

# HealthKentucky 2019

A Report on Medical Research, Innovation, Life Sciences, Facilities and Health Care Providers



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# HealthKentucky<sup>2019</sup>

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**Health Kentucky is an annual statewide publication that presents an overview** of key elements of the commonwealth's health care sector, with a focus on important research, technology and innovation in the life sciences, and the economic impact of medical services on Kentucky. It focuses this year on efforts to combat Kentucky's major population health problems such as heart disease and cancer. Kentucky has the nation's worst incidence and mortality rate for cancer. The good news is that advanced special initiatives are underway across the state to understand why and fight this problem.



## HealthKentucky<sup>2019</sup>

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# Award-Winning Network Is Making Most Deadly Heart Attacks Less Lethal

**It happens to more than 250,000 Americans each year. Sometimes it begins with an odd sense of breathlessness or sweatiness not related to exertion.** Many experience lightheadedness, chest pain or pressure, or a sense of dread.

Some or all of these symptoms can be signs of a type of particularly deadly heart attack called an acute ST elevation myocardial infarction, or STEMI heart attack.

“A STEMI heart attack begins with a sudden disruption of a mild cholesterol plaque in the wall of the coronary artery that supplies blood to the heart. This leads to a buildup of a clot in an attempt to heal it. However,

this clot formation results in total blockage of the artery,” said Dr. Vipul R. Panchal, interventional cardiologist with Norton Heart & Vascular Institute and medical director of interventional cardiology at Norton Brownsboro Hospital. “It usually occurs in an artery with only mild blockage initially and can occur suddenly without warning. Unfortunately, the rapid progression to total blockage leads to loss of blood supply to the heart. The heart muscle stops working within minutes of this and dies within minutes to hours unless the artery can be opened back up.”

## With STEMI, time saved is life saved

Survival for more than a brief time with a completely blocked coronary artery is a risk, so it is critical to restore blood flow as quickly as possible in order to save a life. Diagnosing a STEMI heart attack can be done only with an electrocardiogram (EKG), which provides information about which part of the heart the blocked artery is supplying.

In most situations, a patient having a STEMI heart attack needs to be treated immediately, and this usually involves an emergent cardiac catheterization to open the blocked artery or administer clot-busting medication directly to the artery.

While not every hospital in Kentucky has emergency cardiac catheterization capability, Norton Heart & Vascular Institute has established a regional STEMI Network to ensure patients from across the region have access to fast, expert, lifesaving care.

The network includes 12 community hospitals, emergency ground and air medical services, and three Norton Healthcare STEMI-ready hospitals. The goal of the network is to stabilize patients wherever they seek help and transport them to one of the receiving hospitals for cardiac catheterization to restore blood flow to the coronary artery as quickly as possible.

“We see dramatically different outcomes depending on the time it takes to restore blood flow,” Panchal said. “The American Heart Association has set a goal of 90 minutes or less from the time a patient first seeks help for a heart attack to when an intervention is performed to restore blood flow. In 2018, Norton Healthcare had a median time of 46 minutes for its care of STEMI heart attack patients due to ongoing team efforts.”

“Norton Healthcare and our network partners are dedicated to providing the best possible care for heart attack patients,” said Russell F. Cox, president and chief executive officer, Norton Healthcare. “The entire process is a well-oiled machine. Our teams practice with annual STEMI drills at each network location and the receiving Norton Healthcare facility to ensure the protocols are working.”



Russell F. Cox,  
Norton Healthcare  
president and chief  
executive officer

### Signs and Symptoms of STEMI: The Deadliest Type of Heart Attack

People can experience heart attacks in different ways. Below are just some of the symptoms that may come on suddenly or may come and go:

-  Chest or arm pain or discomfort.
-  Shortness of breath.
-  Dizziness or lightheadedness.
-  Nausea or vomiting.
-  Sweatiness unexplained by ambient temperature.
-  Palpitations (uncomfortable awareness of the heart beat).
-  Anxiety or a feeling of impending doom.





Dr. Vipul Panchal, Dr. Ibrahim Fahsah, and Dr. Daniel Stewart, Norton Heart & Vascular Institute interventional cardiologists, accept American Heart Association quality and innovation recognitions for Norton Brownsboro Hospital, Norton Hospital, and Norton Audubon Hospital.

## Nationally recognized teamwork

As a result of this team effort, Norton Healthcare received the American Heart Association 2019 Mission: Lifeline Regional Trailblazer Award. This is the first year the American Heart Association has recognized regional achievement as part of its awards program for quality patient care. Norton Healthcare was the only health care organization in Kentucky to receive this award.

“We are pleased to be recognized for our dedication and achievements in cardiac care through Mission: Lifeline and are honored to care for these patients who count on us to provide the advanced treatments they need,” Cox said.



Norton Heart & Vascular Institute STEMI Network members are:

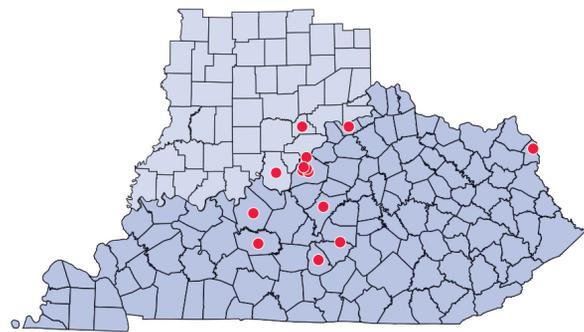
- Breckinridge Health, Hardinsburg, Kentucky
- Carroll County Memorial Hospital, Carrollton, Kentucky
- Flaget Memorial Hospital, Bardstow, Kentucky
- Harrison County Hospital, Corydon, Indiana
- Jane Todd Crawford Hospital, Greensburg, Kentucky
- King’s Daughters Health, Madison, Indiana
- Louisville VA Medical Center
- Spring View Hospital, Lebanon, Kentucky
- Twin Lakes Regional Medical Center, Leitchfield, Kentucky
- Norton Women’s & Children’s Hospital, Louisville, Kentucky
- Clark Memorial Health, Jeffersonville, Indiana
- Scott Memorial Health, Scottsburg, Indiana

Norton Heart & Vascular Institute STEMI Network receiving hospitals are:

- Norton Audubon Hospital
- Norton Brownsboro Hospital
- Norton Hospital

All three receiving hospitals have been recognized by the American Heart Association with Mission: Lifeline STEMI Receiving Center Gold awards. The awards recognize efforts to meet or exceed specific criteria and standards of performance for quick and appropriate treatment through emergency procedures to re-establish blood flow to blocked arteries in heart attack patients. As a receiving center, patients come directly through the emergency department or are sent directly from a network facility.

## STEMI Network Member Hospitals



## STEMI Network Receiving Hospitals

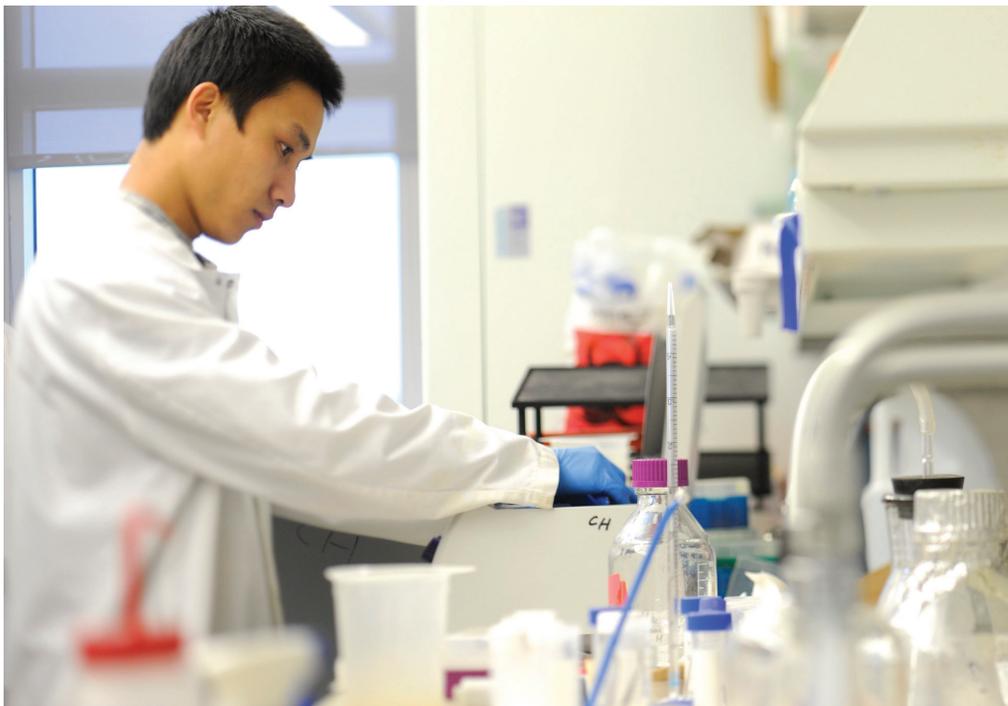


Each network member collaborates with Norton Healthcare to expedite patient care when a STEMI heart attack is suspected and diagnosed. The hospital and emergency transport teams follow established protocols and closely coordinate with the interventional cardiology team at the receiving Norton Healthcare hospital.

“These regions receiving the Mission: Lifeline Regional Trailblazer award are pioneers in STEMI systems of care implementation and are leading the way in care coordination, use of evidence-based care guidelines and coming together to assure a high-quality functioning STEMI system of care,” said Alice K. Jacobs, M.D., professor of medicine, Boston University School of Medicine, and chair, GWTG-CAD Systems of Care Advisory Work Group.

# Focusing on Innovation to Improve Patient Care

KENTUCKY'S ROBUST HEALTH CARE INDUSTRY HAS MAJOR IMPACT ON COMMUNITY



The Markey Cancer Center's designation as a national cancer center by the National Cancer Institute has a broad impact on medical research at the University of Kentucky.

**Kentucky has a rich tradition of service and innovation in the medical field**, with one prominent city, Louisville, hosting more than half a dozen hospitals – from the University of Louisville Hospital and its recent KentuckyOne Health acquisitions, to Baptist and Norton Healthcare facilities to Clark Memorial Health in southern Indiana. And this doesn't count numerous immediate care facilities and medical practices scattered throughout the metro area.

Just about an hour away in Central Kentucky, health systems operated by the University of Kentucky, Baptist Health and CHI Saint Joseph each operate multiple standalone hospitals within a 50-mile radius of Lexington. Numerous independent facilities, like Eastern State Hospital, Clark Regional Medical Center in Winchester and Georgetown Community Hospital, along with independent physician practices round out the region's health care offerings.

St. Elizabeth Healthcare operates five facilities throughout the Northern Kentucky region. The

hospital system is opening a new, \$130 million cancer care center next summer in Edgewood, a 250,000-s.f. facility that will be the region's leading comprehensive cancer center.

In Western Kentucky, notable facilities include Owensboro Health Regional Hospital and The Medical Center in Bowling Green, and others. In Eastern Kentucky, Appalachian Regional Health operates hospitals in several communities.

All told, there are 75 hospitals in Kentucky, which had a gross patient revenue of \$56.6 billion in 2018.

## Louisville's health care companies account for \$500 billion in revenue

You can tell people by the company they keep, and a region by the companies it keeps. In the case of health care – which includes medical services, lifelong wellness and aging care – Louisville is in better company than anyone else in the nation.

“Companies like Humana, Kindred Healthcare, Almost Family (now LHC), Pharmerica, and ResCare (now called BrightSpring) got their start and are headquartered in Louisville,” said David Buschman, managing director of Greater Louisville Inc.'s Health Enterprises Network. “These companies have created a knowledge center and culture of innovation that attracted companies like Atria, Signature and Trilogy to create the nation's largest concentration of headquarters operations.”

Louisville is now home to more lifelong wellness and aging care headquarters than any other metropolitan statistical area (MSA) in the nation, an asset that sets Louisville apart from other health care markets. Buschman said there are 4,100 health-related establishments in the Louisville Metro area and collectively, and they employ more than 124,000 people with an annual payroll over \$4 billion and account for \$50 billion in revenue.

“Health care is the region's largest employer, accounting for 18.2% of all jobs,” he said. “Between 2006 and 2017, health care sector employment increased 22.3%.”

A big factor in these numbers is Norton Healthcare, which continues to grow. The hospital and health care system is Louisville's fourth largest employer, providing care at more than 250 locations throughout Kentucky and Southern Indiana. It includes five Louisville hospitals and more than 14,600 employees. A strong research program provides access to clinical trials, with 850-plus clinical studies underway.

“Our payroll and purchases of supplies and services total around \$1.7 billion each year,” said Michael W. Gough, executive vice president and chief operating officer. “As a not-for-profit, we have a commitment to improving the health of our community and provide funding for

many services that benefit the public. In 2018, our total contribution was valued at more than \$165 million, including \$105 million in charity care and unpaid Medicaid cost for patients who couldn't afford to pay."

The success of Greater Louisville's medical services scene can be attributed to this compassionate outlook, but also to its top-notch workforce and innovation.

A recent example is Talaris Therapeutics Inc., formerly known as Regenerex LLC, a company born at UofL. In April 2019, it announced it had raised \$100 million from investors to develop a therapy that could improve the lives of kidney transplant recipients. It is using technology developed at UofL to allow living donor kidney transplant recipients to stay off immunosuppression drugs for the rest of their lives.

Another UofL researcher, virologist Dr. Donghoon Chung, is one of three principal investigators with a new center working to advance new drugs for the treatment of equine encephalitis viruses in humans. The project, Center of Excellence for Encephalitic Alphavirus Therapeutics, is funded by a \$21 million grant from the National Institutes of Health over five years.

The innovation extends beyond patient care and includes industry distributors and pharmaceuticals. At the end of 2018, AmerisourceBergen, a global health care company, announced it will expand

its full-line Louisville distribution center with a \$15 million investment expected to generate 134 full-time jobs. The project will create a high-tech distribution center, which will package, process and ship pharmaceuticals to health care providers across the country. This investment proves that Greater Louisville's logistical assets also bleed over heavily into the medical sector.

Managing modern health care also requires data prowess and a high-tech skilled workforce. UofL's School of Public Health and Information Sciences is one of the many regional entities helping keep students prepared. Most recently it launched the Master of Science in Health Data Analytics (MSHDA) to coach students to help health care organizations improve their quality and lower the cost of care, while enhancing the patient experience.

In August 2019, UofL announced it had reached an agreement to assume KentuckyOne Health's Louisville-area assets, including: Jewish Hospital, including the Outpatient Center, Rudd Heart and Lung Center, offices and parking garages; Frazier Rehab Institute; Sts. Mary & Elizabeth Hospital; Our Lady of Peace hospital; Jewish Hospital Shelbyville; Jewish Medical Centers East, Northeast, South and Southwest; and physician groups affiliated with KentuckyOne.

The sale is expected to close Nov. 1. What health care really boils down to is helping people



**Norton Healthcare and Jefferson County Public Schools have partnered to provide a new school-based telemedicine program that allows students to be seen by a provider from their school nurse's office using teleconferencing technology.**

– through data or hands-on care. And Norton and other providers are continually meeting that demand with excellence.

Recent examples include the February 2019 opening of a new Norton Women's Health office in Shelby County. And in January 2019, Norton Children's Hospital – which in July 2018 received

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national recognition for its treatment of children with diabetes – opened its new \$12 million, 31,000-s.f. unit that will serve hundreds of sick and injured kids every year. In October 2018, Norton opened its new \$38 million Norton Cancer Institute – Brownsboro. The comprehensive cancer care center brings all Norton Healthcare oncology subspecialties and services together for the first time in one location. In the same month it opened the Norton Breast Health Center on the Norton Brownsboro Hospital campus.

## Central Kentucky facilities at the forefront of innovation

Central Kentucky has always stood tall on the map of innovation in health care. The state's first robot-assisted surgery took place at the University of Kentucky in 2004, when Dr. Chand Ramaiah performed coronary artery bypass grafting using the da Vinci Surgical System. The robotic system is now used at hospitals all over the commonwealth for all sorts of procedures, from gynecological and urological to general surgery and even weight loss. The da Vinci system allows for smaller incisions and quicker recoveries.

It was a game-changer. And just one of many innovations that have shaped the landscape of health care in Central Kentucky.

Because heart disease is the leading cause of death in Kentucky, health care providers are focused on best practices for treating cardiac conditions and helping patients make lifestyle changes to reduce heart disease risk. At UK's Gill Heart and Vascular Institute, researchers are finding very creative ways to improve cardiac surgery and save lives.

Two researchers are working on a program that would allow doctors to use virtual models of patients' hearts to try out "treatments" and see their long-term outcomes before performing actual procedures. Combining physiology and engineering, the researchers are developing software to deliver better therapies for patients with life-threatening heart failure. The endeavor

received a \$3 million, five-year grant from the National Institutes of Health.

Another doctor at Gill, Dr. Michael Winkler, has merged his background in visual arts with his scientific expertise to create custom, anatomically correct 3D printed hearts as a tool for both physicians and their patients. The hearts help patients understand their care and help physicians refine how they deliver care to their patients, according to a press release from UK.

While Winkler did not invent 3D hearts, his version is unique: It's the size of your fist and looks like a carnival prize. And it only costs \$5 to make.

UK Healthcare isn't alone in its quest to improve cardiac health in Central Kentucky.

In 2019, Baptist Health Lexington became Kentucky's first hospital – and the second hospital in the country – to achieve accreditation for its Cardiac Cath Lab. The designation is bestowed by the American College of Cardiology. Closely related is the milestone of Baptist Health Lexington hosting its 200th trans-catheter valve replacement (TAVR) procedure. The minimally invasive procedure reverses narrowing of arteries resulting from calcium buildup.

Baptist Health Lexington saw its footprint grow by 43 cardiac beds, part of a \$14.4 million investment that also added facilities for endocrinology and primary care. Baptist Health Lexington also captured its second consecutive Healthgrades Outstanding Patient Experience Award, and was ranked No. 3 in the state in the *U.S. News and World Report's* annual Best Hospitals analysis.

Frankfort Regional Medical Center is the first hospital in Kentucky to implant the newest injectable cardiac monitor – the Biomonitor III from Biotronik. The monitor is designed to document suspected arrhythmia or unexplained syncope with increased clarity, enabling fast diagnosis and appropriate treatment.

Continuous improvement, often spurred by surgical technology, electronic medical records, transparency and market forces, have radically

changed the health care field. In some ways, hospital administration might today be a field where the passion, grit and determination found in a Silicon Valley startup might be a permanent part of the rewritten job description.

Over three decades, Bruce Tassin, CEO of CHI Saint Joseph Health – and president of Saint Joseph Hospital – has seen "tremendous" change in the industry. Patient care remains a top priority, Tassin said, along with astute management that ensures engaged physicians, happy employees and a collaborative management team at the top.

CHI Saint Joseph Health is the new name for KentuckyOne Health's former Lexington and eastern Kentucky properties.

Saint Joseph and Saint Joseph East in Lexington also embrace innovation. The two hospitals are home to three da Vinci Xi robots, the most advanced technology available for minimally invasive surgery. The surgical system allows patients to have surgery with shorter hospital stays, faster recoveries and minimal scarring.

Saint Joseph is the only facility in the area that now has a second da Vinci Xi robot, and Saint Joseph East is the first hospital in Central Kentucky to be named a Center of Excellence in Robotic Surgery by the Surgical Review Corp., according to a press release from the health care system.

At the University of Kentucky Albert B. Chandler Medical Center (or UK HealthCare, as the entire health system is called), new leadership, recognition for pediatrics and cancer treatment, and a No. 1 statewide ranking sum up the changes felt across the system over the past year.

For the fourth consecutive year, the university's medical center retained its top position in the *U.S. News and World Report* ratings for Kentucky Healthcare. For the 2019-20 period, UK's Markey Cancer Center has been named in the Top 50 national rankings for cancer care, at No. 33.

In October 2018, officials with the National Cancer Institute renewed the Markey Center as a national cancer center for the next five years, granting the institution a \$10.8 million research grant. UK HealthCare and the Lexington Clinic advanced cancer care in April 2019 by placing the clinic's infusions, oncology services and radiation treatment under oversight of the Markey Center.

Standalone medical facilities in Central Kentucky also achieved notable success this year in Kentucky. For instance, Georgetown Community Hospital received distinctions for lung cancer detection and launched a way to see a doctor online with its Healthy Hub Virtual Visit. The

**Jonathan Wenk, left, and Kenneth Campbell are developing computer software at the University of Kentucky to deliver better therapies for patients with life-threatening heart failure.**



e-visit portal will speed access to accurate diagnoses for busy patients.

Clark Regional Medical Center in Winchester hired a new CEO in 2019 and was named a Top 100 Rural and Community Hospital in the United States by The Chartis Center for Rural Health.

Aphreikah DuHaney-West came to Clark Regional from Teche Regional Medical Center, another LifePoint Health facility in Morgan City, Louisiana, where she served as CEO.

In 2018, the Winchester hospital added 34 providers, made more than \$1 million in capital improvements, distributed a payroll of more than \$44 million to 628 employees, donated more than \$1.7 million in services to those in need and paid more than \$2 million in taxes.

## Medical training programs shine

In August, UK College of Medicine welcomed its inaugural class at its Northern Kentucky campus, in partnership with St. Elizabeth Healthcare and Northern Kentucky University.

The four-year medical school campus in Northern Kentucky will complement the educational programs offered at the UK College of Medicine's sites in Lexington, Morehead, and Bowling Green. On-site faculty will teach in small groups and provide simulated and standardized patient experiences with live-streamed lectures delivered from the Lexington campus.

The Northern Kentucky site comes one year after the UK College of Medicine opened a campus in Bowling Green through a partnership with Med Center Health and Western Kentucky University.

The college encompasses 24,000-s.f. on the second floor of the newest building at Med Center Health, which will also include offices for The Medical Center and a five-level, 832-space parking structure. Amenities of the second floor include a computer lab, two large classrooms, four multi-purpose, six small group rooms and eight simulation and standardized patient rooms.

As part of the medical students' education, clinical experiences occur at Med Center Health facilities, which span six hospitals, including its flagship hospital, The Medical Center at Bowling Green, and more than 30 other entities.

"The UK College of Medicine-Bowling Green Campus is a giant leap forward for our health system. Being a teaching hospital brings an unprecedented level to delivering the best in evidence-based care to our patients," said Connie Smith, president and CEO of Med Center Health.

The Medical Center at Bowling Green's graduate medical education program has three residency programs and two fellowship programs: an obstetrics and gynecology residency program; a general surgery residency program; a transitional year residency program; a pulmonary medicine fellowship program; and an interventional cardiology fellowship program.

In partnership with UK College of Medicine, The Medical Center at Bowling Green offers three training programs accredited by the Accreditation Council for Graduate Medical Education (ACGME): an internal medicine residency program, a psychiatry residency program and a cardiology fellowship. These programs are designed to produce skilled, competent and compassionate physicians focused on delivering patient-centered, evidence-based care.

As of July, 58 residents and fellows were enrolled in graduate medical education programs offered at The Medical Center.

## Pikeville awarded grants for children's hospital construction

Pikeville Medical Center received a \$4.78 million grant to be used to construct a new children's hospital and pediatric clinic. The grant was announced during the annual Shaping Our Appalachian Region (SOAR) Summit held in September at the Appalachian Wireless Arena.

The grant will help PMC to establish a children's hospital that will begin to fill a gap in the region's health care network and provide advanced pediatric care to the children of the eastern Kentucky region. It will be built within the main hospital building and is part of an expansion plan at the medical campus.



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# Kentucky's Largest Hospitals

RANKED BY NUMBER OF STAFFED BEDS

There are 13,482\* staffed beds in Kentucky's 75 hospitals. The total number of discharges from Kentucky hospitals was 535,597, and there were more than 2.5 million patient days. The gross patient revenue was \$56,632,631,000.

HOSPITAL NAME	CITY	BEDS	DISCHARGES	PATIENT DAYS	GROSS PATIENT REVENUE
<b>Norton Hospital</b>	Louisville	1,430	73,695	372,766	\$8.06 billion
<b>UK Chandler Hospital</b>	Lexington	914	40,909	270,659	\$5.26 billion
<b>Jewish Hospital</b>	Louisville	820	32,256	116,627	\$2.86 billion
<b>Baptist Health Louisville</b>	Louisville	519	25,672	119,410	\$2.88 billion
<b>Sts. Mary &amp; Elizabeth</b>	Louisville	495	14,575	124,501	\$463 million
<b>King's Daughter Medical Center</b>	Ashland	486	14,621	62,650	\$1.52 billion
<b>Owensboro Health</b>	Owensboro	477	14,617	64,161	\$1.52 billion
<b>St. Elizabeth Edgewood</b>	Edgewood	459	31,447	125,429	\$2.17 billion
<b>Baptist Health Lexington</b>	Lexington	391	20,203	101,743	\$2.85 billion
<b>Hazard ARH Regional Medical Center</b>	Hazard	349	9,311	49,075	\$899 million
<b>UofL Hospital</b>	Louisville	331	15,709	98,523	\$2.55 billion
<b>The Medical Center</b>	Bowling Green	316	16,098	87,522	\$956 million
<b>Mercy Health-Lourdes</b>	Paducah	306	11,044	43,554	\$971 million
<b>Hardin Memorial</b>	Elizabethtown	300	14,066	55,088	\$965 million
<b>Pikeville Medical Center</b>	Pikeville	294	14,474	85,395	\$2.57 billion

\*2018 data from American Hospital Directory, *ahd.com*



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# VAPING, JUULING, E-CIGARETTES – REGARDLESS OF THE NAME, THEY POSE A DANGER TO OUR YOUTH



**Robert Prichard, MD**  
President and Chief  
Executive Officer of  
St. Elizabeth Physicians

e-Cigarettes have become more popular over the past decade, and by that name most people assume there is nicotine in the product. They are also easy to spot when people use them—they look like a fake cigarette or pipe and produce a noticeable cloud of vapor, which is why the term “vaping” is used to describe them. JUULing is a newer form of e-Cigarettes that entered the market in 2017.

JUUL is popular among middle and high school students because of its small size and flavors such as mango and crème brulee – which appeals to a younger audience. The device is also very small and looks like a USB device. The JUUL even recharges in a computer USB slot, so parents may not even know it’s a JUUL device their kids are using. In 2018, JUUL accounted for about 40% of the e-cigarette market, grossing \$150 million in retail sales the last quarter alone.

The most disturbing part of these products is that kids (or adults) don’t know or understand that these products contain nicotine and other varieties of harmful products – it isn’t just water and flavoring like most kids believe. In 2018, the Centers for Disease Control and Prevention (CDC) reported that although there has been a decline in cigarette use, vaping has increased. Even more troubling, it’s the youth of America who are using these specific products. E-cigarette use has increased from 11.7% to 20.8% among high school students and from 3.3% to 4.9% among middle school students from 2017 to 2018.

## THE HIDDEN DANGERS OF VAPING

The liquid used in vaping contains nicotine. One of the issues is that the Federal Food and Drug Administration (FDA) does not regulate these products; therefore, the amount of nicotine is not even known. Some products contain the same or even more than the amount found in actual cigarettes. The FDA has such concerns with these products that in late July, it released new anti-vaping commercials [[https://www.youtube.com/channel/UCxg\\_kBtJtScIpreOEjRDweQ](https://www.youtube.com/channel/UCxg_kBtJtScIpreOEjRDweQ)] warning of the dangers of vaping.

Vaping doesn’t involve burning, instead it turns a liquid into an aerosol before it’s inhaled. However, the aerosol is not just harmless water vapor, rather it contains particles of nicotine, toxic chemicals to help the body ingest the nicotine, and sometimes even heavy metals. Many of the products in vaping liquid have been linked to cancer, as well as respiratory and heart diseases. Long-term studies on the effect of vaping have not taken place because the product has not been on the market long enough and is not FDA approved. Experts believe the addiction to vaping may also be harder to kick than cigarette use. In addition, most of the pharmaceuticals used to help adults quit smoking are not approved for people under the age of 18.

Nicotine is especially harmful to developing brains as the human brain continues to develop until the age of 26. Nicotine can halt that growth in the prefrontal cortex, which controls attention and focus, learning, mood, and impulse control.

## WHAT CAN YOU DO TO HELP PEOPLE UNDERSTAND

Education is critical. Many young people don’t understand the facts about vaping. A recent study showed 60% of teens who vape don’t know vaping liquid contains nicotine. Parents need to be aware of vaping and JUULs. JUULs are small and can be mistaken for a USB drive. Teens are able to use it discreetly in the open because they have learned how to hide it – it’s extremely easy for kids to hide it in their wrist with a hairband, or they have learned how to hold it in their hand undetected.

In July, a federal court decided that by May 2020, e-Cigarette manufacturers will need to apply to the FDA for a public health review of their products. The lawsuit that brought this issue to court was filed by the American Academy of Pediatrics and its Maryland chapter, American Cancer Society Cancer Action Network, American Heart Association, American Lung Association, Campaign for Tobacco-Free Kids, Truth Initiative and five individual pediatricians. No one knows enough about how harmful these new dangers can be and what the incidence of lung cancer and other cancers will be on people who vape – especially among our youth.

The popularity of these new e-cigarette’s will continue to threaten the health of our Northern Kentucky region and Commonwealth, so educating yourself and establishing evidence-based approaches to decrease tobacco use in youth should serve as a template for regulation. Failure to act now could have devastating long-term consequences to our future generations and region.



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