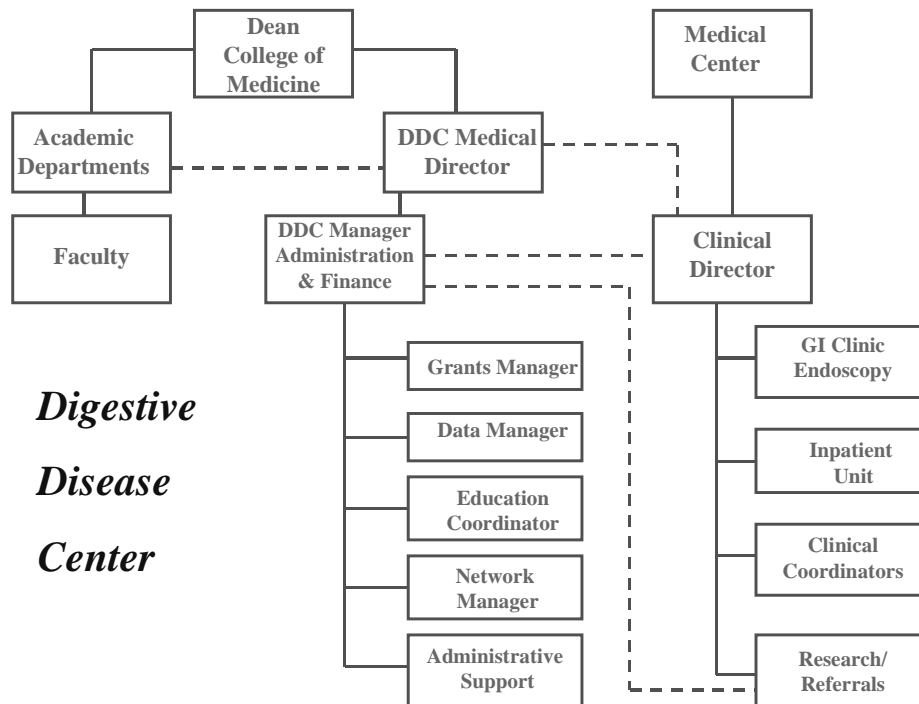


Figure 7

to the clinical leaders within the medical center, but there is also a reporting relationship to the affiliated Department Chair. The Clinical Director is a registered nurse, and is responsible for the clinical activity of the non-physician clinical staff. The staff of the inpatient and outpatient facilities, the clinical care coordinators, and the clinical research staff report to this position. The Clinical Director has a formal reporting relationship to the Clinical Administrator of the Medical Center (hospital) and an informal reporting line to the Medical Director of the DDC. The Business Manager is responsible for all the non-clinical staff and activities, including grant administration, marketing, information technology, and business office functions. This position reports to the Medical Director of the DDC. The Associate Medical Directors represent the leaders from the affiliated departments or ancillary services. All faculty members of the DDC retain their traditional academic affiliations.

The multidisciplinary aspect of clinical practice in the DDC is demonstrated by joint outpatient procedure areas, clinical case conferences, GI tumor boards, an inpatient unit for digestive patients, and an interdisciplinary team made up of clinical and non-clinical staff concerned with identifying clinical service performance improvement projects (QI). Integrated administrative facilities also promote collaboration and communication between the clinical specialties. Interdisciplinary committees meeting on a regular basis include technology development, research development, clinical sections (gastrointestinal cancer, pancreatic and biliary disease, liver disease and general gastrointestinal disease), promotion, and patient/physician education. Each of the clinical section groups work as cross functional teams interfacing with the care delivery areas, and are led by clinical experts and a care coordinator. The underlying theme is to keep the patient in the center of focus.

When designing a service line, it is important to outline what is included in the program. In the traditional academic setting, clinical productivity data is gathered, measured and analyzed according to the name of the physician rendering care. Because physicians are all associated with an academic appointment, it is easy to group the data by academic department. In fact, many clinical financial databases have a distinct field for indicating department affiliation. The clinical activity of each physician can then be included in the departmental information regardless of diagnosis or treatment intervention. However, a program that cuts across department lines and treatment modalities must be defined with specific criteria to represent the entire “universe” of that service line. Identification of appropriate codes is essential in defining a product or service line that falls outside of a distinct department or ancillary service – especially for capturing all inpatient, outpatient, physician and hospital productivity/activity.

The clinical activities of the DDC are defined as the services provided by affiliated faculty members, in the context of digestive disease, as identified by specific International Classification of Diseases-9th Revision-Clinical Modification (ICD-9-CM) codes¹⁰, Diagnostic Related Groups (DRG’s)¹¹ and Physician’s Clinical Procedure Terminology (CPT) codes¹². The ICD-9-CM codes are designed to provide a statistical classification system that arranges diseases and injuries into groups according to established criteria. The ICD-9-CM codes are used because they represent single, discrete diagnoses and are not grouped according to treatment modality, place of service or institutional infrastructure. DRG’s are diagnosis groupings used in the inpatient setting and are determined by medical coding specialists upon

patient discharge. The purpose of the procedural terminology (CPT) is to provide a uniform language that will accurately describe medical, surgical, and diagnostic services. The CPT codes are used to identify specific interventions or patient visits and can be grouped for analyzing data by physician, patient type (new vs. return) and therapy. CPT codes are used as the common language for reliable nationwide communication among healthcare providers, patients and third parties. They are also used in claims processing and the development of guidelines for medical care review, and they serve the education and research communities by providing a useful basis for local, regional, and national utilization comparisons. Figures 8 and 9 illustrate the operational outcome of the new organizational structure of digestive diseases at MUSC as defined by the appropriate codes to quantify the activity of the DDC service line. The outpatient clinical productivity (patient visits and procedures) increased 350% in the first four years of operation (cumulative). Digestive disease related inpatient discharges increased 50% and realized a corresponding decrease in the average length of hospital stay of one full day (from 7.6 to 6.6).

Digestive Disease Center

Clinical visits and procedures

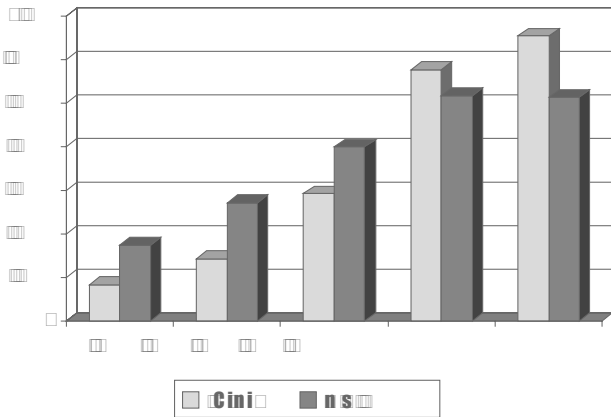


Figure 8

Digestive Disease Center

Total DDC Inpatients and ALOS

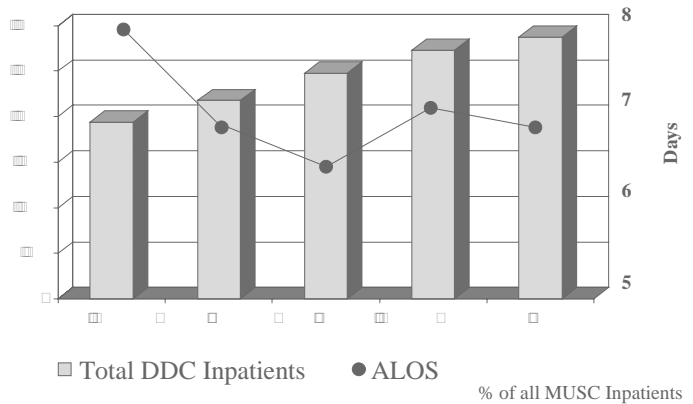


Figure 9

Challenges

The current financial arrangement at MUSC is for the technical fees (hospital billings/collections) to return to the hospital in support of the overall clinical activity within the medical center. Likewise the

professional fees (physician billings/collections) return to the academic department where the billing physician has a faculty appointment. This arrangement leaves a non-traditional entity like the Digestive Disease Center with a fiscal budget limited to clinical research funding, corporate sponsorship for specific initiatives such as teaching and training conferences and contractual or discretionary funding from the university and the medical center. It also fails to provide sufficient financial incentive for patient care providers to collaborate outside of their associated departmental structure or work toward an integrated team approach to patient care delivery. The challenge for the university and medical center leaders will be to “devise effective, credible, fully transparent financial methods to fund organizational priorities and to hold individuals and groups accountable for the funding they receive.”¹³

Having an information system capable of capturing the appropriate information and retrieving the desired data elements will be essential for evaluating the patient’s integrated experience. Clinical, quality of life, and economic/financial data will need to be gathered from existing systems, and grouped according to the defined service line.

As the number of service lines in an organization increases, there is greater potential for developing service overlap. This occurs when patient populations fall in more than one service line. Patients with cancer of the esophagus can be included as part of the digestive disease or the oncology service lines. Even when using the classification codes to define programs, there can be overlaps of patient groups. One of the challenges AMC’s will face is determining which (if any) service line to develop and how it will be “quantified.”

AMC’s are in a unique position to capitalize on the intellectual property of the faculty and the availability of their patient population for conducting basic science research that transitions into clinical investigation. The challenge will be to clarify the overall mission to help balance the demand for clinical revenue generation with the time requirements of the clinical faculty in directing research protocols.

Conclusion

In response to the revolutionary changes occurring in healthcare in the United States, academic medical centers are adopting strategic initiatives from the business sector to redesign their organizational structures. The implementation of new management models will vary from one institution to another. But the successful structures will have common themes of patient focus, clinical integration (through

multidisciplinary collaboration), incentives realigned to correspond with institutional missions and a commitment to a shared vision.

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