









A message from the Medical Director

Over the past few years, cancer therapy has experienced a renaissance of targeted and immune therapy. This allows our providers to uniquely match each individual patient's cancer to the optimal treatment that improves therapeutic response while minimizing toxicity and side effects. Each cancer that is diagnosed in our system now undergoes a battery of molecular and genetic testing to ensure that we provide the optimal therapeutic options. I am proud to say that the physicians and practitioners at the Kirkland Cancer Center have become leaders on the forefront of this cancer therapy revolution in West Tennessee.

When we think of cancer care, we often tend to only focus on the direct primary treatment of chemotherapy or radiation therapy.

However, to achieve optimal cancer outcomes, there are many other barriers and hurdles patients must overcome. When compared to other cancer centers nationwide, the Kirkland Cancer Center has a wealth of supportive services staffed by the top professionals in their field. Our social workers, patient navigators, schedulers and nursing staff provide our patients with the needed support services to traverse the sometimes-overwhelming, perpetually changing course of cancer care.

The Kirkland Cancer Center first opened its doors in 2013. Our primary goal at that time was to develop a cancer center in the West Tennessee community that can provide cutting edge cancer therapy while maintaining the personal accessible service our patients are accustomed to. While we have grown exponentially in the number of patients that walk through our doors daily, we continue to enthusiastically maintain this goal. This undeniable fact is something I remain respectfully honored to report.

Moving forward through 2019 and beyond, our providers have made a commitment to continue to provide the exceptional personalized care our current cancer patients consider routine while also persisting to expand access to cancer care in the West Tennessee area.

Dr. Joseph Fouche'Kirkland Cancer Center Medical Director

New Biosimilars Offer Lower Costs and Increased Patient Access

Over the past year, tremendous strides have been made to create new biosimilar medical products —enabling critical biological cancer therapies to be more available and more affordable.

So what exactly is a "biosimilar product"? A

biosimilar is a biological medical product that is highly similar to—and has no clinically meaningful differences from—an existing FDA-approved reference medication or therapy. The product may be produced through biotechnology in a living system, such as a microorganism plant cell.

be produced through
biotechnology in a living
system, such as a
microorganism, plant cell
or animal cell. As a whole, the biological product
category features large, complex molecules that
are often more difficult to characterize than small
molecule drugs. (1.)

To receive approval of a biosimilar from the Center for Drug Evaluation and Research (CDER), a manufacturer must demonstrate the product is highly similar to the reference product in purity, chemical identity and bioactivity—although minor differences in clinically inactive components are

acceptable. Manufacturers use state-of-the art comparative tests, along with other information, to prove their case to CDER. (2.)

In 2019, as in previous years, the CDER approved ten new biosimilars. This growing influx of highly similar, highly effective, treatments will help



Biosimilar Medicine

create more competition that are projected to lower medical expenses by \$54 billion over ten years, or about 3% of total estimated biologic spending, with a lower- to upper-bound range of \$25 billion to \$150 billion.

Even more important are the benefits to individuals—the mothers, fathers, grandparents and children who are battling cancer. As more of these treatments become more widely available and affordable, patients will have greater access to the critical treatments they need to beat a variety of cancers including breast cancer, metastatic stomach cancer, metastatic colorectal cancer, non-squamous non-small cell lung cancer, glioblastoma, metastatic renal cell carcinoma, cervical cancer, B-cell non-Hodgkin's lymphoma and chronic lymphocytic leukemia. (3.)

^{1.} https://www.fda.gov/drugs/biosimilars/biosimilar-and-interchangeable-products#biological

^{2.} https://www.fda.gov/drugs/biosimilars/biosimilar-and-interchangeable-products#biosimilar

^{3.} https://www.fda.gov/drugs/new-drugs-fda-cders-new-molecular-entities-and-new-therapeutic-biological-products/new-drug-therapy-approvals-2019

Kirkland Cancer Center Providers



BACK ROW FROM LEFT:

Dr. Anastasios Georgiou; Dr. Brian Walker; Worthy Arrington, DNP, FNP; Dr. Jeffery Kovalic; Dr. Joseph Fouche'; Dr. Gregory Franz; Dr. Archie Wright

FRONT ROW FROM LEFT:

Rebecca Guthrie Parker, DNP, FNP; Chelsey Elliott, FNP-BC; Mary McMillin, FNP; Amy Bryant, FNP; Dr. Shuang Fu



"I decided to live my life in purpose and on purpose."

Rosalind Greer

Rosalind "Roz" Greer Breast Cancer Survivor

After finding a lump while doing her monthly breast exam in the shower, Roz was quite perplexed. After all, she had recently had a full physical, and everything was fine.

She had not experienced any signs or symptoms, nor did she have a strong family history of breast cancer, but unfortunately, a biopsy confirmed stage III breast cancer. That was the day her life changed.

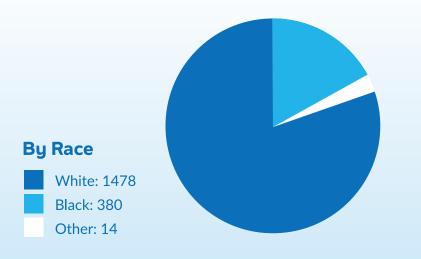
Before the diagnosis, 45-year-old Roz had been busy being a mother to a teenage age son, Joshua: and was a masters' prepared veteran business teacher, and somehow she knew things would feel different now. Her love for basketball. encouraging youth, and trips to the beach had to take a back seat, at least for now. Roz moved ahead on this new journey and chose to have her treatment at Kirkland Cancer Center even after well-meaning friends suggested she travel elsewhere. Roz said the last thing she wanted to do was to travel—being ill. Roz describes

the care she received under the seasoned experience of Dr. Dwight Kaufman, as excellent. "I loved that he had 37 years in the game, and even though he had plans to retire, he said that he would stay until I was well. He was the ultimate professional, trustworthy, and knowledgeable," says Roz.

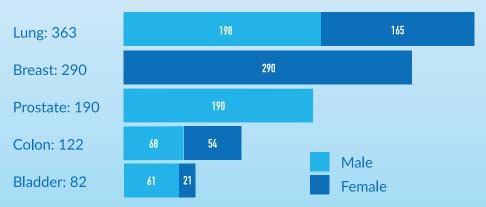
Her treatment regimen included chemotherapy, surgery, and radiation. Roz developed cardiomyopathy before she finished chemo—which caused a setback. Bruised but not beaten, she continued and attributes her sustaining support to her family, her love of God, dear friends, and the Kirkland Cancer Center.

Roz's ability to see change as inevitable demonstrates wisdom that extends beyond her years. "They say that once you're diagnosed—the day before—you'll never be that person again...ever, and I believe that is true," says Roz. She explains that she grieved for 'that' person, but feels that she has done a good job with the process of setting new priorities and having a new life. "I just really decided to live my life in purpose and on purpose."

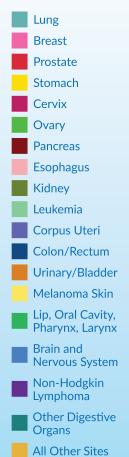
Kirkland • 1,927 total number of cancer diagnoses

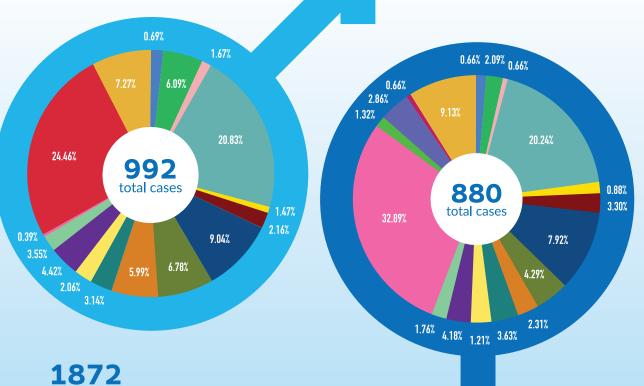


Top 5 occurrences = 1,047





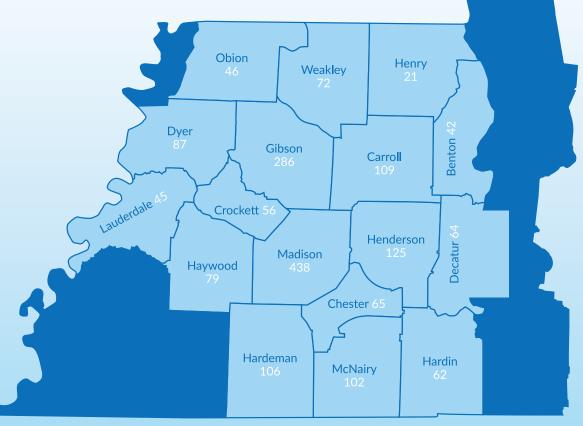




Total number of people diagnosed with primary site cancer

2018 Kirkland by the numbers

1,784 out of 1,872
Patients diagnosed per county



These numbers reflect patients diagnosed and/or treated at Jackson Madison County General Hospital in 2018



Sharon Lynn Taylor, Patient Advocate

Filling the Gap

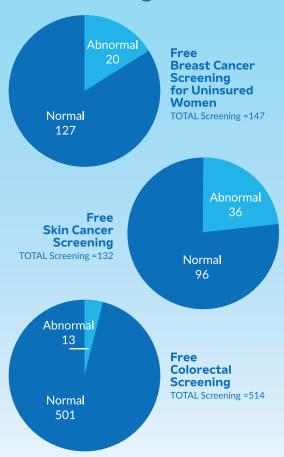
The name "Sharon" has become synonymous with 'trusted friend' for many Kirkland Cancer Center patients during the last year and a half. Sharon has filled a real need as Patient Advocate. Her welcoming and warm demeanor has contributed to her becoming a favorite around the center. When patients are dropped off at the front entrance by their loved ones, Sharon immediately knows if they will require her assistance in some

way. Mobility issues, hearing loss and vision challenges are only a few of the issues she addresses on a daily basis. Patients look for her when they come to the center. Family members feel their concerns float away as they leave their loved ones in her capable and gentle hands as they proceed to the garage to park their vehicles.

When asked to describe her role at the Kirkland Cancer Center, Sharon says "I'd like to think that I fill a gap between the nurses and the receptionists. I welcome patients to our facility, talk with them, and act as a guide to first-time patients. I find myself holding their hand, encouraging them and explaining what's happening. It can be a scary situation for a lot of patients."

Not only do patients and their family appreciate Sharon, but her coworkers are confident and comforted in knowing that she is there. Social Services Manager, Kim Tucker says, "We wanted our patients to feel as though they were being taken care of by family and Sharon has helped us to accomplish this. She is a great compliment to Kirkland Cancer Center and has made the patient experience feel more complete."

2019 Community Prevention and Early Detection Screening





Report from Radiation Oncology

The department of radiation oncology at the Kirkland Cancer Center is dedicated to serving the people of West
Tennessee with state-of-the-art care. We have a team of over 30 healthcare professionals who work with patients and behind the scenes to ensure the highest quality.

Our two radiation oncologists are board-certified and each has over 30 years of experience in radiation oncology. Patients receive a full physical examination, careful review of all the records

and a personal review of all imaging. This information is synthesized for an up-to-date assessment of the patient's current situation and helps to generate specific recommendations for treatment. The process is highly personalized.

We are constantly reviewing the medical literature to bring patients the best treatments. In breast cancer literature, there has been movement, with data to back it up, to deliver shorter courses of radiation therapy in most patients. The outcomes are the same and our patients make fewer trips to the clinic.

In patients who smoke, large studies have found that screening chest CT scans can discover lung cancer in its earliest stages when it is most curable. We are leveraging this information and using a new technology called stereotactic body radiation therapy (SBRT) to treat the smaller cancers. The treatment course is much shorter—only a few days—and the results are excellent. Over 90% of these patients have their lung tumor successfully treated.

A report from the United States Cancer statistical data set in November 2019 revealed that the incidence and mortality of anal cancer is rising. We have had a long-standing multidisciplinary approach to this disease combining intensity modulated radiation therapy with multi-agent chemotherapy given by our medical oncology colleagues. Intensity modulated radiation therapy is a very precise dose sculpting type of treatment that protects normal tissues and is much better tolerated than conventional radiation therapy. Cure rates for this disease are 70 to 90% dependent upon stage.

Human papilloma virus associated head and neck cancer is on the rise in the United States in 2019. We have had a very active head and neck cancer program again with a multi-disciplinary approach using chemotherapy and radiation therapy combined. This requires meticulous planning and set up of the patients. Our two physicists and four dosimetrists help generate personalized computer plans to accomplish this. These plans often require numerous hours of work for each patient to be sure they get the best plan. Success is the norm for these patients as well with cure rates in the 80 to 90% range.

We have had an active brain tumor treatment initiative for many years and have offered stereotactic radiosurgery to the brain for the past 25 years. This is a treatment that focally treats individual brain tumors (both malignant and benign) with carefully delivered radiation therapy. Side effects are reduced with this treatment and the tumor control rates are 80 to 90%. Our department has acquired a special 6° treatment couch to help treat these patients in three dimensions. In addition, there are three extra degrees of freedom to help ensure that these very precise treatments are delivered accurately.

The treatment of our gynecologic cancer patients often requires internal radiation called brachytherapy. Our department acquired a new brachytherapy delivery system in 2019 which is state-of-the-art. It allows us to deliver precise treatments and sculpt the tumor dose better than previous devices. This means fewer potential side effects as well.

In radiation oncology we are all dedicated to bringing personalized, compassionate, evidence-based cancer care to our patients. We appreciate all those who have let us care for them. We look forward to helping future cancer patients for years to come.

Jeff Kovalic, MD
Medical Director
Radiation Oncology
Kirkland Cancer Center



Dr. Mark P. BurtonMedical Director, Pathology and Medical Laboratory Services
Jackson Madison County General Hospital

Tumor markers, pointing the way in the fight against cancer

How can the genetic mutations that cause cancer and direct its destructive path also be a key tool in the fight against cancer? Exciting advances have enabled our cancer specialists to use these genetic mutations as "tumor markers" to detect metastasis, develop prognostics and predict response to treatment.

Over the past decade, biomarkers such as altered DNA, proteins and inflammatory cytokines have become increasingly critical in cancer research and therapeutic strategies. With technological advances in gene expression, and genomic and proteomic analysis, biomarker discovery is expanding rapidly.

So, what is the ideal tumor marker? Theoretically, it would be highly sensitive, specific, reliable with high prognostic value, organ specificity and it should correlate with tumor stages. The current reality is, no single tumor marker has all of these characteristics. However, many tumor markers have shown excellent clinical relevance in monitoring efficacy of different modes of therapies during the course of illness in cancer patients. Additional determination of markers also helps in early detection of cancer recurrence and in prognostication.

Theranostics is another key area of progress, with advances in identifying which tumors are most susceptible to targeted therapies (such as tyrosine kinase inhibitors and immunotherapy) by assessing for PD-L1 expression and MSI status. Ongoing research now includes tumor-associated microRNAs and cell-free DNA, which are small RNA and DNA molecules that can be released into the circulation when tumor cells are dying, or through active secretion. They can be detected through "liquid biopsies" to assess tumor burden, prognosis and early recurrence.

Broad sequencing panels using Next Generation Sequencing (NGS) for gene expression profiling are also becoming a mainstay for a vast variety of tumor-specific genetic expressions and aberrations. Some research hospitals advocate whole genome sequencing of all tumors for research as well as for actionable genetic aberrations. Each tumor is unique in its genetic makeup, which allows for potential targeted therapy and precision medicine.

The bottom line is this: the field is vast and is becoming more complex with every passing month, which emphasizes the need for communication and planning between our oncologists, surgeons, radiologists and pathologists. As part of this ongoing collaborative effort, the West Tennessee Healthcare system works closely with the Medical Center Laboratory to provide world-class testing for our patients throughout the region. For added peace of mind and convenience, Medical Center Laboratory is also well-aligned with other world-class reference laboratories, such as Vanderbilt, Integrated Oncology, Mayo and more—providing any additional ancillary testing needed by our oncologists.

Together, we can use rapidly advancing Tumor Marking to point the way towards the best course of action for each individual in our care and help ensure the best possible outcome.

What is an Oncology Nurse Navigator?

You have just been diagnosed with cancer, and one of the first people you meet on your oncology healthcare team is introduced as a navigator. "A what?" you think. "I need doctors, not a GPS!" But over time, you will realize this person is a great guide.

Being diagnosed with cancer can be overwhelming, and with everything that's on your mind, it can be difficult to absorb the information you have received from your physicians. It can be a daunting task to

keep track of what's next and what to expect on your cancer treatment journey.

At Kirkland Cancer Center, our Nurse Navigator team is specialized in breast, colorectal, and lung cancer care. They are here to support and assist our patients to make sure they have the resources and information needed to enable them to stay committed to their fight against cancer.

What can a Nurse Navigator do to help you?

- Help you make sense of your diagnosis, including understanding the stage and tumor characteristics, as well as your treatment options.
- Help you with any questions you may have about surgery, chemotherapy and/or radiation, and your follow-up care after you finish treatment.



- Understand the role of each member of your healthcare team as well as make referrals to support service team members such as the social worker, registered dietitian, physical therapist, or financial counselor if needed.
- Find potential support groups for you or your loved ones.

Our Nurse Navigators' collective team goal is to enhance our oncology patient's experience by offering assistance, comfort, and peace of mind. We are here for you and we are focused on your personalized, individual care as you navigate through your cancer battle.

Rene Hampton, BS, RN, CNOR(E)

Denise Shook, RN, OCN

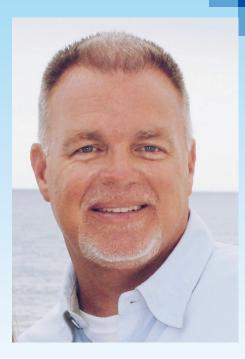
Sharleen Morgan, RN, OCN

Chris Pickens Colon Cancer Survivor

At 48, in the prime of his life, Chris was diagnosed with something he never thought he'd have to deal with, ever. Initially, the self-described 'tough-guy' shrugged off some symptoms he had been experiencing and thought it was "nothing." Chris had never really been sick before- well, at least nothing more than a cold or the flu. However, a couple years later he finally decided to seek out medical advice in regards to his continued symptoms. "I didn't want to complain, but I knew something wasn't right," said Chris. A colonoscopy revealed stage 3 colon cancer. Amazingly, Chris met this new diagnosis with fortitude, not fear. In response to the aggressive recommended treatment plan, he had a "let's get this started" attitude. Chris was ready to attack the problem! He credits his Oncologist, Dr. Franz for being a big motivator for him; always being positive and optimistic.

Chris remembers one of the hardest times was during his chemo treatment when Covid-19 began. Not only was he on "lockdown," but his family was self-quarantined too because they didn't want to introduce any germs to Chris' immunocompromised state. However, therein was the silver lining-Chris got to spend some invaluable time together with his wife and 3 daughters at a crucial time in his life. His family was his main support, but phone calls and prayers from friends and loved ones demonstrated a community love for Chris also.

"There is no doubt if I had gotten a colonoscopy a couple years earlier when I first noticed symptoms, the treatment probably would not have been as extensive," said Chris. He wishes he had listened to his body sooner. Nevertheless, he now has a wonderful prognosis. His recommendation to all his friends is to "listen to your body and go and get checked out. It's so worth it!" He attributes his "awesome experience" to the Kirkland Cancer Center, Dr. Franz, Dr. Georgiou, and the staff.



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Chris Pickens
Colon Cancer Survivor