



Rationalizing Health Care in Kentucky

2015-2020 STRATEGIC PLAN



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Health Care for Kentucky

In 2004, UK HealthCare® put its first strategic plan into action, and since then, these five-year plans have become road maps for the future of the UKHC enterprise. Like all journeys, the course has been adjusted as circumstances have changed, a task made easier by the fact that our strategies are designed to be adaptive.

I've often compared the next five years to the final leg of a marathon, as UK HealthCare closes in on its goal to ensure the health system in Kentucky is able to meet the state's substantial medical needs. As in any long race, the final stretch is where the miles and hills seem to mount, and stamina, determination and persistence are most needed.

Plans move UK HealthCare forward

Previous strategic plans have moved UK HealthCare great distances. In 2004, we set out to build a center on campus that would make it possible for Kentuckians who needed complex care to receive it close to home here in Kentucky. Today, UK HealthCare has the specialty expertise to serve more patients than ever before in new, state-of-the-art facilities.

In 2010, when we recalibrated our strategic plan in an effort to adjust to its success, we realized that UK HealthCare would need to extend its reach beyond the eastern half of Kentucky to draw sufficient patient volume and ensure our most highly specialized programs remain viable. Since then, UK HealthCare has developed provider networks – alliances with other hospitals and health care providers that stretch throughout Kentucky and into neighboring states.

The foundation of future care

The strategy developed in this new plan will allow UK HealthCare to effectively deal with the multiple factors affecting health care, among them the heightened expectations and expanding knowledge of patients and families; advances in medicine; revisions in the payor system; and tighter relationships among providers.

This plan acknowledges that UK HealthCare will continue to grow in a measured, intentional fashion as it increasingly becomes Kentuckians' choice for advanced, high-acuity care. Our goal is to treat patients who are the sickest and in greatest need of the complex care UK HealthCare is best equipped to provide.



Michael Karpf, MD
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Executive Summary

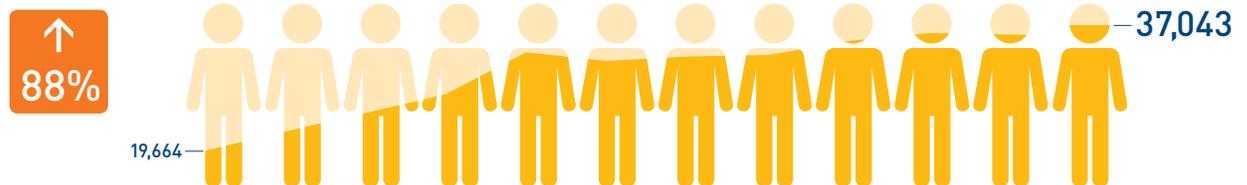
The 2015-2020 UK HealthCare Strategic Plan builds upon the momentum generated by two earlier plans – the first in 2004 that far exceeded our initial expectations and a recalibration of that plan in 2010. Adjustments are always made as needed; at the same time we have stayed true to our first fundamental strategies.

The 2015-2020 plan may be our most important to date. Health care stands at the brink of a sea change in the nation’s system of health care delivery and payment. Here in Kentucky, our 2015-2020 plan signals our intention to significantly change how patient care is delivered within the UK HealthCare enterprise and, as far as we are able to impact it, the Commonwealth.

A Decade of Tremendous Growth

Over the past 10 years, guided by our strategic plans, UK HealthCare (UKHC) has ushered in an era of tremendous growth and change. We serve more patients than ever before, with patient discharges increasing by 88 percent since 2004. In the span of a decade, UKHC has grown from a patient volume that put us in the lower quarter of teaching hospitals to one with a patient volume above the 75th percentile of teaching hospitals.

Inpatient Discharges 2004-2015



Treating more patients has brought the need for additional staff. In a decade, the number of full-time employees has nearly doubled, including a 35 percent increase in physicians. At the same time, UKHC’s operating revenues have risen 300 percent, and total assets have reached \$1.5 billion.

UKHC’s clinical outreach has been extended through numerous affiliate provider networks in Kentucky and beyond, which allow expertise, knowledge and staffing to be shared to improve treatment of endemic problems such as heart disease, diabetes and cancer. By handling less serious cases at the local level and referring patients who need complex care to UK’s medical campus in Lexington, these community providers become stronger and help ensure Kentuckians get the care they need as close to home as possible.

By focusing on our core strength to care for the most medically complex patients, UK HealthCare has become a regional referral center for tertiary and quaternary care. Based on data collected by UHC from academic medical centers nationwide, UK Chandler Hospital recently was the No. 1 hospital in the nation for the severity and complexity of patients transferred in from other hospitals – No. 2 in the nation for complexity/severity among all hospitalized patients.

Despite an overall downturn in National Institutes of Health (NIH) funding for clinical research, our focus on clinical research has continued. NIH research grants to the UK College of Medicine rose 15 percent from FY 2014 to FY 2015. In terms of the quality of patient care, UKHC leaped past 44 other academic medical centers in one year to rank 12th in the UHC Rising Star Awards in 2013. Quality, patient safety, efficiency and patient experience have been key areas of growth since 2004, and continue to be very important to our future plans.

Also, in a decade we have invested \$1.6 billion in facilities, technology and clinical programs to support the growth of our subspecialty programs.

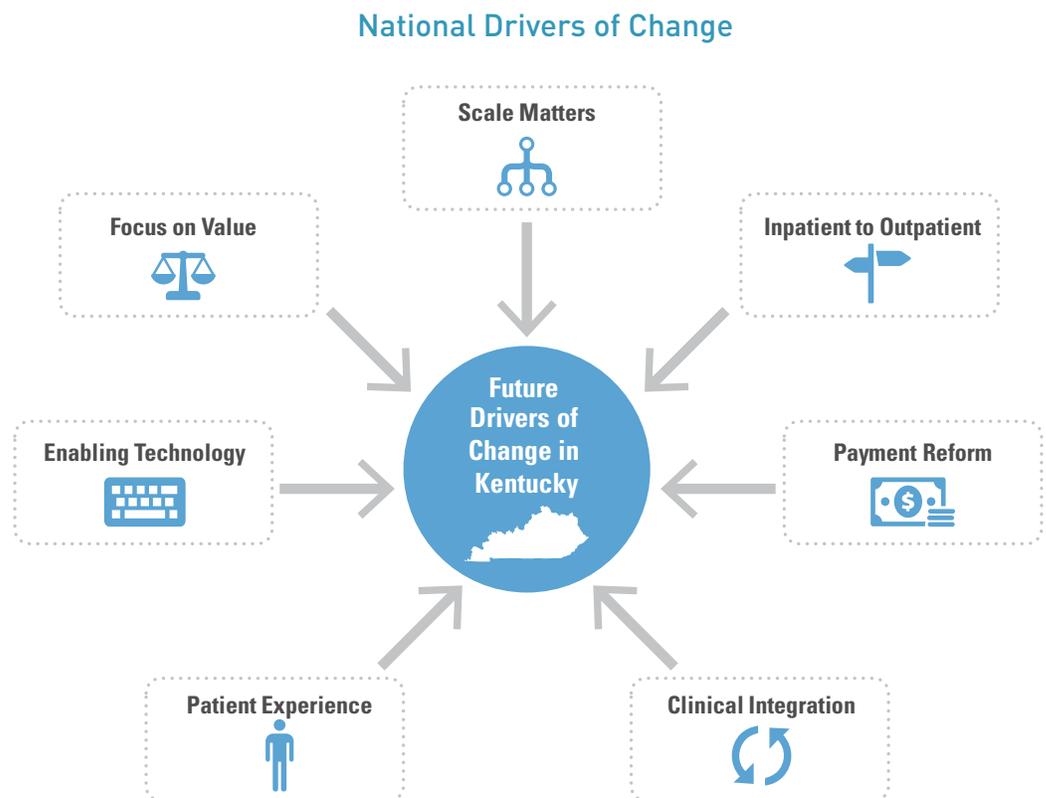
The Future of Health Care

While it is impossible to predict how the next five years will unfold, our 2020 strategic plan has taken into account the major issues that are expected to affect health care. Among the primary drivers of change are value-based payment, provider partnerships, technology, research and heightened patient expectations.

The national health care picture is changing rapidly and in myriad ways. Improved access to information and better education have created more sophisticated health care consumers. At no time have patients had as many choices and as much information as they have today.

An aging population means there are more patients with chronic, continuing diseases that need to be managed. Payment systems are shifting towards performance, with a heightened emphasis on patient outcomes and improvement of health. Technology will enable providers to follow patients across sites of care, understand outcomes, and deliver services in remote locations.

In developing the 2020 strategic plan, all aspects of the UK HealthCare enterprise were analyzed in relation to the health care industry as a whole and our mission in particular. What follows is a summary of the information contained in this strategic plan report.





Patient Experience is the Foundation

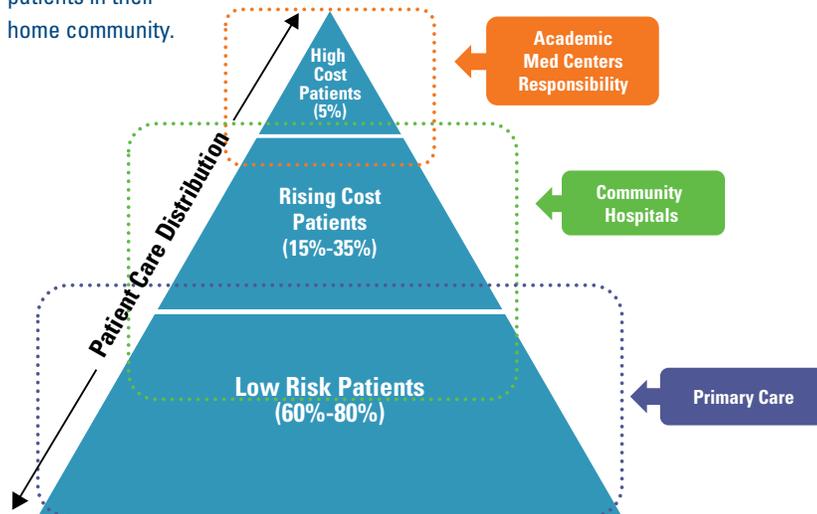
Going forward, we will emphasize a system centered on patients and their families. Patient- and family-centered care will influence every aspect of the health care enterprise, from the facilities we build and the treatment protocols we follow to our ability to move the patient through treatment and into appropriate post-acute care. This focus will be consistent through the entire patient journey with patient experience kept always top of mind.

Building systems and processes around patient and family needs will require more structured input from both. It is also evident that no great strides will be made in patient experience without first ensuring we have the full engagement of UK HealthCare's employees. Going forward, more attention will be paid to better organizational communication, reward and recognition, faculty and staff participation in designing processes and systems, and many other aspects of the work environment that contribute to a patient-centered culture.

A universitywide commitment to diversity and inclusion will contribute to our new vision of patient-centered care as it will have positive benefits for patients, families and employees alike.

Service Line Growth: Selected Strategy

UKHC will focus on treating the most complex patients and partnering with community providers to keep lower acuity patients in their home community.



Service Lines Sharpen Specialties

UK HealthCare's future is in caring for the state's sickest patients, the people who require advanced, acute care and subspecialties that an academic medical center is best equipped to deliver. That reality has led UKHC to identify nine areas of specialized care, or service lines. These service lines are areas in which UK already excels. Increasing the depth and diversification of these areas will present opportunities for targeted, sustained growth in patient volumes.

To set the goals and aspirations for these nine areas, we turned to physicians, nursing, administrative leaders and our business partners for input. Although each service line has a different set of aspirations, all share goals that run throughout this strategic plan – to offer care that is patient-centered, multidisciplinary and collaborative.

In so many complex medical cases, multiple physicians and health care providers across many disciplines are involved in the care of a patient. At UKHC, patient care will be coordinated among teams of health care professionals who treat the whole patient. These teams will likely cross what were once departmental boundaries, and by doing so, foster an increasingly cooperative and interdisciplinary course of treatment for our patients.



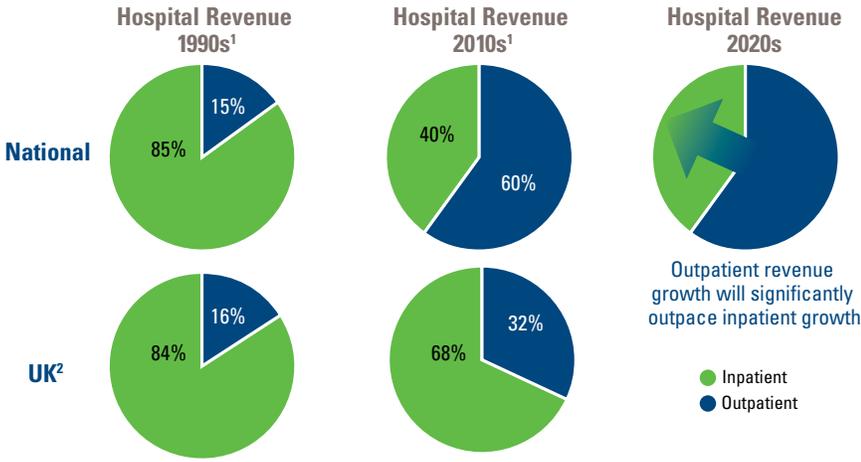
Continued Emphasis on Research and Education

Two roles of an academic medical center – clinical research and the education and training of new clinicians – will continue to serve as foundational to our health care enterprise.

The UK College of Medicine is making important advances in both areas, attracting increased research funding even as other leading medical schools see such funding dwindle, and attracting larger, more diverse, more competitive classes of students, residents and fellows. Support for both endeavors will continue through improved facilities for research and through even greater efforts to attract medical students who are ethnically, culturally and geographically diverse.

A Shift to Ambulatory Care

The number of hospitalized patients at UK HealthCare has increased dramatically for a decade, but that growth is expected to level off in future years as technology enables complex care to be delivered more often in outpatient settings. In the future, UKHC will grow its ambulatory capacity to improve access to specialists and to enhance collaboration and coordination for the management of the complex chronic patient.



Ambulatory Specialty Care: Strategic Imperative

An ambulatory care strategy is becoming increasingly important for providers nationally and in Kentucky.

Notes:
1. Outpatient Care Takes the Inside Track Modern Healthcare
2. 2010s UKHC from total gross revenue in provided revenue file

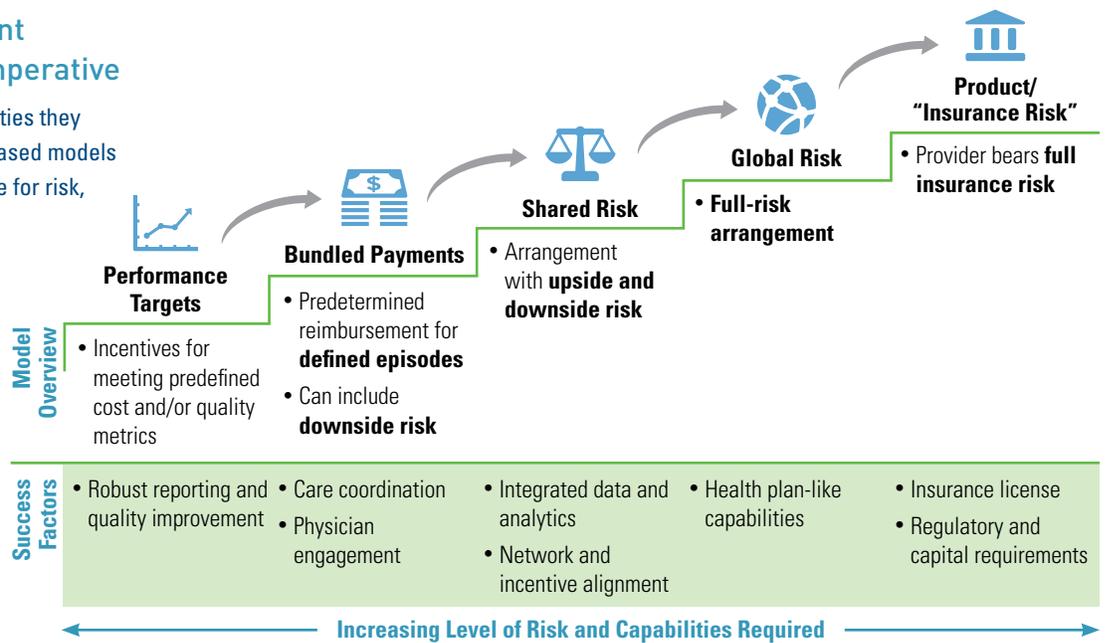


Changes in Payment Systems

Value-based care is aimed at decreasing costs by improving access, quality, safety, efficiency and patient experience, while reducing readmissions, unnecessary emergency room visits and length of stays. From the expansion of Medicaid coverage to the consolidation of payors, payment structures and systems are changing. Value-based payments based on outcomes instead of the traditional fee-for-service model are being tested throughout the country and UK HealthCare plans to adopt and test these strategies as the market dictates.

Value-Based Payment Models: Strategic Imperative

As providers develop capabilities they can pursue a variety of risk-based models based on their unique appetite for risk, investment and change.



Continuing Value of Networks

UKHC began to develop networks of health care providers with the 2004 strategic plan and plans to continue to grow, stabilize and hardwire these relationships. Networks and relationships among providers are valuable in a number of ways. They allow UKHC to share resources and expertise with health care providers throughout the state, which, in turn, enables patients with less-complex care needs to be treated close to home. As a result of these helping relationships, smaller providers feel comfortable sending their sickest patients to UK HealthCare in Lexington. This dynamic generates the patient volumes needed to support the extensive human expertise, technology and facility infrastructure necessary to handle such cases.

Going forward, UKHC intends to broaden the scope of relationships sought to include stronger relationships with post-acute health care facilities, such as rehabilitation hospitals and nursing homes. Length of stay, a key driver of cost, can be extended when patients are hospitalized longer than necessary simply because there are not enough quality post-acute care beds available. These longer stays negatively affect cost and the patient experience.

The Culmination of our Strategy: A Collaborative for Health Care in Kentucky

Across the country, consolidations and partnerships are on the rise. These alliances vary in structure but all aim to improve efficiencies through clinical integration and economies of scale. UK HealthCare will examine partnership models and opportunities as it explores ways to deliver health care more efficiently and effectively.

In 2004, UK HealthCare began pursuing a strategy of clinical outreach. Over the years this strategy has matured and evolved. UK HealthCare is now building upon these existing relationships to explore the benefits of a statewide collaborative organization that allows providers to maintain their autonomy while working together as needed to benefit from training, systems, protocols, technology, economies of scale in purchasing, advocacy and a variety of other possibilities. UK HealthCare's interest in such an organization is and has always been driven by a desire to improve the stability and quality of the state's health care system.

Supporting our Strategic Plan

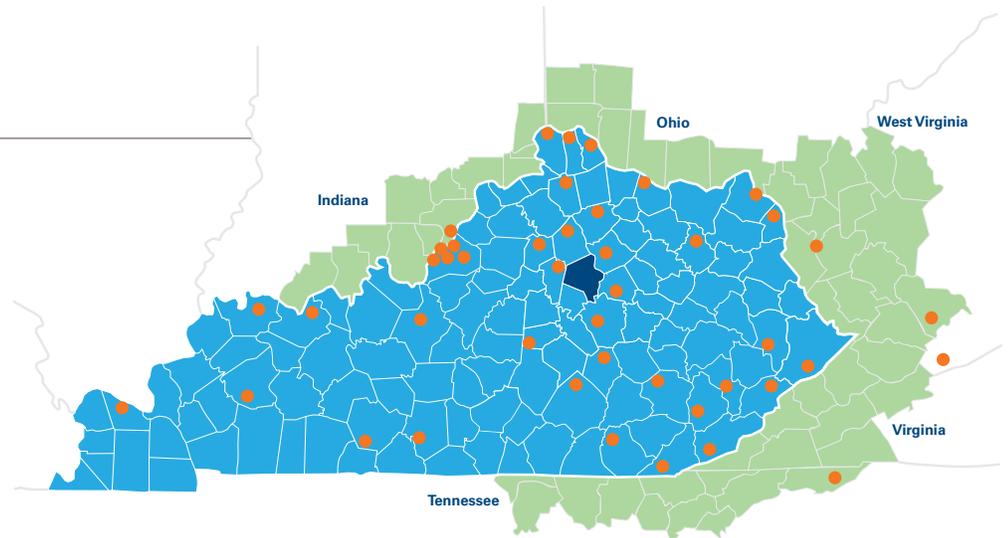
In addition to the creation of a service line operating model, a great deal of investment will also be required in facilities, technology and brand marketing. Going forward, construction on our health care campus will focus more on opening the remaining floors of UK Chandler Hospital's 2011 bed tower, Pavilion A, and then transforming areas left vacant in older buildings as units and services move into Pavilion A. These building projects will be phased and open to change as demands on clinical facilities change. UK HealthCare's physical growth will be self-funded through the sale of bonds (when approved) and UKHC's own cash flow.

Technology is a significant pillar in the success of the strategic plan. The enterprise must have a unified information system that minimizes the diversity of technology we use. Creating a unified system will be a key to improving the patient experience, affecting everything from workflow management systems and patient-care protocols to patient records. It will also be key to effectively working with other providers within a seamless continuum of care that ensures caregivers at any point on the continuum have access to the information necessary to deliver the best care possible.

Shaping Kentucky's Health Care Future

With a strong market position and a large outreach network, UK HealthCare is well positioned to shape the future of health care in Kentucky and the region. By remaining true to our missions of patient care, education and research, while committing fully to organizing our services around the patient and family and taking a collaborative approach to health care, UK HealthCare will provide leadership for the state's health care system and aspire to be the region's leader in complex care.

While change can be threatening if not prepared for and managed, UK HealthCare is taking this opportunity to change itself, lead change within the state, and build a future where instead of rationing care, Kentuckians reap the benefits of a rational system of care.



A map showing potential members of a statewide organization or collaborative. UK HealthCare's strategy to build relationships with individual providers is evolving to further connect these providers to each other where beneficial.

2015-2020 UK HealthCare Strategic Plan at a Glance

The Foundation of the Strategy: Patient-Centered Care



- 1 Patient Experience**
Design a leading patient-centric experience that positions UK HealthCare to be Kentucky's destination provider.
- 2 Strategic Cultural Alignment**
Enable staff and leadership to be ambassadors of the patient-centered culture and UK HealthCare brand.

Chapter I: Growth in Complex Care



- 1 Service Line Growth**
Develop integrated service lines and position them to achieve substantial growth over the next five years.
- 2 Service Line Growth Enablers**
Enhance service line inpatient growth by emphasizing operational excellence.
- 3 Ambulatory Specialty Care**
Support service line ambulatory growth goals by improving access to UKHC specialists, developing a patient-centered care model, and partnering with community physicians.

Chapter IV: Strategic Enablers

1 Service Line Operating Model

2 Technology

3 Strategy Implementation



Chapter II: Strengthen Partnership Networks



- 1 Acute Care Partnerships**
Partner with health systems to reduce costs, increase efficiency, position for population health, and gain access to continuum assets.
- 2 Post-Acute Care Partnerships**
Improve outcomes and reduce wait times for post-acute care by partnering with local and regional facilities.
- 3 Primary Care Partnerships**
Appropriately size UK HealthCare's primary care network in the Bluegrass region.
- 4 Community Care/Telehealth**
Strengthen Kentucky's community providers through innovative care models.

Chapter III: Value-Based Care and Payments



- 1 Value-Based Care**
Improve predictability of outcomes and cost while adopting evidence-based leading practices.
- 2 Value-Based Payment Models**
Prepare to adopt value-based payment models as market forces dictate.
- 3 Complex Chronic Care**
Build a complex chronic care clinic to reduce costs of high utilizers and improve their health outcomes.

4 Facility Planning

5 Marketing





Foundation: Patient-Centered Care



Through care that is patient- and family-centered in its design and delivery, UK HealthCare will differentiate itself in a progressive, powerful way.

Collaboration, engagement and personalization will be key to UK HealthCare's patient- and family-centered care model, an approach that will improve the patient journey as well as the quality and value of their care experience at UK HealthCare.

To attain this goal, UK HealthCare will develop a patient experience governance model, the success of which will hinge on strong clinical and administrative leadership. A strategic cultural alignment will also be critical, as it will train and equip UK HealthCare staff and leaders to be ambassadors for this patient-centered culture and the UK HealthCare brand.





Patient-Centered Care



Patient and family expectations go beyond simply receiving care. They expect their caregivers to engage them in decisions about their care and provide them with opportunities to be involved. UK HealthCare will provide this additional value to patients and families by implementing a patient- and family-centered care experience.

What is Patient- and Family-Centered Care?

The Institute for Patient- and Family-Centered Care provides this definition:

Patient- and family-centered care (PFCC) is an approach to the planning, delivery and evaluation of health care that is grounded in mutually beneficial partnerships among health care providers, patients and families. It redefines the relationships in health care.

Patient- and family-centered practitioners recognize the vital role that families play in ensuring the health and well-being of infants, children, adolescents and family members of all ages. They acknowledge that emotional, social and developmental support are integral components of health care. They promote the health and well-being of individuals and families and restore dignity and control to them.

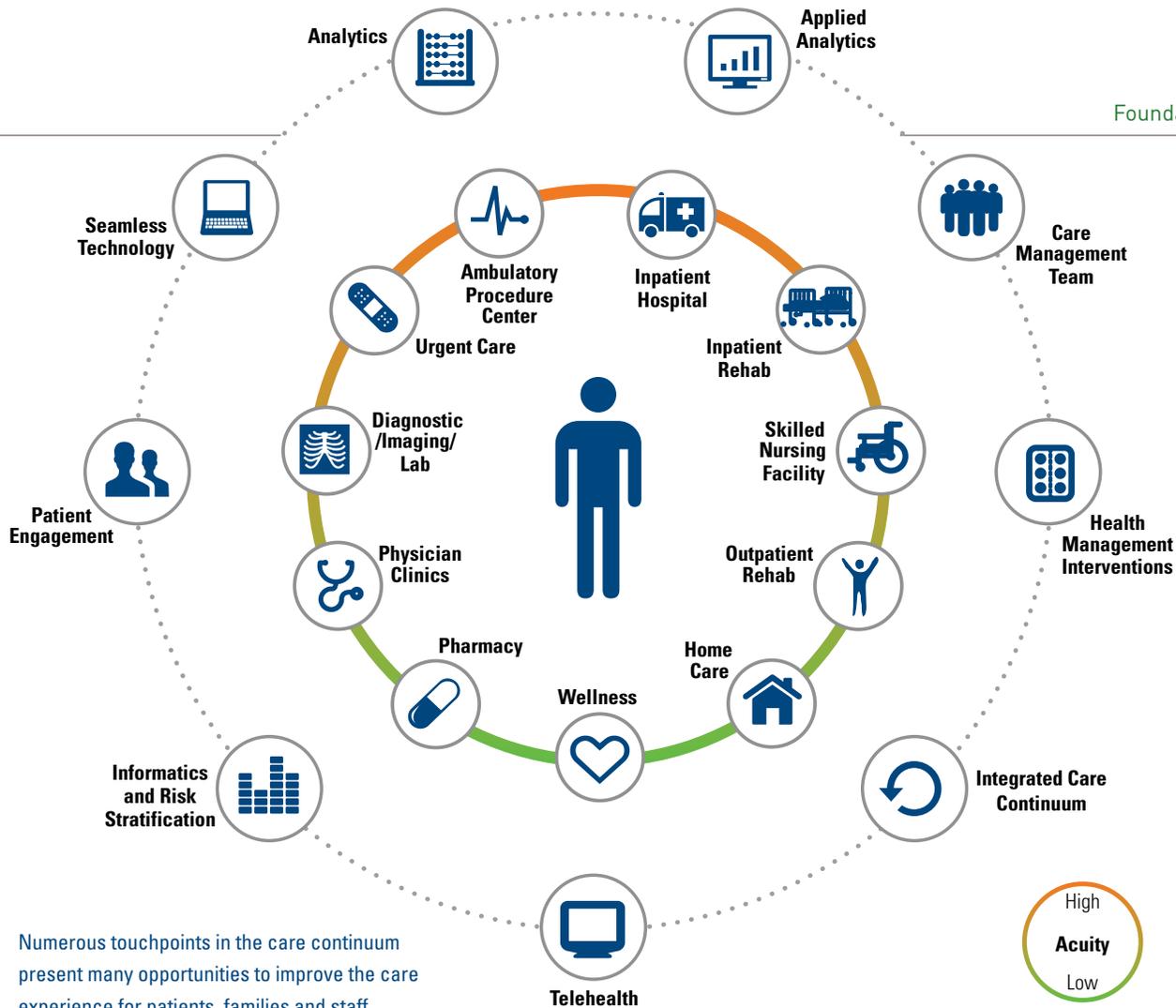
PFCC is an approach to health care that shapes policies, programs, facility design and staff day-to-day interactions. It leads to better health outcomes, wiser allocation of resources, and greater patient and family satisfaction.

The core concepts of PFCC include:

- ▶ **Respect and Dignity:** Patient and family knowledge, values, beliefs and cultural backgrounds are incorporated in the planning and delivery of care.
- ▶ **Information Sharing:** Patients and families receive timely, complete and accurate information so that they can effectively participate in care and decision-making.
- ▶ **Participation:** Patients and families are encouraged to participate in care and decision-making at the level they choose and are supported as they do so.
- ▶ **Collaboration:** Patients and families, in conjunction with health care leaders, collaborate in policy and program development, implementation, evaluation, health care facility design, professional education and the delivery of care.

Placing the patient and family at the center of care differentiates UK HealthCare (UKHC) as a destination provider by involving these groups in developing the processes, projects and services they and others will receive. By collaborating with patients and families, the UK HealthCare caregiver's skills are honed so that they can deliver not only high-quality care but an experience that leads to better outcomes, fewer readmissions and easier care transitions.

To provide an industry-leading patient- and family-centered care experience and successfully implement the strategy will require the full engagement of UKHC employees and medical staff. To be successful in the long term, UKHC must define a patient-, family- and staff-centered culture and develop a patient experience governance model and accountability structure that includes strong clinical and administrative leadership.



Numerous touchpoints in the care continuum present many opportunities to improve the care experience for patients, families and staff.

To align practice with patient- and family-centered culture, UK HealthCare will:

- ▶ Formalize the patient, family member and caregiver roles.
- ▶ Identify and validate patient types and journeys at UKHC and across the care continuum to improve patient outcomes and experiences.
- ▶ Identify key patient touch points along the patient journey by service line to increase patient and family engagement with care providers.
- ▶ Track patient, family and staff experiences to achieve both patient and service line goals.

Strategic Culture Alignment

Culture is a complex but highly valuable asset that delivers a powerful and sustainable competitive advantage. By investing in their culture, great organizations achieve great things. An

emphasis on culture is important because it drives the outcomes of employee/physician experience, patient experience, business performance and community relationships. Culture affects patient loyalty, employee engagement and retention.

By developing a cultural change program, UKHC will ensure the success of the 2020 strategic vision. Key cultural strengths and opportunities needed to implement the strategy will be identified and a cultural change program that permeates the organization will be developed to prepare for and execute strategic change.

As UKHC builds its culture, much emphasis will be placed on diversity and inclusion. Tools and strategies will be developed to educate and communicate with staff, faculty and students. UKHC has already taken positive steps toward creating a workplace and patient-care environment that builds upon the strength that diversity provides and ensures that all feel welcome, respected and included.



Chapter I: Growth in Complex Care

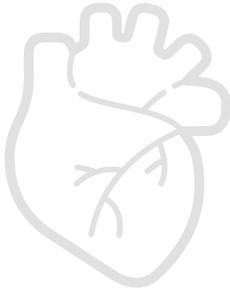
UK HealthCare aspires to be a medical destination for Kentucky and beyond. This chapter describes how we intend to expand our ability to deliver complex care.

The delivery of complex care requires strong service lines that demonstrate collaboration among multiple specialties, coordination across various sites of care and development of new models of care. Nine service lines have been selected for focus at this time, and each service has developed its own plan that builds on the foundation of the patient experience and identifies the need to develop disease-focused patient- and family-centric programs.

UK HealthCare will continue to develop and deliver advanced subspecialty care programs for the state and beyond to ensure that no Kentuckian will need to leave the state for care. To increase patients' access to care, UK HealthCare and its service lines will focus on adding capacity and achieving excellence in quality, operational efficiency and integration with ambulatory care.



Gill Heart Institute



Achieving improvements in cardiovascular health represents a critically important goal for Kentucky. The state's age-adjusted death rate due to heart disease is the sixth highest among the 50 states and is more than 18 percent higher than the U.S. average.

Since its creation in 1997, the Gill Heart Institute (GHI) has been at the forefront in the battle against heart disease. The Gill Heart Institute has improved the nation's heart health by providing:

- ▶ Seamless, high-quality and comprehensive care that is patient- and family-centered.
- ▶ Value to those we serve (patients, families, referring providers, partners, payors) across the care continuum, at the most appropriate level of care, and at the right location across Kentucky and beyond.
- ▶ Cutting-edge innovation and discovery research as a platform for current and future care.
- ▶ Leadership in education for medical professionals in training and in practice, as well as our patients and the public.

Investment in the GHI has allowed us to emerge as the region's primary referral site for advanced, subspecialty cardiovascular care. The GHI's greatest asset is its people – a multidisciplinary team of physicians and scientists across many disciplines and a comprehensive team of highly trained and experienced allied health professionals. This team provides superb and comprehensive clinical options across UK HealthCare's continuum of care, from promoting cardiovascular wellness to treating life-threatening conditions.

Programs of Excellence

- Adult Congenital Heart
- Structural and Valvular Heart
- Interventional Cardiology
- Cardiac Surgery
- Advanced Heart Failure
- Pulmonary Hypertension
- Heart Rhythm and Atrial Fibrillation
- Aortic and Vascular Diseases
- Advanced Cardiovascular Imaging
- Women's Heart Health
- Cardio-Oncology
- Anticoagulation Service
- Cardiac Rehabilitation and Wellness

Key Strengths and Accomplishments

- ▶ Robust clinical, financial and operational performance.
- ▶ A rapidly expanding Gill Heart Network of affiliate hospitals and outreach programs, which provide access to care and educational services based on distinct community needs.
- ▶ State-of-the-art facilities (32-bed cardiovascular ICU, renovated cardiac catheterization laboratories, hybrid OR, Gill Advanced Cardiovascular Imaging Center) to handle complex cardiovascular and transplant cases.
- ▶ Quality office within GHI to track performance, processes and appropriateness measures; compare outcomes to national benchmarks; and drive continuous improvement.
- ▶ Leading-edge protocols offered through a well-developed clinical trial unit and expertise in innovative clinical approaches.
- ▶ National recognition in basic and population-based cardiovascular science; unique opportunities for training in translational medicine.
- ▶ Leader in national efforts to improve care delivery systems.

#6/50 states Kentucky's age-adjusted death rate due to heart disease is the sixth highest among the 50 states.

Source: Centers for Disease Control and Prevention



Strategic Aspiration

To advance cardiovascular care by being a national **leader** and **innovator** in **comprehensive patient-centered care, research, education** and **collaboration**.

Develop a Gill Heart Institute Brand Standard

- ▶ Create an integrated service line that effectively manages patients and integrates research and educational activities across the spectrum of cardiovascular health and disease and across all points of patient contact, regardless of geographical location.
- ▶ Continue the growth of robust, disease-focused programs of excellence.
- ▶ Excel in clinical outcomes by using data to drive continuous improvements.
- ▶ Create a clinical environment that is patient-centric and easily navigable.
- ▶ Offer readily available access to inpatient, ambulatory and ancillary services.
- ▶ Strengthen relationships and create infrastructure to improve the transitions along the continuum of care.

Expand the Gill Heart Affiliate Network

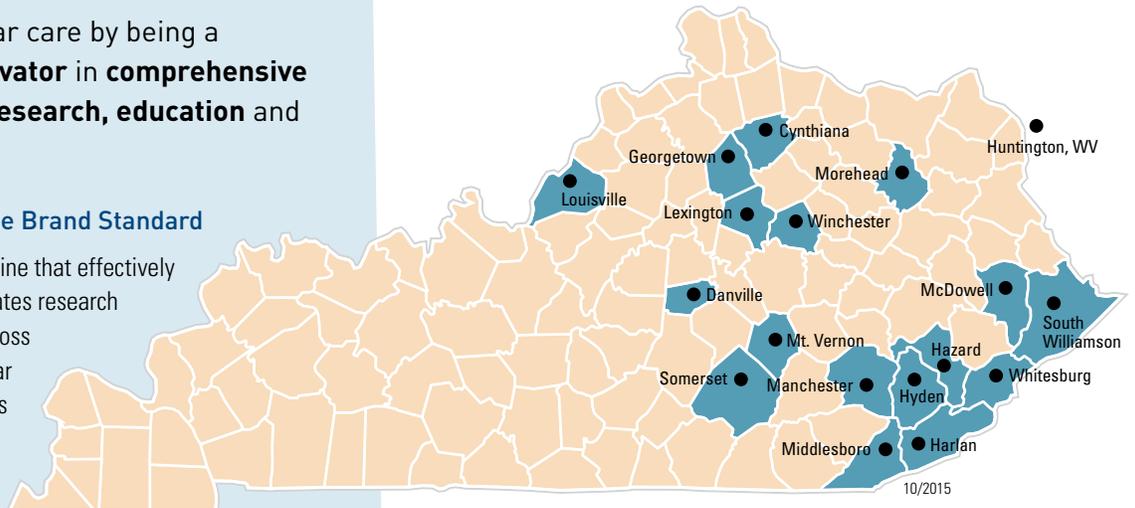
- ▶ Strengthen and strategically expand the Gill Heart Affiliate Network by standardizing the brand and enabling partners to retain appropriate cardiovascular health services.
- ▶ Expand telehealth and remote monitoring capabilities.

Leverage Clinical Innovation & Discovery Research

- ▶ Nurture innovation and deploy cutting-edge technology.
- ▶ Create a research infrastructure to drive exposure to national and regional audiences.

Educate All Stakeholders

- ▶ Promote health literacy and encourage cardiovascular health through collaborative partnerships.
- ▶ Sustain educational programs for current and future providers and scientists.



Gill Heart Institute Outreach Locations & Affiliations

Affiliate Partners

Georgetown	Georgetown Community Hospital
Harlan	Harlan ARH Hospital
Hazard	Hazard ARH Regional Medical Center
Hyden	Mary Breckinridge ARH Hospital
Lexington	UK Gill Heart Institute
Manchester	Manchester Memorial Hospital
McDowell	McDowell ARH Hospital
Middlesboro	Middlesboro ARH Hospital
South Williamson	Tug Valley ARH Regional Medical Center
Whitesburg	Whitesburg ARH Hospital
Winchester	Clark Regional Medical Center

Outreach clinics

Cardiovascular Medicine

Danville	Ephraim McDowell Regional Medical Center
Huntington, WV	Marshall University Medical Center
Louisville	Norton Audubon Hospital
Morehead	St. Claire Regional Medical Center
Mt. Vernon	Rockcastle Regional Hospital
Somerset	Lake Cumberland Regional Hospital

Cardiothoracic Surgery

Cynthiana	Harrison Memorial Hospital
Danville	Ephraim McDowell Regional Medical Center
Mt. Vernon	Rockcastle Regional Hospital

End-Stage Organ Failure and Transplantation



The University of Kentucky has a rich tradition in the study of organ failure. Since 1964, it has performed solid organ transplants on patients from Kentucky and neighboring states.

The UK Transplant Center, which specializes in the care of patients with advanced and end-stage organ disease, performs more than 175 transplants each year. The center focuses on:

- ▶ Providing integrated clinical care for patients with progressive organ failure in the context of solid organ transplantation.
- ▶ Engaging in translational scientific and public policy research relevant to organ donation, organ transplant, organ failure and disease prevention.
- ▶ Developing a regional referral and public health model to manage diverse populations with advanced organ-specific disease.

Advanced Subspecialty Programs

- Transplantation programs focused on cadaveric kidney, pediatric kidney, combined kidney-pancreas, liver, heart, pediatric lung, adult lung, combined heart-lung and combined heart-kidney
- Paired kidney exchange program
- Living kidney donor transplant program
- Active research in artificial lung technologies
- Complex hepatobiliary procedures performed in conjunction with the Markey Cancer Center
- Mechanical circulatory support (MCS)
- Extracorporeal membrane oxygenation (ECMO) Center of Excellence
- Left Ventricular Assist Device (LVAD) program

Key Strengths and Accomplishments

- ▶ Collaborated with Norton Healthcare to open an outreach transplant and specialty clinic in Louisville to provide pre- and post-transplant care so that patients do not have to leave Louisville to receive complex acute care or follow-up treatment.
- ▶ Received third straight biannual Certificate of Distinction from The Joint Commission for Advanced Ventricular Assist Device program. Implanted 32 left ventricular assist devices in 2015.
- ▶ Performed Kentucky's first, four-pair kidney exchange, the largest in the state's history. After eight surgeries in two days, four patients received kidney transplants.
- ▶ First artificial heart transplant in Kentucky.
- ▶ Transplanted 43 hearts in 2015, a record for the most heart transplants performed by a Kentucky medical center in a single year.
- ▶ Collaborated with Tri State Gastroenterology to open a liver and kidney transplant clinic in northern Kentucky to give patients from that region the option for follow up closer to home.



Strategic Aspiration

To become a **leader** in end-stage organ failure management and transplantation through **service, collaboration** and **innovation** with a focus on **quality outcomes** and **research**.

Build Leading Programs

- ▶ Improve brand recognition by increasing participation in national programs, societies and conferences.
- ▶ Develop robust interdisciplinary programs for liver and lung, and strengthen depth of service coverage for kidney and heart.
- ▶ Explore new opportunities to expand organ supply.
- ▶ Expand and improve current Quality Assurance/Quality Improvement program.

Relationships with External Partners

- ▶ Maintain existing and develop new relationships with providers across Kentucky and bordering states, focusing on increasing market share in greater Louisville, northern Kentucky and western Kentucky.
- ▶ Launch revised network offerings to cater to individual provider, practice and specialty needs and requests.

Research Platform

- ▶ Create a collaborative research effort with different departments (i.e. pharmacy, microbiology, pathology, immunology).
- ▶ Create a structure to allow staff to develop their own clinical trials.
- ▶ Expand sources of funding by increasing public funding and industry partnerships.

Comprehensive Service Offerings

- ▶ Develop housing opportunities for transplant patients.
- ▶ Improve infusion center access.
- ▶ Foster a culture of collaborative and multidisciplinary care.
- ▶ Create an inpatient medical service to manage end-stage organ disease and post-transplant patients.



Zack Poe (center) is one of the UK HealthCare transplantation program's success stories. After Zack was diagnosed with heart failure, UK HealthCare surgeons implanted a Total Artificial Heart (TAH) as a bridge. Six months later, a donor heart was found and Zack's new heart was implanted at the UK Chandler Hospital.

Markey Cancer Center



As the state's only NCI-Designated Cancer Center and one of only 69 in the country, the Markey Cancer Center (MCC) continues to significantly grow on campus and through its Markey Cancer Center affiliate and research networks.

This growth allows the MCC to continue its efforts to reduce cancer mortality in our region through a comprehensive program of cancer research, treatment, education and community engagement with a particular focus on the underserved population of Kentucky's Appalachian region. The MCC continues to:

- ▶ Optimize its National Cancer Institute (NCI) designation to strengthen research and clinical trial offerings.
- ▶ Promote the MCC as the premier health care provider for cancer patients in the region.
- ▶ Provide superior access to patient care of outstanding quality and safety.
- ▶ Develop new alliances and referral pathways for clinical destination programs.
- ▶ Maintain and strengthen financial performance for UK HealthCare.
- ▶ Enhance a patient-focused culture that values customer service.

Advanced Subspecialty Programs

- Brain (brain and spinal cord)
- Breast (male and female)
- Endocrine (thyroid, parathyroid and adrenal system)
- Gastrointestinal (colon, rectum, anus, liver, pancreas, stomach and esophagus)
- Genitourinary (kidney, prostate and bladder)
- Gynecologic (ovary, cervix, vagina and vulva)
- Head and Neck (lips, tongue, mouth, pharynx and larynx)
- Hematologic (leukemia, lymphoma, myeloma, blood and marrow transplants and hematology)
- Liver (liver and bile duct, and cancers that have spread to the liver)
- Lung and Thoracic (lungs, esophagus and chest)
- Melanoma (melanoma, sarcoma and other skin cancers)
- Musculoskeletal (bone tumors, soft tissue sarcomas and metastatic diseases of bone)
- Neuroendocrine
- Oncofertility

Key Strengths and Accomplishments

- ▶ Received National Cancer Institute (NCI) designation, which enables the MCC to increase cutting-edge research, attract the best cancer researchers and physicians, and attract more funding for research and programs.
- ▶ Expanded the Markey Cancer Center Affiliate Network in the region and beyond, which enhanced affiliate partners' capabilities as they care for patients with early-stage cancers and cancers that need straightforward management. The network also enhances cancer prevention, education and outreach in rural areas.
- ▶ Established the Markey Cancer Center Research Network, an alliance of doctors who conduct clinical research studies in the prevention, early detection and treatment of cancers. Patients at community hospitals in this network can participate in these studies as they remain close to home and under the care of their own doctors.

Cancer's impact on Kentuckians

- Kentucky has the highest rate of new cancers and the highest death rate for all cancers combined in the U.S.
- By 2020, U.S. medical expenditures for cancer are expected to top \$200 billion; in Kentucky, the cost of cancer care is expected to increase 69 percent.
- By 2020, the World Health Organization predicts the incidence of cancer throughout the world will increase by 50 percent.
- By 2020, because of a growing and aging population, the U.S. will have 30 percent more cancer survivors.



Strategic Aspiration

To decrease cancer mortality among Kentuckians by 50 percent by providing **comprehensive patient- and family-centered care through prevention and education, cutting-edge research and community engagement.**

Create a Fully Integrated Oncology Center

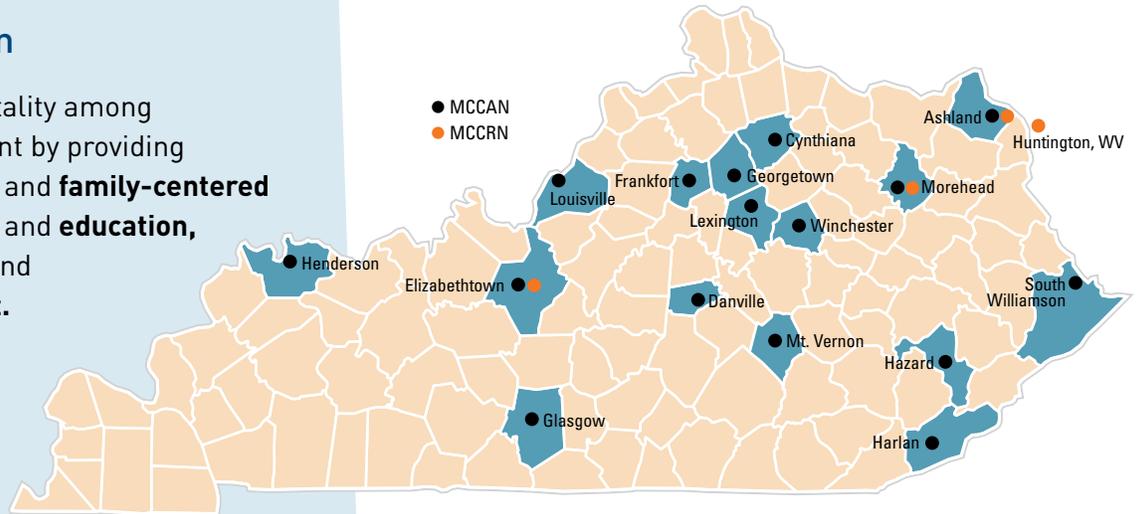
- ▶ Unite inpatient and outpatient care, operating rooms, intensive care unit, centralized phlebotomy with laboratory, oncology-specific urgent treatment center, pharmacy, integrative medicine, and diagnostic and interventional radiology.
- ▶ Expand infusion service offerings to optimize chemotherapy and research infusions.
- ▶ Create a uniform operating model to coordinate patient care across all subspecialty areas to permit a 'one visit' diagnosis.

Create a Center for Comprehensive Personalized Medicine

- ▶ Perform all genetic analyses in-house and provide treatment based on personalized genomic analysis.
- ▶ Refine procedures to offer all relevant clinical trials to all patients; expand Phase I and complex Phase II portfolio.
- ▶ Expand multidisciplinary programs in breast, gastrointestinal, lung, neuro-oncology and bone marrow transplant.
- ▶ Create specialty oncology pharmacy.

Extend Reach into the Community

- ▶ Strengthen referrals through joint tumor boards, embedded clinicians, off-site clinics and molecular oncology expertise for complex patients.
- ▶ Conduct clinical trials across affiliate research network.
- ▶ Expand initiatives in cancer prevention and screening.



Markey Cancer Center Affiliate Network (MCCAN)

(as of Oct. 2015)

Ashland	Our Lady of Bellefonte Hospital
Cynthiana	Harrison Memorial Hospital
Danville	Ephraim McDowell Regional Medical Center
Elizabethtown	Hardin Memorial Hospital
Frankfort	Frankfort Regional Medical Center
Georgetown	Georgetown Community Hospital
Glasgow	TJ Samson Community Hospital*
Harlan	Harlan ARH Hospital
Hazard	Hazard ARH Regional Medical Center
Henderson	Methodist Hospital
Lexington	UK Markey Cancer Center
Louisville	Norton Cancer Institute
Morehead	St. Claire Regional Medical Center
Mt. Vernon	Rockcastle Regional Hospital
S. Williamson	Tug Valley ARH Regional Medical Center
Winchester	Clark Regional Medical Center*

*candidate members

Markey Cancer Center Research Network (MCCRN)

(as of Dec. 2015)

Ashland	King's Daughters Medical Center
Elizabethtown	Hardin Memorial Hospital
Huntington, WV	St. Mary's Medical Center
Morehead	St. Claire Regional Medical Center

Digestive Health



The digestive health program at UK HealthCare is the largest in Kentucky. It has seen significant growth since the first strategic plan in 2004, which highlighted the importance of this service line to the state. UK Digestive Diseases & Nutrition, in collaboration with General Medicine, Acute Care General Surgery, Surgical Oncology, Minimally Invasive Surgery, Colorectal Surgery, Liver Transplant and Thoracic (esophageal) Surgery, provides the most advanced diagnosis and treatment available to patients with acute and chronic diseases affecting the digestive system.

Digestive Diseases & Nutrition plays a pivotal role at UK HealthCare given the large percentage of inpatients who have a gastrointestinal (GI) diagnosis as the primary reason for admission and/or as a simultaneously existing condition. Most of these patients are admitted on an emergency basis or are transferred from another hospital and require a consult or GI procedure. Patients must have timely access to these services to ensure that their hospital care is timely and efficient. In addition, this service is critical because it supports the growth of related cancer and transplant subspecialty programs at UK HealthCare.

Regionally and nationally recognized faculty members conduct many clinical and basic science research projects to further our understanding of gastrointestinal and liver diseases and to help design better treatment for patients with these illnesses.

Advanced Subspecialty Programs

Advanced Endoscopy

- Endoscopic Ultrasound (EUS)
 - Diagnostic: FNA
 - Interventional: FNI, CPB, CPN, antitumor agents
- Endoscopic Retrograde Cholangiopancreatogram (ERCP)
 - Biliary and pancreatic duct stenting
 - Complex (Level III) stones
 - Biliary manometry
- Achalasia: pneumatic dilation
- Endoscopic mucosal resection (EMR) and radiofrequency ablation (RFA) for GI early tumors
- Luminal stenting (esophagus, duodenum, colon)
- Deep small bowel enteroscopy
- Feeding access: PEG, PEJ, PEG-J

Inflammatory Bowel Disease

- Specialize in refractory disease
- Transition into adulthood
- Chromoendoscopy
- Colitis-induced dysplasia
- Complex inflammatory bowel disease
- Cutting-edge biologics

Minimally Invasive Surgery

- MIS Reflux Surgery

Hepatology

- Autoimmune liver disease
- Cholestatic liver disease
- Liver transplantation
- Nonalcoholic fatty liver disease
- Hepatitis C (HCV)
- Hepatitis B (HBV)

Thoracic Surgery

- Barrett's esophagus
- Esophageal reflux
- Esophageal cancer
- Foregut surgery

Colorectal Surgery

- Transanal endoscopic microsurgery
- Laparoscopic colorectal surgery
- Rectal prolapse
- Sacral nerve stimulation for fecal incontinence
- Colorectal cancer
- Rectal cancer

Surgical Oncology

- Pancreas
- Hepatobiliary
- Foregut surgery

Key strengths and accomplishments

- ▶ Increased ambulatory access by expanding clinic space and adding more advanced practice providers.
- ▶ Completed inpatient-to-outpatient transitions for liver patient care improvement project.
- ▶ Expanded hepatitis C and hepatitis B clinic for medical therapy supported by UK Pharmacy Services.
- ▶ Created Endoscopy Leadership Team.
- ▶ Completed endoscopy process improvement efforts aimed at improving access, patient experience and referring-provider satisfaction.
- ▶ Created inpatient teams including General GI, Liver/Transplant and Interventional.
- ▶ Helped initiate planning for new endoscopy space that will support strategic needs of Digestive Health and any programs requiring its services.



Strategic Aspiration

Be at the **forefront** of delivering **collaborative, patient-centered** and **research-driven** digestive health care, serving the **comprehensive** needs of our UK and local community and the **advanced** needs of our region.

Build Leading Programs

- ▶ Develop an integrated digestive health service line that effectively manages patients across all gastroenterological disease states.
- ▶ Develop multidisciplinary care models that improve the delivery and coordination of care for patients with complex disease states:
 - Hepatology
 - Colorectal Cancer
 - Inflammatory Bowel Disease (IBD)
 - Pancreatobiliary
 - Esophageal Disease
- ▶ Strengthen the GI consult/admit service to better support the inpatient population.
- ▶ Invest strategically in the latest clinical care technologies and treatment capabilities for focus disease areas.
- ▶ Enhance understanding of drivers/causes of digestive disease states in the Kentucky population served.
- ▶ Enhance therapies and diagnostics of target diseases by increasing the emphasis on translational research, leveraged to provide better patient care and education.
- ▶ Drive exposure to national and regional audiences by creating a multicenter working group that addresses the diagnostic and multidisciplinary approaches to the delivery of care for these disease states.

Provide Comprehensive Services

- ▶ Enable a seamless patient experience by delivering information that is timely, useable, accurate and sensitive to the cultural diversity of the patient population.
- ▶ Improve access, patient experience and coordinated patient care (transitions).
- ▶ Deliver the appropriate care in the appropriate location.

Formalize Relationships with External Partners

- ▶ Develop a robust referral network for complex and high-acuity care.
- ▶ Provide a seamless flow of patients through the referral network and improve the ease of access for requested inpatient, ambulatory and/or ancillary services.
- ▶ Bolster community resources and enable partners to retain appropriate digestive health services.



A large percentage of inpatients at UK HealthCare are admitted because of primary or secondary gastrointestinal issues.

Kentucky Children's Hospital



Kentucky Children's Hospital (KCH) is the only children's hospital serving central and eastern Kentucky with a Level IV neonatal intensive care unit, a pediatric intensive care unit, a pediatric and neonatal transport team and more than 30 advanced pediatric subspecialty programs. Its mission is to improve the lives and health of Kentucky's children through patient care, education and research. Its goal is to become the regional, tertiary center of choice for Kentucky's children by providing high-quality, family-centered care.

A number of trends will affect patient care at KCH. For one, there are fewer uninsured and privately insured children, as more are being covered by Medicaid, a change that is driving demand for value-based care. Because of better disease management, a focus on prevention and a shift to observation status, there may be fewer pediatric inpatients in the future. A limited supply of pediatric subspecialists means that virtual health care will be even more important for improving access to care.

Advanced Subspecialty Programs

- Perinatal Cardiology
- Pediatric Oncology Stage I Clinical Trials
- Genetics/Metabolic
- Pediatric Infectious Disease
- Level I Pediatric Trauma Center
- Extracorporeal Membrane Oxygenation (ECMO)
- Pediatric Orthopaedics
- Pediatric Urology
- Oncofertility
- Pediatric Interventional Cardiology
- Pediatric Plastic Surgery
- Pediatric Rheumatology
- Pediatric Endocrinology
- Pediatric Gastroenterology
- Pediatric Pulmonology
- Pediatric Nephrology
- Pediatric Palliative Care

Key Strengths and Accomplishments

- ▶ The Makenna David Pediatric Emergency Center, verified as the region's only pediatric Level 1 trauma center by the American College of Surgeons Committee on Trauma.
- ▶ Strong and ongoing community philanthropic support.
- ▶ Innovative pediatric heart program in partnership with Cincinnati Children's Hospital Medical Center, No. 3 in U.S. News & World Report's 2015-16 Best Children's Hospitals ranking.
- ▶ Care for children with neurological or cardiac disorders provided by UK pediatric specialists who visit outreach clinics in Appalachian counties that are held in conjunction with the Commission for Children with Special Health Care Needs.
- ▶ Focus on quality and family-centered care.
- ▶ Works to prevent childhood injuries through involvement in Safe Kids Worldwide™.



Kentucky Children's Hospital is the only children's hospital serving central and eastern Kentucky with such specialized facilities as a Level IV neonatal intensive care unit and a pediatric Level I trauma center.



Strategic Aspiration

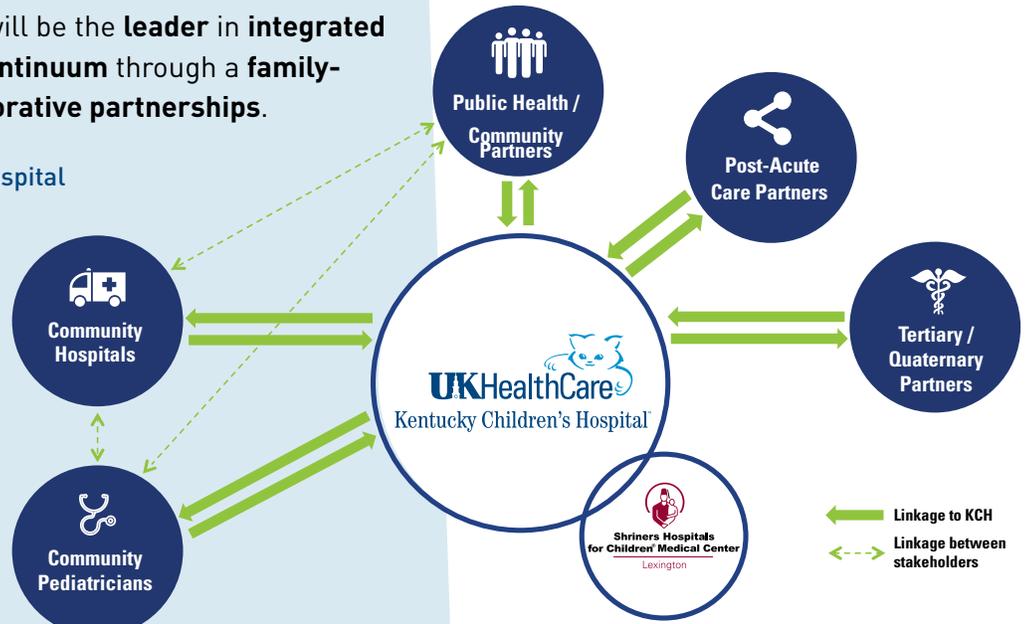
Kentucky Children’s Hospital will be the **leader** in **integrated** care for **children** across the **continuum** through a **family-centered** approach and **collaborative partnerships**.

Transform Kentucky Children’s Hospital into Kentucky’s Hub for Children

- ▶ Become Kentucky’s hub for children by serving as the facility of choice for community physicians and regional providers who seek subspecialty care for their patients.
- ▶ Bolster KCH core services to provide required levels of coverage by augmenting acute and support services and providing improved access to pediatric subspecialty care.
- ▶ Create a multidisciplinary approach for complex, chronic patients.
- ▶ Enhance and formalize partnerships with tertiary and quaternary partners.
- ▶ Work with community pediatricians to coordinate care and manage patients locally when appropriate.
- ▶ Work with community hospitals to manage children’s health locally, when appropriate, and transport to KCH as required.
- ▶ Partner with public health and community organizations in the region to improve children’s health.
- ▶ Formalize relationships with post-acute partners.
- ▶ Create a marketing and communications campaign.
- ▶ Develop signature research programs that reinforce KCH’s position as the region’s leader in children’s care.

Create a Family-Centered Culture that Emphasizes the Child as a Specialty

- ▶ Create an integrated pediatric operating model.
- ▶ Create an easily navigable and family-centered experience.
- ▶ Establish guidelines across all support and ancillary services for children’s care.
- ▶ Strengthen young patients’ transition to adult providers through an integrated approach.



Kentucky Children’s Hospital’s Role as a Hub

- Serve as the primary coordinator and call center for pediatric care in the region.
- Facilitate rapid access for children to the right provider at the right location.
- Manage the coordination of patients between UK HealthCare, community providers and tertiary/quaternary partners.
- Engage community partners and public health agencies to improve the overall health of children and experience of families.

High-Risk Obstetrics, Maternal-Fetal Medicine, Neonatal Intensive Care



This service line works to reduce maternal and infant mortality and morbidities in the region through a comprehensive program of collaborative research, state-of-the-art treatments, development of novel treatments, and education and community engagement with a focus on the underserved population of the Appalachian region. To do so, we:

- ▶ Optimize clinical and administrative structure to strengthen clinical care and research.
- ▶ Provide superior access to the highest quality of care.
- ▶ Promote the UK Birthing Center and Kentucky Children's Hospital Level IV Neonatal Intensive Care Unit as the premier health care provider in the region.
- ▶ Continue to strengthen alliances, develop new alliances and establish referral pathways.
- ▶ Develop branding and marketing.
- ▶ Strengthen and maintain financial performance.
- ▶ Enhance our family-focused service line.

Advanced Services and Programs of Excellence

- Prenatal Diagnosis and Genetics Program
- Comprehensive High-Risk Pregnancy Care
- Maternal Transport Service and Referrals (24 hours daily)
- PATHways Program and Neonatal Abstinence Program
- Preterm Birth/Tiny Baby Service
- Infant Apnea Program
- Neonatal ECMO
- Neonatal Neurodevelopment
- Infant Nutrition/Feeding Program
- Bronchopulmonary Dysplasia (BPD)/Chronic Care
- Maternal/Infant Transports and Outreach Education
- Small Baby Program
- Neonatal Kidney Injury Program

Key Strengths and Accomplishments

- ▶ Received an EMPOWER grant to develop centering pregnancy program, a group health care model that combines appointments with a doctor and meetings with groups of peers to promote patient engagement, personal empowerment and community building.
- ▶ Involved in PATHways Program to deal with substance abuse during pregnancy and neonatal abstinence syndrome.
- ▶ Created the Blue Angels Program in partnership with area health systems to reach high-risk expectant mothers in rural areas who would not have access to high-risk obstetric care. Details of the program are in the Partnerships chapter.



**Baby-Friendly
USA®**

- ▶ Designated as a Baby-Friendly birth facility by Baby-Friendly USA Inc., part of the Baby-Friendly Hospital Initiative. The initiative recognizes centers that give breastfeeding mothers the information, confidence and skills they need to breastfeed their babies.
- ▶ Educating needed subspecialists via maternal-fetal medicine and neonatal fellowships.
- ▶ Operating comprehensive neonatal transport services.
- ▶ Leading NIH research designed to prevent intraventricular hemorrhage in the neonate.



Strategic Aspiration

To be Kentucky's **leader** in maternal and infant health by delivering the highest quality **family-centered** care and to be nationally recognized in **research, innovation** and **education**.

Create a Maternal and Infant Network Throughout the Secondary and Tertiary Markets

- ▶ Formalize partnerships with affiliates to elevate levels of care and improve community retention of low-risk mothers and infants.
- ▶ Transfer knowledge to community division and affiliate hospitals.
- ▶ Strengthen provider education offerings.
- ▶ Leverage the network so that it influences statewide policies and elevates standards of care.
- ▶ Develop partnerships to fund niche obstetric/neonatal services needed in Kentucky and the region, including family planning, reproductive endocrinology, and infertility and oncofertility.

Create a Maternal and Neonatal Center of Excellence

- ▶ Develop an integrated service line operating model to manage patients across the care continuum.
- ▶ Create signature programs for neonatal abstinence syndrome, premature birth and perinatal brain injuries that integrate clinical services, research and education.
- ▶ Expand UK HealthCare's role with general obstetrics and nursery/Level II neonatal services in the local market.
- ▶ Create a family-centered culture that improves patient and family experience across the continuum and creates care partnerships with families.
- ▶ Enhance patient and family education across Kentucky.
- ▶ Advance antepartum, post-partum and post-delivery support options to improve outcomes for mother and baby.
- ▶ Develop innovative models of care.
- ▶ Lead in outcomes against Vermont Oxford Network (VON) benchmarks and other quality and safety standards.
- ▶ Maintain and enhance Baby-Friendly designation.
- ▶ Improve translation of research to clinical operations.
- ▶ Use technology to improve long-term outcomes.
- ▶ Create a better avenue for getting therapies to high-risk infants and mothers.



Approximately 40 percent of birthing mothers at UK HealthCare are considered high risk; 20 percent of their infants are low birth weight and are admitted to the Neonatal Intensive Care Unit.

Kentucky Neuroscience Institute



The Kentucky Neuroscience Institute (KNI) advances neurological health through patient care, education, research/innovation and service.

To achieve this goal, KNI:

- ▶ Offers exemplary patient care.
- ▶ Advances knowledge through research and innovation.
- ▶ Provides education through professional training and public programs.
- ▶ Furnishes clinical, scientific and programmatic expertise to enhance the neurological health of the citizens of Kentucky and beyond.

Advanced Subspecialty Programs or Certifications

- Comprehensive Stroke Center (certified by The Joint Commission)
- Level IV Comprehensive Epilepsy Program and Monitoring Unit
- Movement Disorders and Deep Brain Stimulation Program
- Sanders Brown Center on Aging
- Spinal Cord and Brain Injury Research Center
- Gamma Knife radiosurgery
- Child Neurology
- Neuro-oncology (adult and child)
- ALS (Lou Gehrig's disease) Center
- Botulinum treatment
- Headache and pain clinic
- Memory and aging program
- Multidisciplinary concussion program
- Neuromuscular disease
- Neuropsychology
- Neurorehabilitation
- Neurosurgery
- Traumatic Brain Injury
- Neuro-ophthalmology
- Neurodiagnostics

KNI's objectives are to:

- ▶ Provide the highest level and quality of neurological care to our patients.
- ▶ Foster new discoveries leading to improved neurological care.
- ▶ Augment neurological care capacities and services for communities.
- ▶ Inform policy debate, disseminate health information and increase awareness of neurological disease.

Key Strengths and Accomplishments

- ▶ Robust clinical, financial and operational performance.
- ▶ Support of the rapidly expanding UK HealthCare/Norton Healthcare Stroke Care Network of affiliate hospitals, which provides access to care and educational services based on community needs.
- ▶ State-of-the-art facilities to handle complex neuroscience cases, including a 64-bed neuroscience patient care floor, hybrid operating room and Kentucky Neuroscience Institute clinic.
- ▶ American Heart Association/American Stroke Association's Get With The Guidelines®-Stroke Gold Plus Quality Achievement and Target Stroke Honor Roll elite awards. The awards recognize the program's commitment and success in implementing excellent care for stroke patients. Evidence-based guidelines are used to evaluate programs.

Strategic Aspiration

To be a national leader in delivering **high value, comprehensive, patient-centered** neuroscience care through multidisciplinary **collaboration, research/innovation, education** and **service**.

Develop Signature Programs

- ▶ Through strategic investment, grow signature programs including stroke, epilepsy, spine, neuro-oncology, movement disorders and neurotrauma, into robust focus areas.
- ▶ Expand stroke network model and extend to other diseases.

Deliver Comprehensive Neuroscience Services Across the Continuum

- ▶ Transform KNI into a unified service line with a disease-focused, multidisciplinary approach.
- ▶ Bolster general neurology services to serve as the initial access point to neuroscience subspecialty services.
- ▶ Provide timely access to the appropriate level of care.
- ▶ Create a seamless patient experience across the continuum.
- ▶ Reduce variation through a continued focus on patient outcomes.
- ▶ Develop continuous improvement programs based on concurrent quality data.

- ▶ Enhance relationships with community neurologists and primary care physicians.
- ▶ Enhance the role of APPs to better support patient access, delivery of care and growth.
- ▶ Improve translational research across all diseases, with an emphasis on supporting KNI-signature programs.
- ▶ Improve patient education programs.

Advance Higher Standards of Neuroscience Care Across Kentucky

- ▶ Elevate levels of neuroscience care by educating providers across the state and nation.
- ▶ Expand discovery beyond the UK HealthCare campus.
- ▶ Develop new models to continuously improve delivery of care.
- ▶ Invest in discovery and educational tools and methods.
- ▶ Promote leading neuroscience care and research among trainees.
- ▶ Create a faculty development model.

Norton Healthcare / UK HealthCare Stroke Care Network

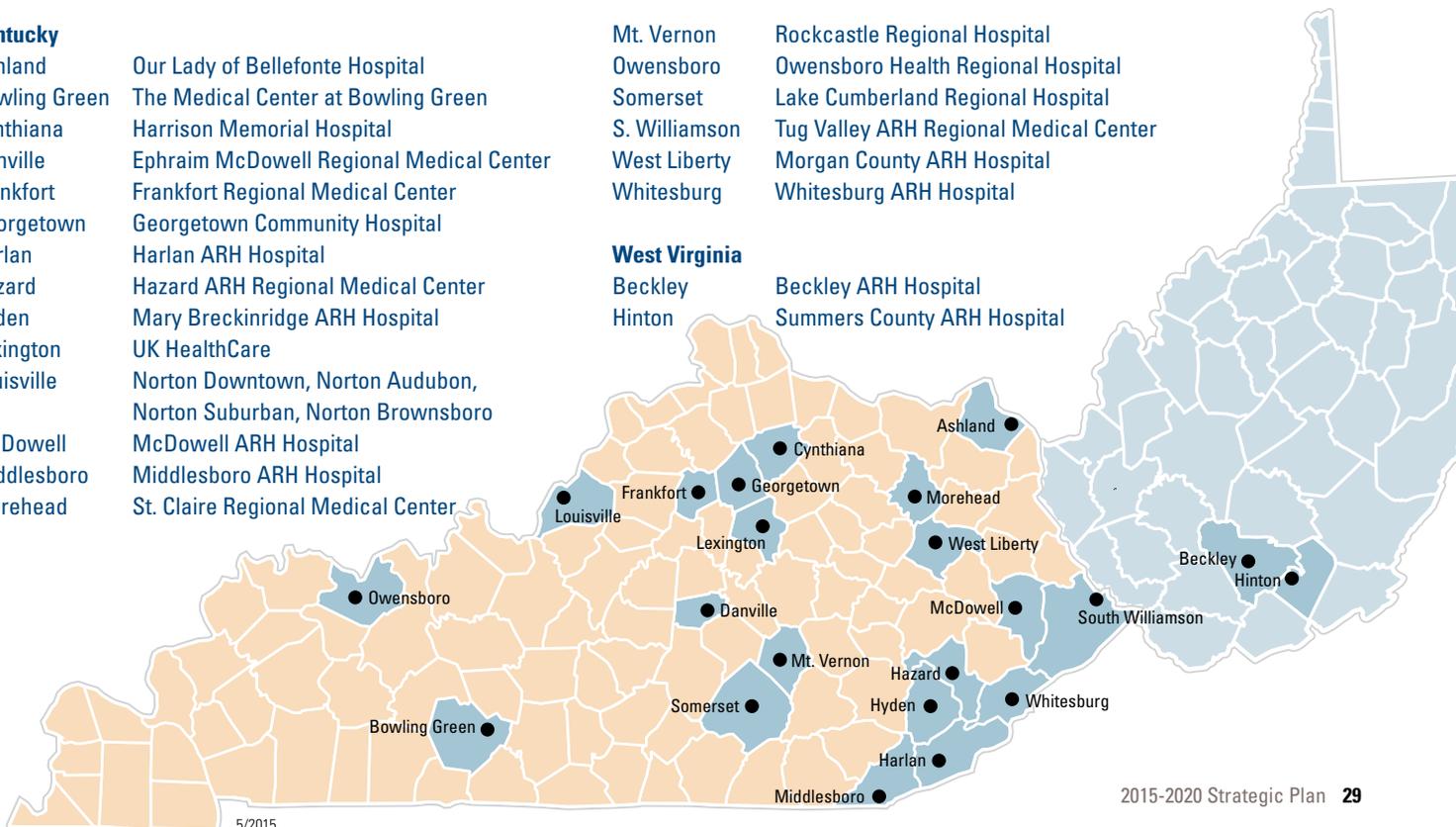
Kentucky

Ashland	Our Lady of Bellefonte Hospital
Bowling Green	The Medical Center at Bowling Green
Cynthiana	Harrison Memorial Hospital
Danville	Ephraim McDowell Regional Medical Center
Frankfort	Frankfort Regional Medical Center
Georgetown	Georgetown Community Hospital
Harlan	Harlan ARH Hospital
Hazard	Hazard ARH Regional Medical Center
Hyden	Mary Breckinridge ARH Hospital
Lexington	UK HealthCare
Louisville	Norton Downtown, Norton Audubon, Norton Suburban, Norton Brownsboro
McDowell	McDowell ARH Hospital
Middlesboro	Middlesboro ARH Hospital
Morehead	St. Claire Regional Medical Center

Mt. Vernon	Rockcastle Regional Hospital
Owensboro	Owensboro Health Regional Hospital
Somerset	Lake Cumberland Regional Hospital
S. Williamson	Tug Valley ARH Regional Medical Center
West Liberty	Morgan County ARH Hospital
Whitesburg	Whitesburg ARH Hospital

West Virginia

Beckley	Beckley ARH Hospital
Hinton	Summers County ARH Hospital



Musculoskeletal



UK Orthopaedic Surgery & Sports Medicine has become world-renowned for the state-of-the-art techniques it has developed and implemented to diagnose and treat musculoskeletal diseases and injuries.

Comprehensive specialty care includes Foot and Ankle, General Orthopaedics, Hand and Upper Extremity, Joint Reconstruction, Orthopaedic Oncology, Pediatric Orthopaedics, Spine, Sports Medicine and Trauma. This comprehensive program allows UK HealthCare to provide exceptional care to patients and the education and experiences necessary to graduate outstanding orthopaedic residents and sports medicine and trauma fellows.

Long a leader in joint replacement and spinal care, UK HealthCare provides the most advanced surgical and nonsurgical treatment options and collaborates closely with services including Interventional Pain, Physical Medicine and Rehabilitation, and Physical and Occupational Therapy to restore patients' health and functional abilities. Having UK Good Samaritan Hospital as a base of operations allows the service line to handle high volumes of patients while providing safe care.

In the next five to 10 years, a population that is increasingly obese and aging will continue to drive the need for joint replacement. The volume of joint replacements will also be affected by patients who have had joint replacement but because of various issues, must have revision surgery. UK HealthCare maintains a significant market share of those revision surgeries. Technical advances will allow for earlier intervention, shorter inpatient stays and migration to the outpatient setting.

Payors will increase their scrutiny of the appropriateness of procedures to restrain growth in volume. Programs such as Comprehensive Care for Joint Replacement, a CMS-bundled payment program, will provide the urgency needed to prepare for value-based care and to affect quality throughout care. The ability to measure quality will be integral in defining value and will be a priority for joint programs moving forward.

Advanced Subspecialty Programs

- Orthopaedic Trauma
- Pediatric Orthopaedics
- Cartilage Center
- Joint Replacement & Revisions
- Hip Preservation
- Orthopaedic Oncology
- Spinal Deformities

Key Strengths and Accomplishments

- ▶ Relocated UK Sports Medicine and UK Sports Rehabilitation to UK HealthCare at Turfhand.
- ▶ Implemented Ambulatory Electronic Health Record (AEHR) across all orthopaedic clinics.
- ▶ Implemented changes to clinic workflow to maximize patient's progress through medical care.
- ▶ Affiliated with UK Athletics for sports and outreach programs.
- ▶ Created Sports Athletic Training program.
- ▶ Facilitated appropriate triage to surgeons by sports medicine/family medicine providers.
- ▶ Implemented morning and evening huddles for the UK Good Samaritan Hospital Total Joint Replacement program to discuss plan of care and prioritize patients to be discharged.
- ▶ Low infection rate in joint replacement program.



Strategic Aspiration

To lead in orthopedic excellence by providing **patient-centered care** through **innovation** and **cutting-edge technology**.

Provide the Most Advanced Surgical and Nonsurgical Treatment Options

- ▶ Invest in and grow the signature services that will continue to define UK HealthCare. This includes prioritizing faculty recruitment and implementing new technology and infrastructure to enhance the patient experience.
 - Joint Replacement
 - Hip Preservation
 - Orthopedic Oncology
 - Spine
 - Reconstruction of Deformities
- ▶ Develop a UK brand standard with recognized program excellence that uses data and outcomes to drive continuous clinical improvement.
- ▶ Consolidate physical locations of some or all orthopedic specialties in the ambulatory setting. This will enhance intradepartmental collaboration and improve efficiencies related to the multidisciplinary services that are required for an ideal patient experience regardless of medical or surgical approach.

Develop a Musculoskeletal (MSK) Service Line Recognized for Excellence

- ▶ Build and nurture a culture of service excellence for the MSK service line.
- ▶ Create a patient-centered, easily accessible and navigable patient experience across the continuum.
- ▶ Improve the environment to ideally support a “Center of Excellence” experience.
- ▶ Enhance patient satisfaction by providing education that will set the expectations of patients and families.

Develop Innovative Models of Care that Enhance the Ability to Experiment with Value-Based Care

- ▶ Identify and develop innovative models of care that drive efficiency and eliminate waste.
- ▶ Create an environment that nurtures innovation and the use of leading-edge technology as it promotes cost efficiency and improved outcomes.

Develop and Strengthen Relationships with Primary Care Physicians and Other Providers

- ▶ Formalize mechanisms to identify and develop new potential referring providers and strengthen existing relationships.
- ▶ Strengthen relationships with post-acute care resources.



UK Sports Medicine and UK Sports Rehabilitation moved into new, convenient quarters at UK HealthCare at Turfland in 2015.

Trauma / Acute Care General Surgery



The UK HealthCare Trauma Program is an American College of Surgeons accredited adult and pediatric Level I trauma center and one of only two Level I centers serving Kentuckians. As the only center providing tertiary trauma care for central and eastern Kentucky, the UK Level I Trauma Center serves a population of 1.4 million across 20,000 square miles. It is the regional referral center for the 49 Appalachian counties of eastern Kentucky and the 11 counties surrounding Lexington.

Trauma is the No. 1 killer of those ages one to 44, with teenagers being the highest risk group. In order to prevent these deaths, the UK HealthCare program educates those in the communities it serves to prevent traumatic injuries.

Key Strengths and Accomplishments

- ▶ In 2010 opened three major-trauma bays in the UK Chandler Emergency Department to care for up to eight patients with state-of-the-art monitoring and life-support systems adjacent to CT technology and general radiology rooms.
- ▶ In 2011 opened new floor for trauma patients at Chandler Hospital with state-of-the-art intensive, progressive and acute care rooms – all large, private rooms.
- ▶ Offered advanced trauma education, including Advanced Trauma Life Support, Rural Trauma Team Development Course, monthly prehospital lectures and additional trauma education as requested in the communities served.
- ▶ Helped lead the development of a statewide trauma system.
- ▶ Assisted community providers in attaining trauma certifications so that patients will have quicker access to trauma care closer to home.
- ▶ Combined the multiple specialties involved in the trauma program into a single service line.

Advanced Subspecialty Programs

- Acute care surgery
- Gastrointestinal endoscopy
- General surgery
- Laparoscopic surgery
- Nutrition
- Surgical critical care
- Trauma surgery

One of only two Level 1 trauma centers serving Kentuckians, UKHC's trauma center serves 1.4 million people across 20,000 square miles.





Strategic Aspiration

To **lead** in trauma services through the **collaborative** delivery of **timely, high-value, patient-centered** care with a continued commitment to the **education** of our community.

Improve Transitions of Care Across the Continuum

- ▶ Educate community emergency departments regarding the transfer of patients to UK HealthCare.
- ▶ Create a benchmarked communication mechanism with referring providers and primary care physicians.
- ▶ Improve transitions to outpatient care/rehabilitation.

Optimize In-House Coordination of Care

- ▶ Develop an inpatient care model that integrates resources to collectively manage all trauma patients (general, neuro and orthopedic).
- ▶ Add an inpatient transitional nurse specifically for orthopedic trauma.
- ▶ Develop benchmarks and processes specifically focused on reducing length of stay.

Enhance the Patient and Family Experience

- ▶ Educate patient and family before they leave the hospital.
- ▶ Create an environment of continual patient communication.
- ▶ Coordinate with the enterprisewide initiative to improve patient experience across the continuum.

Grow Acute Care Surgery and Ortho Fracture Surgery

- ▶ Identify opportunities to solidify referral patterns around emergency surgery.
- ▶ Enhance the visibility of specialized providers, such as fracture surgeons, to grow patient volumes.
- ▶ Add clinic space and additional facilities.
- ▶ Increase activities of physician liaisons to enhance community relationships.

Hospitals in the Kentucky Trauma System

(as of November 5, 2015)

Verified Trauma Centers

Level I

Pediatric

Lexington	Kentucky Children’s Hospital
Louisville	Kosair Children’s Hospital

Adult

Lexington	UK Chandler Hospital
Louisville	University of Louisville Hospital

Level II

Pikeville	Pikeville Medical Center
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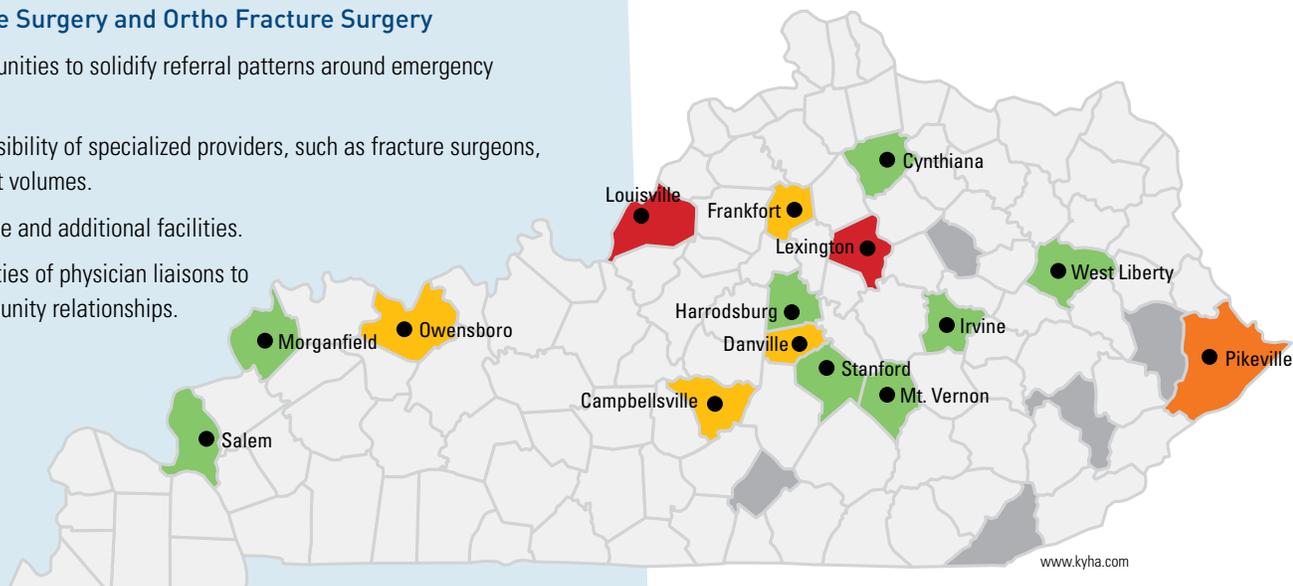
Level III

Campbellsville	Taylor Regional Hospital
Danville	Ephraim McDowell Regional Medical Center
Frankfort	Frankfort Regional Medical Center
Owensboro	Owensboro Health Regional Hospital

Level IV

Cynthiana	Harrison Memorial Hospital
Harrodsburg	James B. Haggin Memorial Hospital
Irvine	Marcum & Wallace Memorial Hospital
Morganfield	Methodist Hospital Union County
Mt. Vernon	Rockcastle Regional Hospital
Salem	Livingston Hospital and Healthcare Services
Stanford	Ephraim McDowell Fort Logan Hospital
West Liberty	Morgan County ARH Hospital

- Level I Centers (Verified & Designated)
- Level II Centers (Verified & Designated)
- Level III Centers (Verified & Designated)
- Level IV Centers (Verified & Designated)
- Centers in development & submitting data



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Chapter II: Strengthen Partnership Networks

Collaborating and partnering with community providers will be key as UK HealthCare positions itself for a future in which patient care must be delivered seamlessly across the continuum, from prevention to post-acute care.

Through outreach, program collaboration, physician recruitment, training, education, and telemedicine and other virtual capabilities, UK HealthCare will strengthen its network of community providers to ensure patients receive care that is effective, efficient and appropriate. In addition to enabling more care to be provided close to patients' homes, these collaborative efforts between UK HealthCare and providers will improve the value of care patients receive, preserve providers' autonomy and result in improvements in scale and greater efficiencies across the continuum of care.





Working together benefits our patients in numerous ways. It enhances health care access close to home, strengthens local health care and builds a health system that better coordinates care across independent providers. By collaborating, we grow partnership opportunities, strengthen clinical programs and improve access.

Going forward, UKHC will further develop its clinical affiliate networks. This will connect independent community providers to UKHC's advanced subspecialty programs, providing coordinated complex care at the quaternary academic hub.

Clinical Collaboration

UKHC will strengthen Kentucky's community providers by helping them recruit physicians to their local communities, working on service-line-specific quality improvement projects, and providing them with technology that enables their patients to stay closer to home using virtual care platforms. As technologies evolve and consumer/provider demand increases, UKHC will pursue new telehealth care delivery models.

As UKHC works to develop deeper relationships with providers throughout the state, the expansion of our telemedicine programs to rural provider partners is a natural next step and a mission-driven reason to solidify relationships. UKHC and community providers are actively evaluating and implementing technology solutions to remotely provide clinical services including:

- ▶ Telemedicine
- ▶ Teleradiology
- ▶ Stroke Network
- ▶ Telemetry Monitoring
- ▶ Maternal Fetal Medicine Blue Angels Program



UK's obstetric community practices are another example of community care. These UKHC-owned ambulatory practices, staffed by UK faculty providers, provide care and deliver babies in local communities and hospitals. This model of care has brought stability and sustained care to communities that have typically had a difficult time recruiting physicians, such as Morehead, Georgetown and Hazard.



Photos courtesy of Lexington Herald-Leader.



Blue Angels Program

The Blue Angels Program is a good example of how technology and partnerships are being used to improve access in remote areas. The program, operated by UK Maternal Fetal Medicine (MFM) in partnership with area health systems, provides remote ultrasound services to high-risk expectant mothers in their community and reaches patients who would not normally have access to high-risk obstetric care. Currently ultrasounds are completed by UKHC technicians and then sent to a UKHC maternal fetal medicine physician for review.

This program could have a significant impact on infant mortality, which averaged 8.74 to 11.32 deaths per 1,000 live births from 2002 to 2011 in select rural Kentucky counties, a rate that is significantly higher than the U.S. average of 6.6 deaths per 1,000 live births.

Post-Acute & Primary Care



UK HealthCare (UKHC) will collaborate and partner with post-acute providers to ensure that care is provided effectively, efficiently and appropriately to optimize patient outcomes and experience.

Ideally, post-acute care allows patients to avoid costly readmissions to hospitals and return to their primary care physician for follow-up care. Post-acute care can help drive down length of hospital stays when appropriate care is available and patients transition to this level of care as quickly as their health status warrants.

A lack of sufficient access to post-acute care has become a priority issue in the local market, putting pressure on UKHC's inpatient capacity. Improved access to post-acute care would allow UKHC to accommodate additional patients without adding licensed bed capacity.

Escalating post-acute care (PAC) costs are receiving growing scrutiny. Hospitals, payors and PAC providers have begun to more actively manage post-acute care use to ensure that patients receive the appropriate level of care at the appropriate PAC site for the appropriate amount of time. Hospitals are beginning to take increasing responsibility through episode-based payments for the quality and cost of services after discharge. They are narrowing their PAC referral networks by prioritizing those that are of high-quality and low cost. Payors are investigating risk-based payment models and PAC providers are recognizing that in value-based systems, they must streamline transitions, prevent readmissions and downstream costs.

UKHC will strengthen its post-acute network to improve outcomes, reduce wait times for PAC and alleviate inpatient capacity constraints. It will create access to inpatient rehabilitation beds in conjunction with local and regional providers, improve discharge planning processes to improve outcomes and reduce costs, and develop an integrated post-acute care network across Kentucky.

Efforts underway include:

- ▶ Creation of a PAC Affiliation Network with 25 skilled nursing facilities. The network will share performance data, participate in Kentucky's Quality Improvement Organization and use Interact, a tool to improve communication upon patient readmission.
 - ▶ Improvement of transition to inpatient rehabilitation through collaboration with HealthSouth (Cardinal Hill).
 - ▶ Enhancement of UKHC's relationship with Hospice of the Bluegrass because of increased demand for hospice and palliative care.
 - ▶ Continuation of recently implemented Kentucky Appalachian Transition Services (KATS), which provides a six-week hospital-based care transition after initial hospital visit, including home visits for one month, telephonic support and home visits in the final two weeks.
- ▶ Working with critical access hospitals that have available swing bed capacity to improve transitions to skilled nursing facilities.
 - ▶ Partnering with residential recovery organizations that can treat both addiction and infectious diseases.



Other internal initiatives include a Complex Discharge Planning Multidisciplinary Team and Hospital Readmission Team and development of a comprehensive patient transition communication tool.



Primary Care Partnerships

UKHC will develop a primary care network to ensure a seamless experience across the care continuum and position the organization for value-based care and population health. As the health care system evolves, it will be critical for UKHC to have a primary care network in the Bluegrass region that effectively serves UKHC's populations and improves access to primary care for UK's HMO/PPO populations. The primary care footprint can be expanded by partnering with existing providers or by growing UKHC's existing practices.

Market forces dictate a change in the role of primary care at UKHC. Instead of existing mainly to train physicians and serve UK-HMO patients, primary care must assume a foundational role in providing cost-effective, integrated health care. A growing number of value-based reimbursement opportunities depend on effective primary care, and competition in narrow networks is expected to require strong primary care services.

Current Value-Based Initiatives Requiring Strong Primary Care Services

- ▶ Centers for Medicare & Medicaid Services (CMS) Physician Quality Reporting System (PQRS) Program
- ▶ Anthem Enhanced Personal Healthcare Program
- ▶ National Committee for Quality Assurance Patient-Centered Medical Home (PCMH) Designation
- ▶ Multipayor Transitional Care Management (TCM)
- ▶ CMS Primary Care Complex Chronic Care Management (CCCM)
- ▶ CMS hospital readmission penalties and CCCM

The increased demand for primary care services at UKHC is the result of a growing employee base that has UK-HMO/PPO access and the imperative for care management. Unmet post-acute care and transitional care management needs have been fueled by rapid growth of hospitalist services and Kentucky's Medicaid expansion. Complex chronic care management needs have intensified as well.

The triple aim of health care – to improve the care experience and population health and reduce the per capita costs of health care – will be kept top of mind as access to UKHC primary care is improved. Through a process of continuous improvement, the care experience for patients, families and referring providers will be enhanced. Alternative models of care will be considered, with staffing adjusted accordingly.



Chapter III: Value-Based Care and Payments

For UK HealthCare, increasing the value of patient care has been and will continue to be the imperative through 2020.

Increasing value requires a multifaceted approach. We will improve predictability in patient outcomes and cost of care by adopting evidence-based practices across all settings of care and building an organizationwide culture of improvement. New delivery models, which will enhance how care is provided to patients, will also be developed. For patients with multiple, complex chronic conditions, UK HealthCare will take a high-touch outpatient approach by creating a complex chronic care clinic to actively manage these patients' care and improve their health outcomes.

UK HealthCare's focus on providing value will prepare it for new risk-based payment models, either as a strategic choice or in reaction to evolving market conditions.



Value-Based Care



Value-based care at UK HealthCare (UKHC) means delivering an optimal quality of care while making wise choices in spending. Insurers are increasingly linking their reimbursement payments to value instead of payment based on volume of care delivered.

UK patients and other purchasers of health care measure value in terms of quality of care, the care experience, access to care and cost of care. To improve value, UKHC will provide the best evidence-based care, reduce variations in care and decrease unnecessary spending on care. By applying a value-based care approach across all settings of care, we intend to improve outcomes across the entire population of patients we serve.

A strong and dynamic, best-in-class quality management program, value-based care leadership, and an organizationwide culture of improvement and excellence in quality will orchestrate these changes. This leading quality program will provide the foundation for UKHC to become a leading quality organization, improving overall patient care and increasing the patient population that can be served.

$$\text{Value} = \frac{\text{Quality} + \text{Experience} + \text{Access}}{\text{Cost}}$$

Integral to this effort is the new Office for Value and Innovation in Healthcare Delivery (OVIHD) launched in March 2015 to provide value-based care across the UKHC system. OVIHD uses expertise from across our health care system to transform patient care by re-engineering coordination of care. Through OVIHD's measures, UK HealthCare is transforming its delivery system to optimize the coordination of its patients' care. By using process improvement, input and insight is gained from those on the frontlines of the UKHC enterprise. Nurses, physicians, pharmacists and other staff are at work on numerous projects with health system engineers to increase the value of the care delivered.

Another important component of OVIHD is the UK OptimalCare program. Using a rigorous approach to implement evidence-based care and reduce unnecessary variation, OptimalCare teams identify ideal clinical situations for delivering the highest value of care. These teams are supported by OVIHD and additional staff, including clinical quality specialists, finance business partners, informatics and supply chain experts.



The goals of the UK OptimalCare Support Group are to:

- ▶ Identify opportunities to improve value.
- ▶ Prioritize opportunities and allocation of resources.
- ▶ Engage and support OptimalCare teams to identify practice gaps and barriers.
- ▶ Facilitate implementation and measurement.
- ▶ Minimize inappropriate care and resource utilization through evidence-based practice.

Critical to this strategic imperative is the implementation of a value-based care technology infrastructure, which will provide connectivity, analytics and workflow tools. Seamlessly connecting provider and patients will enable improved outcomes and efficiencies. The traditional inpatient-focused quality improvement measures – length of stay, core measures and patient experience – must transition to value-based quality improvement measures that are increasingly real-time and patient-centric.

Our focus on delivering excellent and efficient care will prepare UK HealthCare for new payment models as the market dictates.



The Office for Value in Healthcare Delivery (OVIHD) is using expertise from across the UK HealthCare system to transform patient care by re-engineering coordination of care. Process improvement is used to include input and insight from those on the frontlines of the enterprise.

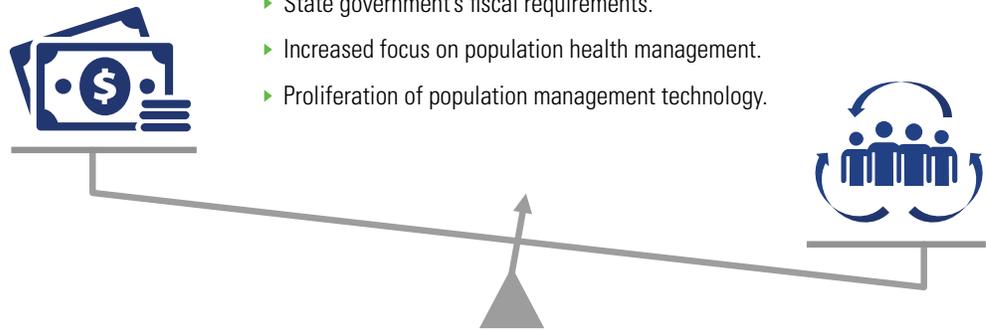
Value-Based Payment



Changes in the way health care is paid for will come as Kentucky and the nation shift away from the traditional fee-for-service model. Much of the discussion regarding new payment models is focused on performance-based payment.

A number of factors could tip the scales toward value-based payment. They include:

- ▶ Phasing-in of payment reform.
- ▶ Competition among providers.
- ▶ State government's fiscal requirements.
- ▶ Increased focus on population health management.
- ▶ Proliferation of population management technology.



As a leading provider of Kentuckians' health care, UK HealthCare can also be a factor in the shift to value-based payment. Regardless of when change comes, UK HealthCare can take a number of measures now to drive additional value in the current fee-for-service environment as it positions for future changes in the reimbursement model.



To prepare for these changes, UKHC will monitor payment reform in other states and adopt value-based payment models, either as a strategic choice or in reaction to evolving market conditions. UKHC will build quality, cost and contracting measurement, and negotiation capabilities while exploring payment model options.

As the health care payment approach shifts, providers will be able to pursue a variety of risk-based models based on their appetite for risk, investment and change. A range of payment models will offer varying risk.

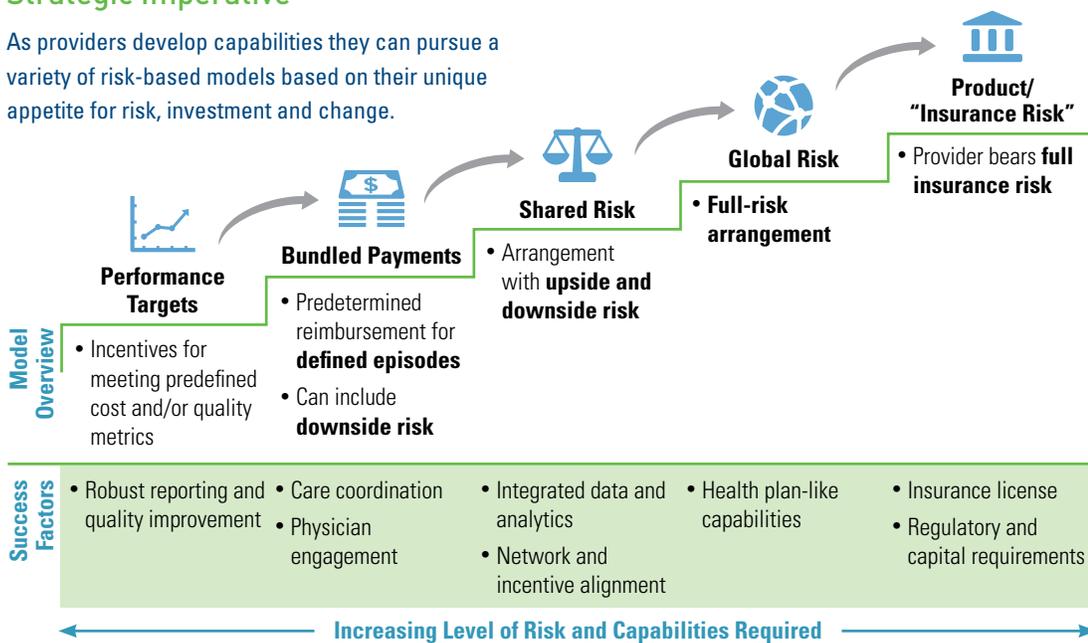
In its role as a progressive leader, UK HealthCare will pilot and develop several approaches to reimbursement. The initiatives to be undertaken include:

- ▶ Piloting bundled payments.
- ▶ Piloting risk-based contracts.
- ▶ Developing a high-complexity narrow network.
- ▶ Developing a direct-to-employer product.

Through these initiatives, UK HealthCare does not aim to accelerate the move toward value-based care and value-based payments but is instead preparing for the changes that lie ahead.

Value-Based Payment Models: Strategic Imperative

As providers develop capabilities they can pursue a variety of risk-based models based on their unique appetite for risk, investment and change.



Complex Chronic Patients



Patients with complex, chronic conditions account for a disproportionate share of health care spending. These patients typically have multiple providers – including a number of specialty care providers – and receive care in multiple settings, including primary care offices, outpatient clinics, hospitals and rehabilitation centers. Managing their multiple medications is one of the keys to providing care for their multiple acute and chronic conditions. Their care also often requires medical supplies and various therapeutic services. Finally, social factors or determinants that impact a patient’s compliance and engagement play a major role in health outcomes. These factors may include access to transportation, appropriate housing, health literacy and access to healthy foods.

Delivering the right care at the right time in the most cost-effective manner is a complex process. It requires the cooperation and engagement of patients. It also requires that patients be routed to the most appropriate site for their condition. And, there must be coordination of the many complex components of their care.

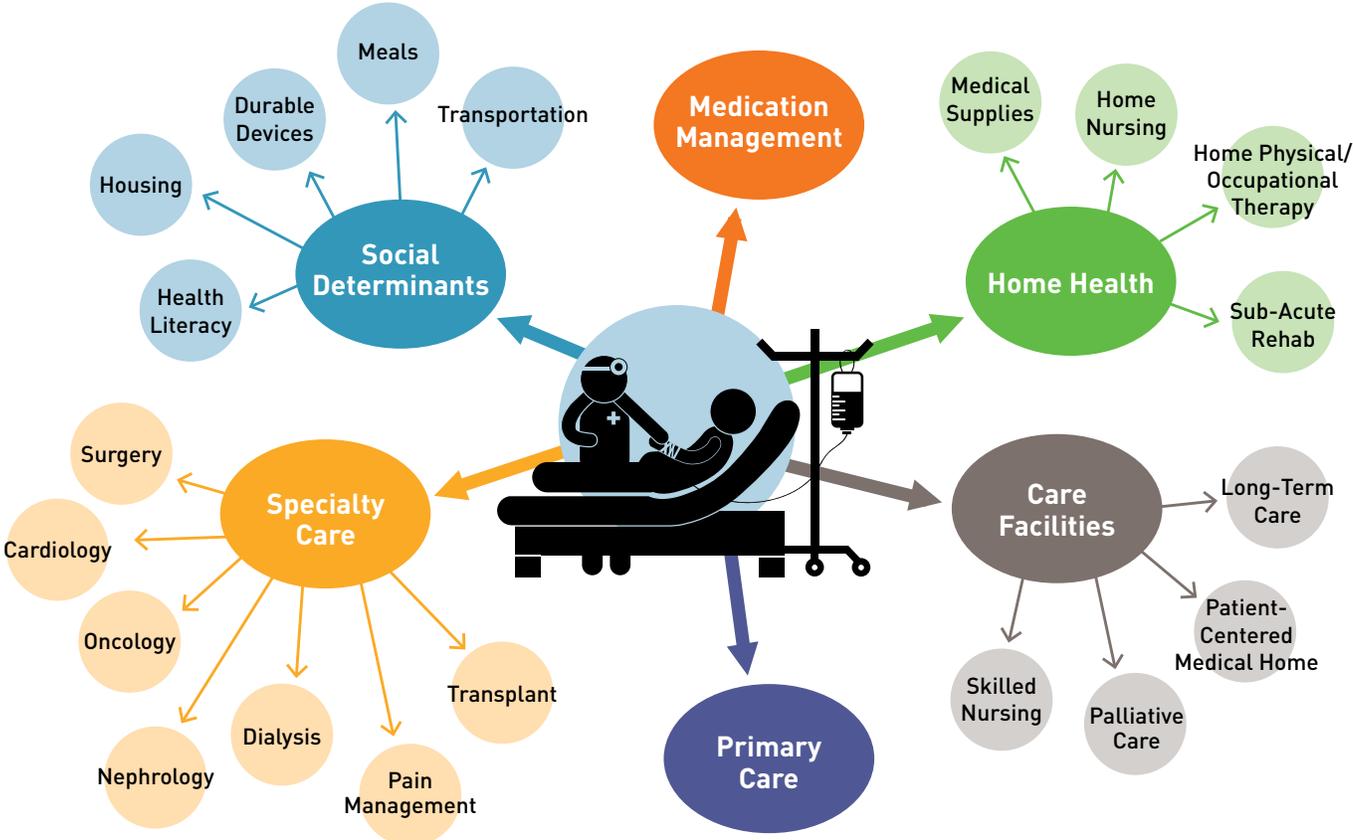
UK HealthCare (UKHC) has an opportunity to reduce costs and improve outcomes for patients who have chronic but manageable conditions and are frequent users of UKHC health services. UKHC can also assist community providers in their efforts to do the same.

With the emphasis on increasing the value of patient care, new delivery models are needed to enhance how patient care is provided. In light of this, UK HealthCare will improve the management of patients with multiple, complex chronic conditions by developing a high-touch outpatient approach. It will create a complex chronic care clinic to actively manage the care for these patients and improve their health outcomes.

Because so many medical and nonmedical issues affect patient health, UKHC providers will assess each patient’s situation and intervene as needed. They will supply health information to help educate patient and caregiver; ensure ready access to prescription medications; provide support for family caregivers; and ensure that basic needs, such as transportation, housing and nutrition, are being met. UK HealthCare will also make it easier for patients to access providers and health systems, particularly ambulatory access to specialty services. While UKHC has multiple initiatives in progress related to access, care coordination and care transitions are an additional focus and a priority.



The Patient with Complex, Chronic Medical Needs







Power of Academic Medicine

Any discussion of the future of health care must include academic medicine, where future doctors and medical breakthroughs are made.

UK HealthCare and the nation's other academic medical centers make up only 5 percent of all hospitals, yet these teaching hospitals have a mighty impact because of the three intertwined missions they serve – to educate the next generation of physicians, to conduct groundbreaking medical research and to provide the best in clinical care. Medical education and research have and will continue to make UK HealthCare a leader, as the College of Medicine trains physicians to effectively deliver the best in patient care and supports medical researchers and their discoveries, which lead to improved health care for all.





Clinical Research



The College of Medicine’s future research initiatives are aligned with and support the aspirations of the UK HealthCare strategic plan. These four strategies will advance our research efforts.

▶ **Investments in existing strengths and areas of growth**

Focus will be placed on research that improves Kentuckians’ lives by addressing the state’s most pervasive health problems, including cancer, heart disease and substance abuse.

▶ **Development and expansion of core research facilities**

Facilities equipped with leading-edge technologies are needed for integrated research in areas such as metabolomics, genomics, proteomics, bioinformatics, imaging and translational research.

▶ **Development of faculty and facilities**

With the understanding that research requires human and physical resources, a systematic process for recruiting faculty for research priority areas will be developed, current research space will be optimized through metrics, and a strategy will be developed to finance and build or remodel needed research space.

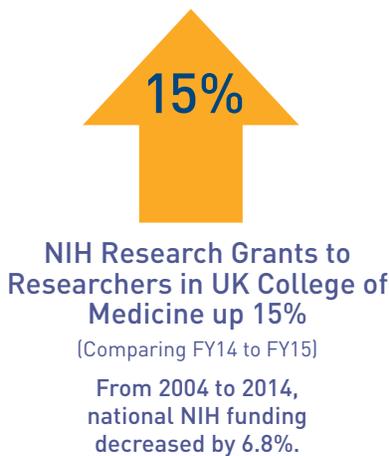
▶ **Strengthen engagement and translation of research**

If the state, the nation and the world are to benefit from the research done at UK, the results and impact of that research must be communicated and shared.

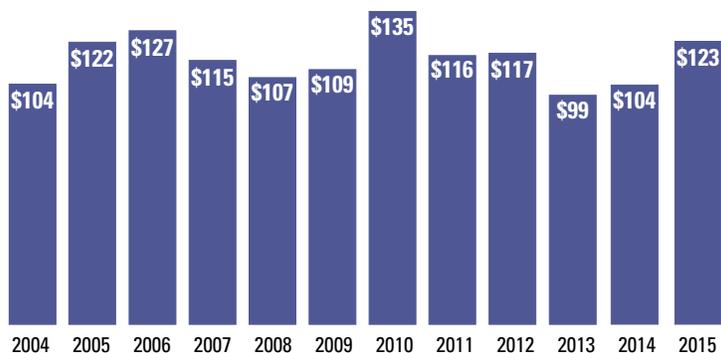
Funding: The Future of Research

As is the case for all U.S. medical schools, the majority of the College of Medicine’s research funds come from the National Institutes of Health (NIH), which invests just over half of its extramural budget in research at medical schools and teaching hospitals. NIH grants are awarded through an intensely competitive peer review process and only the most promising, quality research is funded.

Nationwide, NIH grant funding has declined by 6.8 percent in the last 10 years. UK HealthCare’s research funding has run counter to that trend in the past year, as NIH grant funding to researchers in the College of Medicine grew by nearly 15 percent from FY 2014 to FY 2015. Our goal is to achieve a \$25 million increase in NIH funding and to focus on intercollegiate and large integrative grants.



College of Medicine Grants and Contracts Awarded
(in millions, including indirects)





Emphasis on Collaboration

Collaboration is integral to research, and researchers at UK will continue to work with scientists, physicians and clinicians beyond their disciplines and beyond the campus' boundaries as they continue to look for new ways and opportunities to work on research with others.

For example, the Markey Cancer Center Research Network was launched in February 2015 to conduct high-priority cancer research through a network of collaborative centers that deliver cancer care and conduct research studies.

The network delivers on several of UK HealthCare's missions: to extend care to underserved areas of Kentucky; combat pervasive health issues; and collaborate with other health professionals. Because of the network, people throughout the state will have better access to leading clinical research studies on the treatment and epidemiology of cancer as well as to studies on the prevention and the early detection of the disease.

Another collaborative research effort is the Appalachian Translational Research Network, an effort of UK, Marshall University, Ohio State University, the University of Cincinnati and regional institutions that engages investigators in clinical and translational science; fosters collaborations, joint pilot studies and mentoring; and develops strong programs in community-based participatory research.

New Research Facility will Encourage Collaboration

Our medical research efforts will also be aided by the opening in 2018 of a \$265 million research facility that will be linked to the Biomedical Biological Sciences Research Building and the Biological-Pharmaceutical Building, creating a research hub on the university campus.



Research conducted in a \$265 million facility to open in 2018 on the UK campus will target Kentucky's most pervasive health issues.

This new building will allow and promote interdisciplinary cooperation among many areas including health care researchers (both basic and clinical), public health, behavioral sciences, agriculture outreach and extension, economics and engineering. As UK's Vice President for Research Lisa Cassis has pointed out, much of discovery "happens at the intersection of disciplines."

Most important, the research conducted in this new building

will be aimed at health issues that are endemic in Kentucky and are priorities in the College of Medicine's research.

It has been said that Kentucky will not advance without a nationally competitive research university, and we believe the University of Kentucky should be that institution. The future strategies of the College of Medicine's research arm will move the university toward that goal.

Medical Education



In the past decade, applicants to and enrollment in our medical school have grown. While the pool of in-state applications has increased marginally, the number of out-of-state applicants has exploded.

Just 10 years ago, in 2005, 1,000 students applied to the medical school, and 400 of them were from Kentucky. By contrast, of the 3,000 students who applied in 2015, just under 500 were Kentuckians.

Program enrollment also has increased 17 percent since 2011-12. Total medical school enrollment is projected to be 544 in 2016-17.

This growth is essential as Kentucky and the United States as a whole face a shortage of physicians. One need only read the projections of the Association of American Medical Colleges (AAMC) to understand how important the work of educating future physicians has become. The AAMC warns there will be a shortage of 45,000 primary care physicians and almost an equal number of surgeons and specialists by 2020. The shortage affects rural areas, like Kentucky's Appalachian region, the most.



Most Diverse Class in College's History

The 2015 class is the most diverse in the UK College of Medicine's history, and increasing diversity will continue to be a focus of recruitment efforts.

Multiple strategies have been adopted to attract more minority students. Those strategies include scholarships aimed at underrepresented minorities and an increase in those scholarship monies; attendance at conferences and involvement in organizations for minority students; a recruitment focus on colleges with large minority undergraduate populations; and faculty and minority student members on the College of Medicine admissions committee.

The College of Medicine's efforts to increase the diversity of its students have been successful. The class that entered in 2015 is the most diverse in the college's history.

Radical Change in Curriculum

In 2012, the medical school curriculum underwent a profound change. This measure, which integrates classical, basic science education and clinical education, adopts the multidisciplinary approach that is the future of medicine at UK HealthCare and beyond and is already showing spectacular results in terms of student scores on national boards and other measures.

In 2015, UK medical students had the highest Step 1 score on United States Medical Licensing Exam (USMLE) in the history of the College of Medicine and the highest pass rate on the USMLE since 1998.

College of Medicine programs

54 medical training programs

- ▶ 29 residency programs
- ▶ 25 fellowship programs

Three newly ACGME-accredited fellowships for 2014-15

- ▶ Neuroradiology
- ▶ Advanced Heart Failure / Transplant Cardiology
- ▶ Critical Care Medicine

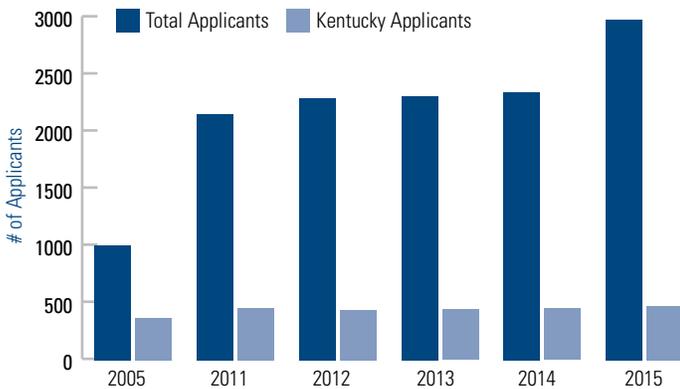


Students Opt to Stay at UK

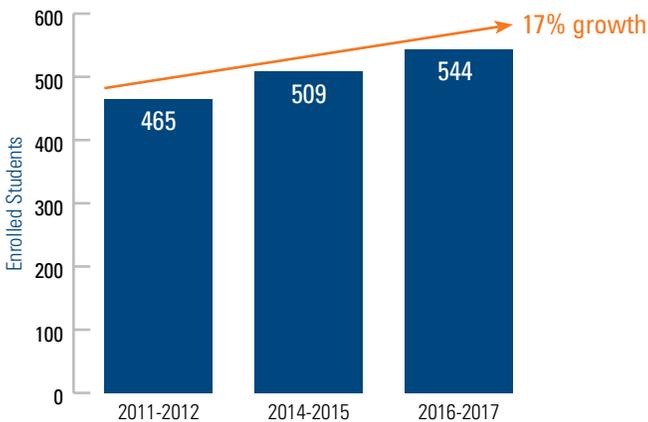
The college's 2015 medical graduates are doing residency training in some of the most prestigious medical programs in the country, among them Yale, Mount Sinai, Emory, Vanderbilt, UCLA, UCSF, Pittsburgh, Stanford, Virginia and North Carolina. Almost 40 percent have chosen residencies in primary care areas.

Nearly 30 percent of the 2015 class elected to stay at UK to do their residencies. Most of that increase in students staying at UK has come from out-of-state students who are opting to stay in increasing numbers. In 2011, 11 percent of out-of-state students elected to do their residencies at UK; in 2015, it was 32 percent.

MD Program Applicant Pool Increased National Interest



MD Program Total Enrollment 2011-2016



Through the Rural Physician Leadership Program, UK and partner St. Claire Medical Center in Morehead are helping ease the shortage of rural physicians.

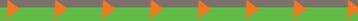


Rural Physician Leadership Program

UK HealthCare is helping ease the shortage of rural doctors through the College of Medicine's Rural Physician Leadership Program. Begun in 2009, it combines two years of medical study at UK with two years of study and clinical experience at St. Claire Regional Medical Center in Morehead. The program is designed to increase the number of physicians who understand community health and can provide high-quality health care and leadership to rural communities. There are 10 students in the 2015 class.



Chapter IV: Strategic Enablers



Five strategic enablers are essential to the successful implementation of the UK HealthCare strategic plan. The strategic enablers are a service line operating model, technology, strategy implementation, facility planning, and branding and marketing.



Each strategic enabler has a role in making the strategic plan a reality. The service line operating model will guide clinicians as they realign care to enhance our patient-centered and disease-focused approach. In terms of technology, integration will be the focus and the resulting standardized data will have many benefits, including better oversight of population health. New facilities will be built and existing ones adapted to ensure patients receive care in appropriate, state-of-the-art settings. Marketing and branding will leverage the UK HealthCare brand to ensure audiences understand its value and strengths.



Service Line Operating Model

A new operating model will guide UK HealthCare’s service lines as they further align care around the patient. Having a model will help UK HealthCare carefully manage change as clinicians work together in new and more collaborative ways.

Through this new operating model, the service lines will grow as they provide care that is more patient centered and disease driven within a unified platform that allows operations to remain consistent across facilities and partnerships. An integrated service line will effectively manage patients and integrate research and educational activities across the spectrum of health and disease.

The service line operating model refocuses care in a number of ways as illustrated below. Patient care will become multidisciplinary, orchestrated by a team that encompasses multiple specialties and many types of health care professionals. The care experience will focus on patients instead of providers and will shift from a primary focus on high-acuity care to care that focuses on disease and continues across the care continuum.

Shifting to care delivered through a team approach with a focus on patients and their disease will ultimately improve the care experience and patient outcomes.

Moving Toward a Service Line Approach to Care





Technology

As UK HealthCare becomes a more collaborative environment, significant investments will be made in technology to improve the ability to share information across the enterprise.

Our current technology is not unified, which presents challenges in sharing data. The goal is to create an integrated technological system, which will put all vital information in one place and give all health care professionals access to the same information.

Such unified systems have been shown to greatly improve patient care and outcomes by reducing errors, eliminating duplication in treatment and improving patient safety. The first step in the process will be to evaluate electronic health record vendors.

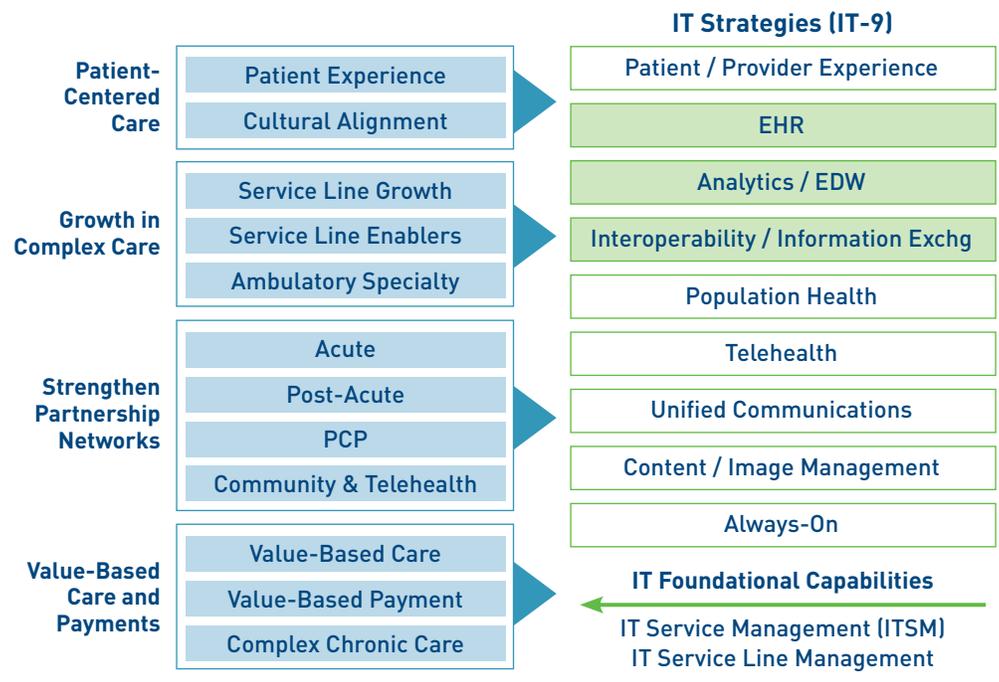
UK HealthCare will also create a data warehouse, a virtual repository for all information across the enterprise. This centralized storehouse of information will standardize data, allowing for indepth analysis of health issues. Patterns and trends in population health can be identified and strategies developed to address and manage them. This data warehouse will be secure, reliable and provide access to information that is easy to retrieve and manage.

As these systems are developed, the digital experience for our patients will also be improved. Our digital platforms are tools to educate and inform patients, but if these systems are not user friendly, patients will get frustrated and will not use them.

Through an improved technological system, UK HealthCare will develop better workflow management systems, incorporating protocols that are easy to use and lead to better care. Computer applications will also be created that help educate patients and improve communication between patients and their providers.



Strategy Links to Technology



Improved technology will also be a goal as we expand telehealth capabilities, which rely on many kinds of technology, from video conferencing and smartphones to email and wireless tools. Telehealth is a key component in broadening partnerships and networks with providers across the state and region.



Marketing

Over the last five years Marketing has laid the foundation for moving from a support area to a true tactical asset as the enterprise pursues its overall strategy.

Key Strengths and Accomplishments

- ▶ A community engagement program that maintains relationships with more than 200 local, regional, state and national nonprofit organizations dedicated to community health and well-being.
- ▶ A Cooperative Extension program that has provided branded health information free to Kentuckians in all 120 counties, raising awareness of UK HealthCare while providing information and tools to improve people's overall health.
- ▶ Improved digital marketing, including the recent implementation of a responsive design website that allows users to have an optimal experience on all platforms – from desktops to smartphones.



To provide consistent and easy access, the UK HealthCare website works well on all platforms, from desktops to smartphones.

Going forward, the Marketing team will implement a comprehensive strategic marketing plan that aims to increase both awareness and understanding of the UK HealthCare brand through the implementation of three overarching objectives:

- ▶ Drive a deeper and new understanding of the UK HealthCare brand/subbrands and its benefit to patients, physicians, partners, employees, opinion leaders and all stakeholders.
- ▶ Drive choice of UK HealthCare (by service line) among targeted patient populations in defined geographic areas.
- ▶ Raise the esteem and reputation of UK HealthCare as a world-class academic medical center locally, regionally and nationally.



To engage communities and raise awareness of UK HealthCare and its services, Marketing works with more than 200 organizations across the state.



Facilities

As health care advances, our facilities must do the same. UK HealthCare's master facility plans are developed in response to program growth and to best serving our patients.

The past decade has been one of great physical expansion for UK HealthCare, with more than \$1.6 billion invested in new and improved facilities, program development and technology.

As Pavilion A nears full occupancy, new opportunities emerge in older facilities

The most visible change on the UK HealthCare campus is Pavilion A, our striking new patient tower, providing facilities that meet today's standards and needs for patient care. Pavilion A has been opened in stages, which has allowed patient care rooms and support facilities to be moved from older buildings to state-of-the-art space. Because patient volume has been higher than projected, we have accelerated the fitting out of Pavilion A to meet demand.

Our goal is to have 945 patient beds, the maximum number for which UK HealthCare is licensed, all in large, spacious, well-equipped private rooms. By 2017, we will reach 945 beds as the Neonatal Intensive Care Unit and the 11th floor of Pavilion A open.

Pavilion A

- 
- ◀ Floor 12: To be determined
 - ◀ Floor 11: Cancer, opening 2017
 - ◀ Floor 10: Pulmonary/Medicine, opening 2016
 - ◀ Floor 9: Pulmonary/Medicine, opening 2016
 - ◀ Floor 8: Cardiovascular Services, opened 2014
 - ◀ Floor 7: Trauma & Surgical, opened 2011
 - ◀ Floor 6: Neurosciences, opened 2011
 - ◀ Floor 5: To be determined

The value of Good Samaritan Hospital, now and in the future

Our long-term goal, to be reached incrementally by 2020 or later, is to have all patient care rooms on the Chandler campus, which will likely involve closing Good Samaritan Hospital and replacing it with a new patient pavilion (referred to in our master plan as Pavilion B) on the main campus.

The addition of Good Samaritan Hospital in 2007 gave UK HealthCare 220 patient beds at a time when Chandler Hospital was beyond capacity at the main medical center campus. Because of its age, Samaritan Hospital cannot support the technology and infrastructure needed for our long-term patient care needs.

Reinvesting in new uses for Pavilion H

Like Good Samaritan, Pavilion H is not suited to the type of patient care rooms being built today. Instead of demolishing this building as originally planned, the intent is to repurpose much of it. As its patient care rooms are moved into Pavilion A, UK HealthCare will reinvest in Pavilion H, turning 180,000 square feet of space there into spaces needed for academic and administrative offices and ancillary support.

As areas are moved from Pavilion HA to Pavilion A, improvements long planned for Kentucky Children's Hospital can move forward, including the expansion of the Neonatal ICU (NICU) and women's services.

Newly available spaces in existing buildings will also be used for new and expanded ancillary services identified in the strategies laid out for each of UK HealthCare's service lines receiving strategic focus.

Investment in outpatient facilities will continue

Because outpatient care will make up a larger part of future care delivered by UK HealthCare, we have and will continue to expand our ambulatory care facilities. In early 2015, we unified outpatient care by moving primary care and specialty outpatient clinics that were scattered around Lexington in four different locations into the new \$20 million UK HealthCare at Turfland. This 85,000-square-foot facility on the site of the former Turfland Mall offers patients a free 900-space surface parking lot and a single-floor design, as it puts under one roof family and community care physicians, laboratory services, a pharmacy, occupational medicine, sports medicine and rehabilitation, an optical shop, optometry, travel medicine and oral health clinics.

Through UK HealthCare's agreement with Shriners Hospitals for Children, a new Shriners facility will open in 2017 across from Chandler Hospital. The top two floors of this building include expanded space for Ophthalmology & Visual Sciences. When the Eye Clinic moves out of Kentucky Clinic, more space will become available there for ambulatory service needs.

Investing carefully and wisely in the future

In the next decade, as we proceed with our buildout of the medical center, an additional \$1.5 to \$2 billion, all self-funded, will be invested. As we plan and embark on these projects, we will continue to carefully monitor patient care needs and the health care landscape, adapting to changes to ensure funds are being spent to the greatest benefit of those we serve.



UK HealthCare at Turfland opened in 2015 and combines primary care and specialty outpatient clinics previously housed in four different locations in Lexington.



Strategy Implementation

As the strategic plan moves from concept to reality, there will be an ongoing need for oversight, communication, monitoring, development and revision. The newly created Enterprise Strategy Office (ESO) will lead this effort.

This resource will continuously monitor the implementation of the plan and facilitate development of detailed plans, as well as the adjustments and additions required to adapt to the various changes and challenges that will impact the health care industry in coming years. Internal organizational performance and external factors will be monitored to assist in this identification. Factors that will be monitored include faculty recruitment, capacity, patient population, political, social, economic, technological, payor, competitor, regulatory and industry trends.

The Enterprise Strategy Office will coordinate strategic planning efforts across the enterprise to ensure awareness of and alignment on strategic priorities. Communication of UK HealthCare priorities to its faculty and staff will help develop the cultural alignment needed for successful implementation. Also, while the enterprisewide strategy informs the direction of the organization, the identification, development and prioritization of subsequent strategic initiatives will need evaluation to ensure they are aligned to the enterprise strategy.

The ESO will facilitate the communication of strategic initiative plans through the review and approval process and will keep all stakeholders and the executive leadership informed of progress and any barriers to completion. The ESO will help identify potential risks and barriers to success and propose mitigation strategies. Upon approval, the ESO will facilitate transition to the operational team for implementation. In collaboration with each planning team, metrics will be clearly identified and monitored post-implementation.





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