UK HealthCare
Growing to Serve Kentucky
2004 - 2020
Dear Colleagues,

Regardless of the complexity and competitiveness of the medical marketplace, the Commonwealth of Kentucky has mandated through House Bill 1 that the University of Kentucky Medical Center achieve top-20 status among public institutions by the year 2020. We have been inspired and energized by this challenge.

In response, we have spent a year diligently working to develop an appropriate plan to achieve this goal. At this time we feel that we understand the facilities, strategic and financial requisites necessary to become an upper echelon institution.

We present to you our roadmap to success. Our vision is bold, but our plans are appropriate and achievable. We hope that you share our ambition and pride as we initiate our efforts to grow in order to serve Kentuckians better and better.

Sincerely,

Michael Karpf, M.D.
Executive Vice President for Health Affairs
University of Kentucky
UK HealthCare – Growing to Serve Kentucky

**Introduction**

The College of Medicine of the University of Kentucky and the Chandler Medical Center were founded to specifically address the existing physician shortage in the Commonwealth and the inadequacy of patient care services available to the citizens of Central, Southern, and Eastern Kentucky. From those roots, the University of Kentucky Medical Center, which now encompasses all six of the health care related colleges and both in-patient and out-patient facilities, quickly matured into a nationally recognized and prominent research-intensive academic medical center, fulfilling all three of its missions and mandates of teaching, research, and patient care with distinction through programs of excellence. The passage of House Bill 1 in 1997 set a goal for the University of Kentucky to aspire to top-20 status among public universities. To attain this goal President Lee T. Todd Jr. reorganized the University under the Provost model and also established a focus on the clinical enterprise, UK HealthCare, under the direction of an Executive Vice President for Health Affairs (EVPHA). Recruited in October 2003, Dr. Michael Karpf became the University of Kentucky’s first EVPHA.
In order for the University of Kentucky to fulfill its stated goal to become one of the top-20 public institutions in the United States, it is absolutely essential that we have a healthy and vibrant academic medical center. The unique role of UK HealthCare in the marketplace is the provision of advanced specialty services to the citizens of the Commonwealth. Without our academic medical center, these advanced specialty services would not be available to our citizens, and they would have to seek care elsewhere if the need arose.

In building such a premier academic medical center we must continue to recruit and retain the necessary talent and expertise that will serve as the source of innovation and new knowledge. To accomplish this goal we need to invest - invest in people, programs and facilities. We have recently completed an exhaustive process that included strategic, facility, and financial planning, that has set our road map for achieving our goals. To be successful we must be diligent, disciplined and have access to substantial capital to invest in our academic medical center and thus the University of Kentucky and our community. To comprehend our vision and aspirations for the future and how we intend to achieve them, it is important to understand:

1) the missions and mandates of the academic medical center,
2) the environment that created the need for change,
3) the revised governance structure aimed at engaging the faculty,
4) the proposed facilities plan,
5) the proposed strategic plan,
6) the proposed financial plan,
7) the early successes of UK HealthCare,
8) the economic impact on Lexington and Kentucky, and
9) the implementation process needed to move us forward.

Our strategy is focused; the facility plan has been thoughtfully conceived with an incremental approach; our implementation plan is carefully laid out and flexible; and our financial approach is fiscally prudent and responsible. Each will work together to benefit the health and welfare of the citizens of the Commonwealth of Kentucky.
Missions and Mandates

E D U C A T I O N

All academic medical centers share the missions and mandates of education, research, and service. The need for more physicians that existed in 1960 still exists today. The UK Center for Rural Health recently demonstrated that Kentucky is still short 600 primary care doctors. The University of Kentucky must and will continue to stress programs in primary care, especially with a rural care emphasis. As the largest research-intensive medical center in Kentucky, we are also the best-qualified facility in the Commonwealth to train the specialists and sub-specialists that Kentucky will require to assure its citizens access to high quality, contemporary care.

Dr. William Willard, the first Dean of the College of Medicine, set the tone and established the lasting values for the College when he committed to educational excellence. Willard insisted that the University of Kentucky train physicians not only competent in the science of medicine but also sensitive to the psychosocial needs of their patients and cognizant of the public health issues of Kentucky and beyond. Dr. Jay Perman, the recently appointed Dean of the College of Medicine, has once again reaffirmed this commitment to the principles of excellence in education. Training highly competent, humanistic physicians to serve Kentucky and providing the citizens of Kentucky an opportunity to receive a quality medical education should always remain among the paramount goals of the College of Medicine.

R E S E A R C H

Research is a prerequisite for all great universities. The College of Medicine is already a research-intensive medical school, with all the basic science departments presently ranked in the top-20 of public medical schools. In aggregate, our basic science research portfolio rivals those at the most prestigious medical schools in this country, public or private. Clinical research is gaining strength; however, there is a broad consensus that additional resources and commitment are needed to allow us to achieve our aspirations and goals in clinical and translational research. To meet this challenge, Dr. Perman recently recruited a distinguished investigator, Dr. William Balke, as the Senior Associate Dean for Clinical Research. Dr. Balke's expertise and role at the University of Kentucky will be a significant factor in sustaining and improving the quality and quantity of translational research within the College.

Research also ensures the quality of care that we deliver. Institutions that participate in the development of new knowledge and move forward new approaches to care are much more likely to practice the best of present-day care.

Training highly competent, humanistic physicians to serve Kentucky and providing the citizens of Kentucky an opportunity to receive a quality medical education should always remain among the paramount goals of the College of Medicine.

Institutions that participate in the development of new knowledge and move forward new approaches to care are much more likely to practice the best of present-day care.

Without a vigorous, financially stable, and strong clinical enterprise, the educational and research programs at the University of Kentucky will falter.
**SERVICE**

UK HealthCare provides a very broad array of clinical programs from primary care to the most sophisticated of quaternary programs. These clinical programs are central to our teaching efforts as well as our research endeavors. They provide the mentors and sites for our trainees and participants in our clinical research studies. Clinical revenues cross-subsidize education and research at most universities. This is also true at the University of Kentucky. Without a vigorous, financially stable, and strong clinical enterprise, the educational and research programs at the University of Kentucky will falter and fail to meet the needs of Kentucky.

Because of the breadth and quality of faculty that we recruit and the educational and research agenda that we sustain, we develop and maintain critical clinical programs that would not be available to Central, Southern or Eastern Kentucky if our academic medical center was not present.

UK HealthCare has the only Level 1 Trauma Center serving these regions. The UK Children’s Hospital provides a full array of pediatric services, which if not otherwise available, would result in children and their families traveling long distances for complex pediatric care. The Markey Cancer Center assures access to promising, investigative, new approaches and modalities to cancer care including bone marrow transplantation. Our solid organ transplant program and our blood and marrow transplantation program are comprehensive, and the only programs of their kind in the region. Our neuroscience programs are recognized nationally and provide expertise in advanced neurology and neurosurgery. The list of our specialized programs that assure Kentuckians access to the best of contemporary care is extensive.

By working with local providers, both hospitals and physicians, we also enhance the services available in local communities through outreach programs. At the University of Kentucky, we firmly believe that we should keep all appropriate patients in their local facilities whenever possible and move individuals to the UK Hospital only when those individuals require the very specialized care only available at an academic medical center. We are committed and feel it is our responsibility to improve the health care system serving all Central, Southern and Eastern Kentucky.

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**Specialized Programs**

- Level 1 Trauma
- Pediatric sub-specialties
- Level III Neonatal Intensive Care Unit
- Comprehensive Cancer Center
- Transplantation
- Neurosciences
- Robotic surgery
Any individual can feel comfortable - should they be diagnosed with an illness, no matter how complex - that they will receive the best of care at UK HealthCare without having to consider leaving the region or the state.

**Environment**

In 1997, the Kentucky Legislature passed House Bill 1, which encouraged the University of Kentucky to strive to become a top-20 public university. The University of Kentucky Medical Center had already matured into a research-intensive academic medical center but this challenge represented a very substantial “raising of the bar” if UK is expected to join the upper echelon of the public as well as the private medical centers in the country. Encouraged by President Todd, the faculty embraced this goal.

In 2003, it became apparent that the UK academic health center was experiencing a decline in clinical activity and a resulting loss of market share. In addition, faculty were becoming disengaged because of the lack of program growth; recruitment from the outside also became difficult. To ensure a strong clinical base for research and education, President Todd decided to implement a reorganization with a strong focus on the clinical enterprise and an emphasis on reinvestment to foster growth.

President Todd moved quickly to reorganize the University under a Provost model shortly after he arrived, which helped secure the academic underpinnings of the entire University, including the academic medical center. President Todd also named Dr. Michael Karpf as Executive Vice President for Health Affairs (EVPHA) in October 2003 and charged him to bring together all the disparate clinical elements of the medical center into a coordinated, cohesive clinical enterprise – UK HealthCare. Recognizing that the clinical enterprise would require substantial financial investments in programs, people, and bricks and mortar, Dr. Karpf launched three concurrent planning processes encompassing facilities, strategy and finances in order to make these decisions wisely and in a

*Figure 1: Discharges by Month July 2000 - June 2004*
coordinated manner. More importantly, the governance model was revised in order to engage and empower the faculty by including them in decision-making. Academic planning began soon after the recruitment of Dr. Jay Perman, Dean of the College of Medicine.

**Governance**

Ultimate fiduciary responsibility for the academic medical center rests with the University of Kentucky Board of Trustees, which is composed of 20 individuals appointed by the Governor representing a broad array of constituencies from civic leaders to alumni, faculty, staff, and students. Given the complexity and diversity of the responsibilities of the Board of Trustees, the full board appropriately delegated focused oversight of the academic medical center to a five-member subcommittee. This committee has delegated more time-sensitive oversight to the President of the University who, in turn, has assigned responsibilities to the EVPHA for direct day-to-day management.

Dr. Michael Karpf recognized that moving from a common vision to specific plans and their implementation required a committed and engaged faculty who would ultimately assume ownership of the enterprise. He consequently established a UK HealthCare Advisory Board comprised of all the deans of the health-related colleges, senior clinical faculty, basic scientists, and administrators. This group, numbering 41 individuals, represents broad constituencies to whom the EVPHA is responsible. A committee of this size, obviously, cannot exercise day-to-day or even week-to-week oversight but must take a more global view. The Advisory Board meets on a quarterly basis to review activities within UK HealthCare.

Dr. Karpf established an Executive Committee beneath the Advisory Board to engage in decision making on a timely basis. This group has aggressively assumed its responsibilities through weekly meetings. The charge to this committee is broad and deep, including the responsibility to review the finances of all the elements of the clinical enterprise in detail. No financial data from any component in UK HealthCare are protected from disclosure. The committee reviews all planning processes through reports from the various subcommittees. Although extraordinarily time consuming, attendance by members has been exemplary, reflecting substantial buy-in.
Executive Committee
Chair, EVPHA
Vice Chair, Dean College of Medicine
Chair of Medicine
Chair of Surgery
Director, Markey Cancer Center
Director, UK Hospital
Director of Clinical Neurosciences Center
Three additional Department Chairs
Four Faculty Representatives
Enterprise CFO
Enterprise CIO
Vice President, Medical Center Operations
Chief Medical Officer
Assoc. VP, Medical Center Operations
Kentucky Medical Services Foundation Chair
University Physicians Group Council Chair
Executive Dean, College of Medicine
College of Dentistry Dean

Under the Executive Committee are a group of subcommittees that review and comment on specific issues and then report to the Executive Committee. In order to assure appropriate communication between the faculty and the Board of Trustees and to improve Board oversight, board members participate in various UK HealthCare committees.

Executive Committee Charge
• Develop appropriate charges for and populate the other standing committees;
• Understand and monitor the Kaufman Hall cash management analysis and plan;
• Review and monitor the budgeting process and actual financial performance of the various elements of the clinical enterprise at monthly Black Monday meetings;
• Review and monitor initiatives approved by the Strategy and Contracting Committee;
• Review and approve contracting decisions;
• Review and monitor the facilities plan;
• Review, endorse, and monitor initiatives of the Operations, Quality and Safety Committee;
• Review and monitor IS initiatives;
• Develop guidelines for malpractice coverage;
• Act as the steering committee for strategic planning;
• Review marketing for clinical enterprise.

Facilities Planning
A facilities master plan, contemplating the changing nature of health care, is critical for the vision of UK HealthCare moving forward. Our facilities must be functional and appropriately sized to meet our growth needs. The specific goals for the facilities planning process were to:

1) reassess the long-range functionality of existing buildings at the University of Kentucky Medical Center,
2) assess adequacy of ambulatory space and develop appropriate on- and off-campus opportunities for additional outpatient care,
3) develop a zoning vision for the future and an incremental phasing plan,
4) identify and address any immediate tactical space issues,
5) develop an implementation plan, and
6) estimate costs of early phase projects.

Assessment

Space Diagnostics, which subsequently merged with Kurt Salmon Associates (KSA), was originally engaged in 2000 to evaluate the physical plant of the medical center. At that time, they concluded that the physical plant had severe limitations. Critically, the consultants felt that both the main patient hospital facility and the medical and dental school buildings have severe functional limitations that could not be addressed in a fiscally responsible manner and would need to be replaced expeditiously.

The current hospital facility cannot physically operate at the licensed bed capacity (473 beds) while supporting today’s technology and meeting patients’ expectations for service and privacy.

A partnership of KSA and Perkins and Will, an architectural firm with vast experience in health care, was hired in February 2004 to coordinate our current facilities master planning. Their reassessment of the viability and functionality of the buildings of the medical center reconfirmed the original KSA findings (Figure 2). Good buildings, depicted in green, are equivalent to new facilities in functionality. Yellow buildings are appropriate for upgrading at acceptable cost. Upon the re-evaluation, most yellow buildings had deteriorated in the interim but are still worthy of reinvestment. In particular, the critical care center, built in 1992, which houses 32 of our critical care beds, 12 operating rooms, most of our pediatrics inpatient service as well as the clinical laboratories, still could stay in service for several decades with a modest investment. Red buildings require immediate replacement, as they cannot be refurbished economically. The main hospital building is categorized as a red building. The facility does not approximate present-day code; floor to ceiling heights are inadequate for rejuvenation; and the medical/surgical rooms are inadequate to support modern-day care.
**Ambulatory Facilities**

The University’s ambulatory care facilities are inadequate for today let alone the future. Many academic medical centers have built or are planning facilities for advanced outpatient care where multi-specialty teams can provide organized services to complex outpatients over an extended time up to 23 hours. Complex care involving multiple specialties also usually requires complex diagnostic capabilities.

Space for less intensive ambulatory care and current outpatient imaging services are inadequate to provide the quality and capacity needed to meet demand. We anticipate a continued growth of our ambulatory services as advances in technology allows us to manage more and more complex conditions on an outpatient basis. Improvement of the efficiency and utilization of our current ambulatory facilities combined with an expansion at the Kentucky Clinic South location should accommodate this anticipated growth. To address some of these issues immediately, it is necessary to maximize available space at Kentucky Clinic. In order to use Kentucky Clinic to maximum advantage, Student Health Services will be moved to a new facility adjacent to Kentucky Clinic and space in Kentucky Clinic will be reallocated to ensure the efficient utilization of space. Additional outpatient facilities are needed, and the preferred site adjoins Kentucky Clinic South. Ultimately, additional facilities for advanced outpatient care will need to be built.

**Zoning**

Considerable time has been invested in conceptualizing a vision for the academic health center campus for 2020. This vision takes into consideration:

1) the immediate need to site a patient care facility,
2) academic space needs for both teaching and research,
3) the potential shortfall and misalignment of ambulatory space, and
4) immediate tactical fixes that need to be implemented.

The approach is a guide but is not prescriptive in a way that will impede probable changes in the future in response to unanticipated needs or opportunities (Figure 3).

After considering potential sites, the planning group concluded the new hospital construction should proceed just south of the present facilities. Placing the building at that location maximizes connectivity between the Gill Building and Critical Care Tower. The large turnaround that will be constructed off South Limestone in front of the new patient care facility will make way-finding
in a complex academic medical center simpler for patients and their families (Figure 5). It will unify the entry point for patients to the UK Hospital, the Children’s Hospital and the Gill Heart Institute. This decision will require that the present parking garage be razed and a new garage built. One approach under consideration is replacing the parking structure on a site across South Limestone with a covered overhead pedestrian walkway or a tunnel linking the new hospital and the garage. The group also concluded that the Kentucky Clinic should remain the focus for ambulatory care on campus. Research space, including a new vivarium, is most effectively leveraged by aggregating it across South Limestone near the recently constructed research building creating a research plaza. Educational facilities will be built in conjunction with the research plaza or ultimately north of the hospital complex.

**Phasing**

Phase 1A of the facilities proposal consists of building a replacement parking garage, constructing a new patient care facility, building another ambulatory facility next to Kentucky Clinic South, and encouraging the University to construct a new facility for Student Health adjacent and connected to the Kentucky Clinic so that Student Health can use the ancillary services in Kentucky Clinic (Figure 4). During phase 1A, Kentucky Clinic will also be reconfigured and reprogrammed to enable more complex outpatient care and expanded diagnostic ancillaries. Phase 1A will be refined through a comprehensive programming and planning process as the initial part of architectural planning.

Phase 1B consists of a new research facility across South Limestone with an extensive vivarium to replace and extend the vivarium presently underground, beneath the medical school complex, as well as a combined medical and dental education building. Phase 1B must be completed expeditiously to allow for Phase 2,
which includes the build out of shelled space in the new patient care facility and the demolition of the existing medical school building and old hospital to prepare that site to accommodate a combined outpatient and inpatient facility to support aggressive quaternary care programs. Phase 2 will also require additional research space and planning must begin now for the addition of one or more research buildings to support the growing research portfolio of the University (Figure 6).

During Phase 3, there will be an opportunity to build a facility that can support coordinated and organized complex outpatient and/or inpatient services depending on how the delivery of health care evolves over the next decade on the site that accommodated the original hospital, medical and dental buildings.
TACTICAL SHORT-TERM IMPROVEMENTS

A number of short-term tactical facilities’ improvements are needed throughout the medical center. Many of these will be addressed immediately and will begin on parallel tracks. One of the most significant needs pertains to the operating rooms. There is a clear need for an expanded recovery area, the establishment of a central intake area for all same-day surgery patients, and the expansion of the space for the pre-operative clinic. Correcting these shortcomings by improving the physical facilities will have a great impact on the efficiency and quality of the surgical service.

Other near-term improvements include a plan to enhance the capacity of imaging, specifically in the Kentucky Clinic. Also underway are plans to improve care in the emergency room by developing space to separate the pediatric patients from the adult patient population. Additional chemotherapy suites will be added to the Whitney Hendrickson Building in the Markey Cancer Center and an expansion of the Ophthalmology Clinic in the Kentucky Clinic will offer opportunities for improved services and capacity to accommodate current and future patients.

PHASING TIMELINE AND COST ESTIMATES

Phase 1A should be complete by 2009; Phase 1B should be complete by 2011; Phase 2 should be complete by 2016; Phase 3 should be complete by 2020. If these facility improvements are accomplished, UK HealthCare will have a physical plant that supports its ability to be among the top-20 public institutions in the country by

Figure 6: Phase 2

Placing the new patient care facility just south of the present facilities maximizes connectivity between the Gill Building and the Critical Care Tower.
2020. The cost estimates, which are modeled in the financial cost projections, are preliminary, need further refinement, and only include Phase 1A projects.

**Strategic Planning**

Effective strategic planning for an academic medical center must take into consideration the missions and mandates as well as the marketplace; although academic medical centers are typically public, not-for-profit institutions, they must still survive in a very competitive medical business environment. Comprehensive strategic planning requires an understanding of the following:

1) Facility needs;
2) Patient throughput and quality;
3) Market development; and
4) Strategic clinical initiatives.

**Facilities**

Facility planning, as described above, focused on insuring adequate space and appropriate technology to assure the success of the clinical enterprise. We will make sure, through an iterative process, that the space needs of our strategic efforts are fulfilled.

**Patient Throughput and Quality**

The next layer of planning focused on patient flow, throughput, and quality care. The dramatic rise in health care costs threatens our community as businesses and individuals struggle to find affordable, accessible high quality care. The marketplace will exact tremendous pressure on us to be efficient and to stress quality and safety. With health care costs skyrocketing and with more costs...
shifted to patients, the pressure to be cost conscious and efficient will be unrelenting. Staying cost competitive will allow us to stay viable in the medical marketplace; however, to succeed we must be the standard-bearers in quality, safety, and service. We must develop an infrastructure that allows us to put the appropriate emphasis on costs, safety, quality, and service. To that end, we have recently established the position of Chief Medical Officer. Dr. Richard Lofgren was recruited to fill this need.

The Chief Medical Officer has primary responsibility for making us a benchmark facility in terms of our quantitative performance in quality, safety, and cost efficiency. Quality, safety, and cost efficiency are usually simultaneous outcomes of careful process improvement approaches to care. A simultaneous focus on quality, safety, and costs must be a focal point for our faculty. To accomplish this, we must have effective leadership, buy-in from clinical leaders, and attention to detail by all, as well as supportive information systems that generate data to guide our approaches.

The provision of the highest quality of care to our patients is the essential value of our academic medical center. We must identify, define and adopt the practices that will best serve our patients and our communities. In the immediate future we will ensure that we achieve outstanding performance marks on nationally recognized measures of quality that are publicly reported by the Centers for Medicare and Medicaid Services and other organizations. We will document the value of UK HealthCare by reporting the outcomes of our care to the community and our patients. We believe that patients that are well informed and educated will make more rational decisions regarding their health. We firmly believe that providing the highest quality of care is also the most cost-efficient care. We will adopt process improvement methodologies that have been successful in other industries. Our academic tradition of inquiry and innovation creates the necessary environment to improve our systems of care and to provide the needed leadership in this area.

Elements of the current systems of care in the United States are inefficient. Eliminating unnecessary variation and standardizing the process of care while providing highly personalized care is the cornerstone of improving the efficiency of the health care system. We have embarked upon a strategy to standardize our products and
systems of care – eliminating the waste associated with unneeded variation. We will continue to develop and implement guidelines and protocols to ensure that our patients receive the most effective care based upon the latest scientific evidence and knowledge. The deployment of our computerized order entry system will be a valuable asset and tool in accelerating the implementation of these protocols and processes of care.

To be successful in the future we must optimize the use of our current resources and facilities, especially the use of the operating rooms, intensive care and inpatient beds. We will increase our throughput by streamlining our processes and eliminating unnecessary steps, thereby reducing our costs associated with each case. We are currently undertaking an ambitious project to redesign the processes related to our surgical services that will allow us to accommodate additional surgical volumes, enhance our customer service, and improve clinical and financial performance. Another initiative will improve our utilization of hospital beds by creating a centralized “command center” that will expedite the admitting and discharge processes and will increase the availability of our unique advanced specialty services to accommodate the needs of patients throughout the Commonwealth should that need arise.

It is important that we meet the service as well as the technical needs of our patients. It has been shown that highly satisfied patients are more likely to comply with recommended therapy, which shortens the time to full recovery. We plan to use a well established patient satisfaction instrument throughout the clinical enterprise. This instrument will allow us to compare our performance with community as well as other academic medical centers. Within two years we expect that all of our services will reach the upper quartile for patient satisfaction. Figure 7 defines timetables for many of the incremental steps that may accomplish this emphasis on patient quality, safety and service.
We will size both primary and secondary care programs to supply adequate prospective sites, venues, and mentors for education. We will not provide any more primary or secondary care than necessary to support our teaching needs and local community service needs.

If the University of Kentucky did not provide programs in trauma, subspecialty pediatrics, neonatal intensive care, transplantation, complex neurology, neurosurgery, and minimally invasive surgery, as well as many, many other subspecialized areas, it is very likely these clinical services would not be available to many, if not most, of the citizens of Central, Southern and Eastern Kentucky.

**Market Development**

Our educational mission demands that we provide a full array of clinical services from primary to the most complex care. We will continue to develop our primary care programs to sustain our commitment to train the next generation of primary care physicians for Kentucky, to provide the highest quality care to our employees, and to effectively compete in our primary market area – Fayette County. We deliver secondary care services to a somewhat larger geographic area that includes our secondary as well as our primary market. The predominate reason for our secondary care activities is, once again, to sustain strong teaching programs. We will size both primary and secondary care programs to supply adequate prospective sites, venues, and mentors for education. We will not provide any more primary or secondary care than necessary to support our teaching needs and local community service needs.

Tertiary, quaternary, and special programs not only support our educational endeavors, but also are fundamental to our service commitments to Kentucky as well as our research agenda. If the University of Kentucky did not provide programs in trauma, subspecialty pediatrics, neonatal intensive care, complex neurology, neurosurgery, transplantation and minimally invasive surgery, as well as many, many other sub-specialized areas, it is very likely these clinical services would not be available to many, if not most, of the citizens of Central, Southern, and Eastern Kentucky. Consequently, the University of Kentucky completes the spectrum of medical services necessary to provide a full array of contemporary care to a large cross section of Kentuckians.
UK HealthCare must also help stabilize and improve the provider base of its secondary and tertiary markets. Through outreach programs, UK HealthCare brings expertise into the surrounding counties. As we develop outreach programs, we are committed to keep patients in their local facilities and local communities to the extent possible. Outreach doctors utilize local physician support and local ancillary services whenever possible. Patients are moved to Lexington only when specialty services, which are only available at our academic medical center, are required. As we begin to move programs identified with UK HealthCare out into the communities of Kentucky, we must assure the quality and safety of these programs by participating in tumor boards, independent research boards, and other quality and safety activities.

**Strategic Clinical Initiatives**

The clinical programs that are the focus of our strategic initiatives include cardiology and cardiovascular surgery, neurology and neurosurgery, oncology and oncological surgery, orthopedics, digestive disorders, minimally invasive and robotic surgery, pediatric sub-specialties, and transplantation. We have extensively planned our initiatives in these domains, defining not only required resources but also the implementation strategies and expected outcomes. A team of clinical faculty and staff for each strategic initiative developed individualized implementation plans focused on the following:

- Faculty recruitment;
- Customer service;
- Clinical outcomes;
- Integrated, targeted outreach programs; and
- Clinical program collaboration.
In order to meet our growth demands, a significant investment must be made in the strategic initiatives. Fig 9 outlines preliminary financial commitment requests for these programs, including faculty support, staff support and capital over a six-year period. In aggregate, these expenditures total approximately $59 million over the next six years. Although we will likely not meet all requests, we believe we can fund the initiatives to the level needed to achieve our goals.

**Figure 9: Strategic Clinical Initiative Investment Requests**

As we begin to move programs identified with UK HealthCare out into the communities of Kentucky, we will assure the quality and safety of these programs by participating in tumor boards, independent research boards, and other quality and safety activities.

**Figure 10: Projected Growth in Discharges**

Figure 10 depicts the projected growth in discharges over the next five fiscal years associated with the strategic clinical initiatives.
The incremental growth in discharges will increase the average daily census (ADC) based on the length of stay of the incremental cases. Figure 11 illustrates the potential growth in our average daily census. The incremental ADC’s in the graph will be considered when sizing the new facility.

The cumulative annual rate of growth starting from our present level of clinical activity is not unrealistically aggressive given the commitment of resources to these programs. The facility at our present licensed capacity should be able to accommodate the growth of these programs. These volume projections have been used to generate the anticipated clinical revenue, contribution margin, and net margin of each program. These programs add positively to the total hospital’s financial picture, producing an estimated net incremental contribution margin (incremental contribution minus incremental investment) of $38.6 million over six years. All programs and projections will be reevaluated iteratively in order to make adjustments as necessary.

Financial Plan

Our financial plan incorporates all aspects of our facilities and strategic planning efforts. The investments in new programs, facilities and equipment, over the next six years will be bold, but within the capabilities of UK HealthCare. UK HealthCare is well positioned to carry out its agenda of change. Past strong financial performance, a strong asset base, and early successes in returning activity to and above historical levels has instilled confidence that our current position, along with planned program expansion, will provide adequate operating funds and debt capacity to expand our programs and facilities to realize our goals. Our plan has been...
developed to be phased in over six years and can be modified as results from operations vary.

**Capital Demands**

Capital expenditures for FY 2005 through FY 2010 are anticipated to range from $635 million to $680 million. Figure 12 shows a breakdown of the potential capital investments under consideration. Expenditures have been anticipated based on the age of our equipment and physical plant, advances in technology and the strategic initiatives.

**Figure 12:**

**Potential Capital Investments Summary FY 2005 - FY 2010**

<table>
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<tr>
<th>Category</th>
<th>Amount*</th>
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<tr>
<td>Major Equipment and Information Systems</td>
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<tr>
<td>Facility Renovations</td>
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<tr>
<td>Program Development</td>
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<td>Ambulatory Facility</td>
<td>$20</td>
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<tr>
<td>Patient Care Facility**</td>
<td>$330 - $375</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$635 - $680</strong></td>
</tr>
</tbody>
</table>

* Dollars in millions
**Estimates include the patient care facility, replacement parking garage, connecting bridge, site work, utilities capacity and distribution, and medical equipment and furnishings; excludes capitalized interest and financing costs.

The major equipment replacement will focus on the expansion of diagnostic and treatment modalities. Information systems will advance the movement to an electronic medical record, support patient customer service needs and the reporting of diagnostic test results. Areas of expansion will include advanced technologies and treatment capabilities to support advanced cancer, neurological, heart, orthopedics, digestive diseases, and women’s and children’s services. New program funding will support the advancement of the areas of emphasis in our strategic plan. Monies for facilities planning and expansion will support our master facility plan and our short-term facilities needs.

The exact scopes of the patient care facility and ambulatory facilities expansion projects remain under development and will be determined through continued extensive planning over the next 18 to 24 months. Our master planning effort has developed preliminary patient care facility project total-cost ranges from $330 million to $375 million based on different facilities’ sizes. Ambulatory facilities’ planning has just begun, but it is likely that a new ambulatory facility at Kentucky Clinic South will cost $15 million to $20 million. These costs, along with Kentucky Clinic renovation costs,
will be refined over the next 12 to 18 months through an iterative process.

The investments in programs, equipment, and facilities will be funded by a combination of the use of current cash reserves, future cash generated by operations, and debt. A significant portion of the funds needed to achieve our clinical goals will be supported by debt, which will be fully financed by revenues from UK HealthCare. We understand and accept that all clinical endeavors must be our responsibility and totally funded by UK HealthCare.

**Historical Activity and Projected Growth**

Financial results from hospital operations are the key determinate to funding our initiatives. The major drivers of hospital financial performance are inpatient, outpatient, and emergency activity. Although a significant portion of our clinical activity is outpatient, the predominant financial component of our business remains inpatient services.

Our capital expenditure requirements over the next six years will approach $635 million. This figure may vary as final commitments to projects have not yet been made, and a resulting financial plan cannot be finalized until the proformas are refined. We believe the activity changes we have seen in the last two years, coupled with general market trends and specific program development, will allow us to realize the growth necessary to achieve our future plans. Figure 13 illustrates UK Hospital’s historical growth over the past two years. By fiscal year quarter, discharges have steadily increased during 2004 with a dramatic increase in the first quarter of fiscal year 2005. We attribute the steep increase in the most recent quarter to increased activity of faculty spurred by their involvement in decision-making and buy-in to our emerging plans.
We have developed financial scenarios based on projected activity levels. The level of activity necessary to provide sufficient cash flow and debt capacity to finance our strategic and capital plans is illustrated in Figure 14 as “required growth.” The “potential growth” is the summation of baseline activity, strategic initiatives and general market growth. The general market growth is based on the compounding annual growth rate for the Lexington hospitals over the past two years.

Figure 14 compares the cumulative growth rates of “potential growth” versus the “required growth” rate. The potential cumulative growth line (yellow) illustrates the combined impact of the strategic initiatives and general market growth. The required cumulative growth line (red) represents the level of activity required to meet the long-term objectives of the financial plan. The growth required to meet our strategic and capital plans is well within the total potential growth we may experience. The substantial clinical activity seen in the first quarter of the fiscal year has bolstered our confidence that activity will reach the required growth targets.

The growth required to meet our strategic and capital plans is well within the total potential growth we may experience.
Access to Capital

The positive historical operating performance as well as a strong liquidity position has positioned UK HealthCare well to access capital. UK HealthCare has demonstrated strong financial performance historically as shown in Figure 15. This performance is expected to be maintained throughout the project and into the future.

![Figure 15: Historical Performance and Future Projection](image)

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Discharges</td>
<td>19,845</td>
<td>19,098</td>
<td>19,675</td>
<td>26,222</td>
</tr>
<tr>
<td>Net Patient Service Revenues</td>
<td>$270.7</td>
<td>$308.4</td>
<td>$335.6</td>
<td>$566.8</td>
</tr>
<tr>
<td>Operating Cash Flow</td>
<td>$19.6</td>
<td>$23.2</td>
<td>$20.7</td>
<td>$26.0</td>
</tr>
<tr>
<td>Long-term Debt</td>
<td>$13.5</td>
<td>$6.3</td>
<td>$5.2</td>
<td>$241.6</td>
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</tbody>
</table>

Note: Dollars in millions

Figure 16 demonstrates the operating and balance sheet ratios are within the current norms for us to receive an excellent investment grade rating. Currently, the UK Hospital has a Moody’s bond rating of Aa2. We are committed to maintaining a strong credit rating moving forward, after these initial investments are made, in order to maintain financial flexibility as we contemplate subsequent phases. We will at all times exhibit financial prudence and responsibility. To that end, we will continually monitor and re-project our proformas to ensure that, should any adjustments need to be made, they will be made expeditiously.

![Figure 16: Operating and Balance Sheet Ratios](image)

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<tbody>
<tr>
<td>Profitability:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Margin(1)</td>
<td>6.2 %</td>
<td>6.7 %</td>
<td>5.6 %</td>
<td>4.3 %</td>
<td>2.5 %</td>
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<tr>
<td>Operating Cash Flow Margin(2)</td>
<td>11.0 %</td>
<td>10.9 %</td>
<td>9.7 %</td>
<td>14.2 %</td>
<td>6.3 %</td>
</tr>
<tr>
<td>Debt Position:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Debt to Capitalization(3)</td>
<td>3.6 %</td>
<td>1.5 %</td>
<td>1.2 %</td>
<td>25.1 %</td>
<td>34.3 %</td>
</tr>
<tr>
<td>Liquidity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days Cash on Hand (days)(4)</td>
<td>248.8</td>
<td>248.2</td>
<td>249.8</td>
<td>222.2</td>
<td>219.18</td>
</tr>
</tbody>
</table>

Note: Dollars in millions
(1) Operating Margin Definition
(2) Operating Cash Flow Margin Definition
(3) Debt to Capitalization Definition
(4) Days Cash on Hand (days) Definition
The UK Hospital has performed well over time, and funds all of its programs and capital as a fully self-supporting unit within the University of Kentucky. As we move into a new era of growth, we will be able to continue our excellent performance by doing the following:

- Investing in new programs;
- Understanding our clinical responsibilities to all our service areas;
- Investing in new facilities and equipment;
- Focusing on quality cost-effective patient care;
- Maintaining strong operating income; and
- Maintaining a strong balance sheet.

In summary, UK HealthCare anticipates capital expenditures of up to $635 million over the next six years and, depending on the level of funds generated from operations, the total could reach approximately $680 million. The capital expenditures will be funded by operations and debt. Based on our anticipated clinical activity and financial model, $385 million will be available from operating cash flows and we anticipate funding $250 million with debt. No major gifts are included in our planning; therefore, the receipt of any significant gifts would make it easier to accomplish our present goals and address subsequent phases.

**Early Successes**

Energy generated by the emergence of UK HealthCare, the engagement of the faculty in decision-making, and the extensive planning processes has led to substantial early successes, including:

1) an increase in clinical activity;
2) improved financial performance of the hospital and the practice plans;
3) the successful recruitment of senior leaders from outside the institution and the retention and appointment of senior leadership from within; and
4) substantial new research funding.

Clinical activity, as represented by discharges, has realized a substantial increase of over 13% from the first quarter of fiscal year 2004 to the first quarter of fiscal year 2005.
through UK HealthCare has also led to an 8.5 percent increase in billings by the practice plans. This increase in clinical activity and fiscal performance make us even more confident that we can meet the financial challenges of this plan.

In addition to operations, faculty recruitment has done well. The University of Kentucky has been successful in recruiting senior leadership from the outside. Dr. Michael Karpf was recruited in October 2003 from UCLA as the Executive Vice President for Health Affairs. In 2004, Dr. Jay Perman was recruited as the Dean of the College of Medicine from the University of Maryland. A very important early recruit of Dr. Perman was Dr. William Balke who will fill the role of Senior Associate Dean for Clinical Research. Other senior recruits from outside the University of Kentucky include:

- **David Moliterno, M.D.**, from the Cleveland Clinic as Chief of the Division of Cardiology
- **Kevin McDonagh, M.D.**, from the University of Michigan as Chief of the Division of Hematology, Oncology and Blood & Marrow Transplantation and Deputy Director of the Markey Cancer Center
- **John Rinehart, M.D.**, from the University of Alabama at Birmingham as Professor of Medicine in the Division of Hematology, Oncology and Blood & Marrow Transplantation and Director of Clinical Oncology and Clinical Research in the Markey Cancer Center
- **Leslie Crofford, M.D.**, from the University of Michigan as Chief of the Division of Rheumatology and Gloria Singleton Chair for Women’s Health
- **Timothy Bricker, M.D.**, from the University of Texas as Chair of the Department of Pediatrics
- **Richard Lofgren, M.D.**, from the Medical College of Wisconsin as Chief Medical Officer for UK HealthCare
The College of Medicine continues to expand its research profile and has already received several impressive new National Institutes of Health grants in 2004.

Several prominent appointments of individuals from inside the University of Kentucky have also been made. Dr. Roger Humphries was named the Chair of the Department of Emergency Medicine, Dr. James Buck was named the Chair of the Department of Radiology, and Dr. Joseph Springer was named the Cardinal Hill Endowed Chair in Rehabilitation. All leadership positions of UK HealthCare in the College of Medicine are presently filled.

The College of Medicine continues to expand its research profile and has received several impressive new National Institutes of Health grants in 2004. Examples of these impressive awards are as follows:

- **Sergio Melgar**, from the University of California – Los Angeles as Chief Financial Officer for UK HealthCare
- **Raymond Gagliardi, M.D.**, from Case Western Reserve University as Director of Minimally Invasive Surgery
- **Deborah Erickson, M.D.**, from Pennsylvania State University as Professor of Urology in the Department of Surgery

Examples of these impressive awards are:

- **Louis Hersh, Ph.D.**, Molecular & Cellular Biochemistry, $10,359,831, Center of Biomedical Research Excellence (COBRE) grant for research related to the molecular basis of human disease, and mentoring of assistant professors in cancer, diabetes and Alzheimer’s disease. Grant term: 9/2004 - 8/2009
- **Spinal Cord and Brain Injury Research Center (SCoBIRC)**: $5,322,926. Multiple awards from 2004 through 2009.
  - **Edward D. Hall, Ph.D.**, Anatomy & Neurobiology: Peroxynitrite-Induced Oxidative Damage in TBI, $1,021,893
• **Alexander Rabchevsky, Ph.D.**, Physiology: Role of Intraspinal Plasticity in Autonomic Dysreflexia, $1,362,524

• **Patrick G. Sullivan, Ph.D.**, Anatomy & Neurobiology: Mitochondrial Uncoupling as a Therapeutic Target in TBI, $1,215,083

• **Patrick G. Sullivan, Ph.D.**, Anatomy & Neurobiology: Oxidative Stress and the Ketogenic Diet, (R21 – Exploratory/Developmental Grant), $365,277

• **UK Spinal Cord and Brain Injury Research Center Core Grant**: $2,256,211. Grant term: 2004 - 2009


Several of our newly recruited faculty are also very well funded including:

• **Dr. William Balke**, who has multiple NIH grants, will be transferring a number of them to the University of Kentucky.

• **Drs. McDonagh, Crofford, and Erickson** will transfer their research funding to the University of Kentucky.

Even with this great success, planning for an expanded research agenda has just begun with the arrival of Dean Perman and Associate Dean for Clinical Research Balke. We will systematically identify and establish appropriate goals for growth and the requisite resources in dollars and buildings to achieve these targets. We will develop plans to identify these resources and implement the appropriate plans. Increased research activity will also have a significant economic benefit for Lexington and Kentucky. We will present a comprehensive research plan at a later date.

The patient care facility project will create around 1,600 jobs and will have an annual economic impact of $159 million at the peak of construction in the Commonwealth of Kentucky.
Economic Impact to Kentucky

The building programs and clinical growth initiatives will not only help the University of Kentucky, but they will also provide a significant economic stimulus to Lexington and Kentucky. To define the economic impact, we consulted with the Center for Business and Economic Research of the University of Kentucky.

The total economic impact of the new patient care facility includes sales, income, and jobs that will be generated in the local economy by construction, operations, research and visitor spending and is illustrated in Figure 18. Measuring the impacts related to the operations and capital expenditures of the new patient care facility is based on multipliers derived from the IMPLAN input-output model. The Minnesota IMPLAN Group has constructed these tables at the county level for each state in the nation. The IMPLAN tables provide multipliers to measure the direct as well as the indirect and induced impacts of virtually any type of economic activity in a region. The direct impact measures the changes in economic activity during the first round of spending.

Indirect impact measures changes in sales, income or employment within the region in backward-linked industries supplying goods and services to health care businesses.

The expansion of hospital operations driven by the patient care facility project will have an average annual impact of more than $92 million on the economy. Nearly 50 percent of this impact is in the form of wages and salaries from the creation of more than 1,300 jobs, many of which are professional in nature.
The key findings of the economic study are as follows:

- **Construction**
  The patient care facility project will create around 1,600 jobs and will have an average annual economic impact of $159 million at the peak of construction in the Commonwealth of Kentucky. The cumulative economic impact during construction of the new facility is $562 million.

- **Hospital Operations**
  The expansion of hospital operations driven by the patient care facility project will have an average annual impact of more than $92 million on the economy. Nearly 50 percent of this impact is in the form of wages and salaries from the creation of more than 1,300 jobs, many of which are professional in nature.

- **Visitors**
  Nearly $900,000 of visitor expenditures will have an annual economic impact of $1.5 million in the Commonwealth. More than $500,000 of this impact is in the form of wages and salaries from the creation of new jobs.

**Moving Forward**

Over the last year, UK HealthCare has emerged as the clinical enterprise for the University of Kentucky. UK HealthCare has undertaken extensive planning processes involving strategy, facilities and finances. The faculty has been engaged in these efforts in order to ensure their support. All planning processes have been coordinated and integrated. From these processes, a vision has emerged of how the academic medical center at the University of Kentucky can achieve top-20 status among public institutions by the year 2020. The plans are bold and aggressive but fiscally responsible and eminently implementable. We are committed to reevaluating and recalibrating all of our plans on an ongoing basis to make sure that we achieve our goals and make any necessary adjustments expeditiously. The plans are also incremental in nature to avoid over extension. To move these plans forward we ask the support of the Governor, the Legislature, the Board of Trustees, and the President of the University of Kentucky. Specifically, we need:

1) approval of a number of projects which must be initiated immediately;
These plans and the people that support them will poise the University of Kentucky to achieve top-20 status as an academic medical center. More importantly, these plans will allow UK HealthCare to serve the citizens and patients of Kentucky better and better in the future.

The leadership of UK HealthCare recognizes that we will have to be responsible for all clinical programs that we initiate and all clinical building projects that we commence. We have developed models that demonstrate we can financially undertake the first phase of our rebuilding project. We require approval to issue revenue bonds in order to fulfill this building project. Given the magnitude of these projects, we recognize our responsibility to keep all parties informed of our progress and seek final approval at the time we are ready to issue bonds. It is very important that we have the flexibility to issue bonds expeditiously when the need arises and when the markets are such to give us maximal value.

These plans and the people that support them will poise the University of Kentucky to achieve top-20 status as an academic medical center. More importantly, these plans will allow UK HealthCare to serve the citizens and patients of Kentucky better and better in the future. It is our commitment that, should any Kentuckian become ill, no matter how complex the illness, they can feel comfortable and confident that they will receive the best of care at UK HealthCare.