HOPE
INVESTING IN
Philanthropy in Action at UVA Cancer Center
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Wendy Mbugua, manager of UVA's Infusion Center, leverages iQueue, a cutting-edge new technology, to improve patients' experiences.

How Algorithms Can Improve Patient Experience

A New Scheduling System Drops Infusion Wait Times to Minutes

UVA Cancer Center's Infusion Center is open seven days a week, 363 days a year. It includes both private and communal treatment areas, thanks, in large part, to private support from across the community. Specially trained nurses administer a variety of treatments, including chemotherapy and therapies for various chronic conditions.

With great care comes growth, and in the past four years alone, the infusion center has seen a 100% patient volume increase. Now, anywhere from 110 to 175 patients come through the center's doors for treatment each day.

A higher volume of patients presents an important challenge: How do you add appointments to an already bustling daily infusion schedule—without detracting from patient or caregiver experiences?

This past November, a cutting-edge scheduling technology called iQueue provided the perfect solution. Designed by healthcare analytics company LeanTaas Inc., iQueue leverages data from a hospital's electronic medical records and then combines advanced data science, complex mathematical algorithms, and machine learning to revitalize healthcare operations.

"This challenge of scheduling patients for infusion is not unique to UVA—it's pervasive," says Jody Reyes, MSBA, cancer services administrator. "I see this product becoming a staple at infusion centers across the country.

continued on back cover

Improving the Odds for Virginia's Lung Cancer Patients

UVA is Taking Screenings on the Road

Members of UVA's lung cancer team include (l to r) Drs. James Larner, Christine Lau, Ryan Gentzler, Linda Martin, and Rich Hall.

It's no secret: The best way to beat lung cancer is through prevention and early detection. That's the message that UVA Cancer Center's expert radiologists and lung oncologists are taking on the road. And they're doing more than talking: They are screening at-risk individuals and offering tools for lung cancer prevention. This spring, UVA's Lung Cancer Screening Program began seeing patients at a new satellite site, Buchanan General Hospital in Grundy, Virginia.

"Southwest Virginia has some of the highest rates of smoking and lung cancer in the country," says radiologist Mike Hanley, medical director of the program. "Often, smaller hospitals in these communities don't have the tools to offer effective screening and follow-up. More often, screening centers exist in urban areas, far from the patients who need them the most."

Basic lung screening involves a low-dose CT scan that can be done at a satellite site and interpreted at UVA. Patients have full access to UVA Cancer Center resources, including remote consultations through UVA's telemedicine network and on-site appointments with UVA specialists. The program's goal is to identify patients at elevated risk, diagnose lung cancer in its earliest stages, and provide therapy when the disease is most treatable.

"What differentiates UVA is that, in addition to a comprehensive screening program, we provide support that goes well beyond the CT scan," says Hanley.

Patients who undergo the screening receive information about cancer risk factors, access to a comprehensive smoking cessation program, and follow-up care. If the scan reveals a concern, patients are referred to UVA's expert lung cancer team, including medical oncologists and thoracic surgeons.

At every stage of the process, a dedicated lung cancer screening nurse practitioner, Melissa Stanley, guides and supports patients. Stanley provides face-to-face smoking cessation counseling, education materials, and prescriptions to aid in smoking cessation.

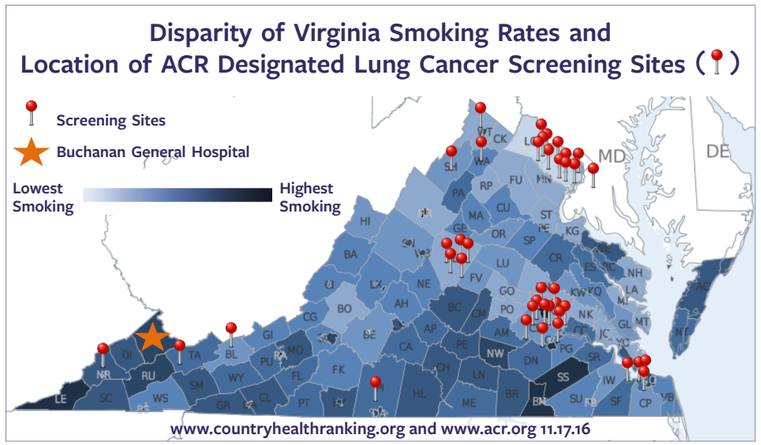
"Having a nurse practitioner ensures that care is centralized and patients have everything they need along the way," says Hanley. "And, of course, we are backed by a highly trained team of caregivers who focus on lung cancer and its treatment."

"Lung cancer is the number one cause of cancer-related deaths in the United States," adds UVA lung oncologist Richard Hall. "Through this program, we can reach a significant number of at-risk patients in underserved areas of Virginia, offering help to those who need it the most."

Initial program funding comes from a grant from the Tobacco Region Revitalization Commission. Screening is covered by most insurance companies.

Melissa Stanley, RN, dedicated lung cancer screening nurse practitioner

Mike Hanley, MD, medical director of UVA's comprehensive lung cancer screening program



Meet Dr. Craig Portell, hematologist and oncologist at UVA Cancer Center

Hope is one of the most important words cancer patients can hear, and through his team's work and clinical trials, Craig Portell, MD, is often able to offer patients just that. Portell is a hematologist and oncologist at UVA Cancer Center with a specific interest in blood cancers—mainly, chronic leukemias and lymphomas. Portell currently has 10 active clinical trials underway at UVA and five more in the pipeline. All prioritize advancing the standard of care through the incorporation of non-chemotherapy or other novel treatments. For patients, this often means a new way forward after a cancer diagnosis.

Q: What attracted you to UVA?

When I was looking to make my next career move, Virginia was not at the top of my radar. But an opportunity presented itself to work with [Michael E. Williams, MD,] a great mentor of mine and the chief of the hematology/oncology division at UVA. When my wife and I visited, it was a beautiful Charlottesville day and we loved the city and the surrounding area.

Q: Why hematology/oncology, and more specifically—why blood cancers?

I began medical school with my sights actually set on forensic pathology. I quickly realized that field meant a whole lot of paperwork, and when I got into the clinical space, I realized how much I enjoyed interacting with patients. At the same time, I stayed very interested in pathology. Pathology explores cell biology and histology, which directly influences the different therapies we can use to fight blood cancers. A small piece of tissue dictates the entire direction of treatment and our understanding of the cancer moving forward. Becoming a hematologist-oncologist was the perfect blend for me—the patient is my focus and pathology often becomes the key to their care.

Q: What are you most excited about in your current work?

Because Dr. Williams was so instrumental in the early discovery of mantle cell lymphoma (MCL) as a specific type of non-Hodgkin lymphoma that is typically very aggressive, I have several clinical trials focused on MCL. The novel agents we're using to combat MCL at UVA are some of the most exciting in our field and offer a non-chemotherapy alternative for patients. In the future, using the body's own immune system to fight cancer will become the new paradigm for cancer care.

Q: How does private philanthropy impact your current work and goals?

Many of the clinical trials we offer are homegrown, created and developed right here at UVA. Before they are made available to patients, a proposal has to be written and submitted. There's nothing like going for a clinical study proposal and having solid basic science and translational research to support your story. For example—our MCL clinical trials would not have been developed to the point they are today without a significant amount of translational science, which developed out of collaborations with [Michael Weber's, PhD,] lab. Much of that fundamental work was and is supported by philanthropic donations. Philanthropic support truly does make new therapies possible and available to patients who need them the most.

Q: One thing most people don't know about you?

My sock collection is quite impressive! I don't have a favorite pair—just whichever feels right for the day ahead.

UVA IN THE NEWS

Daniel "Trey" Lee, MD, a pediatric oncologist and researcher at UVA, has been developing a new gene therapy to battle treatment-resistant pediatric leukemia. In September of 2017, a teen became the first patient in Virginia to receive a dose of this experimental immunotherapy. **Now, the Clinical Research Forum, an advocacy group for clinical research, has recognized the groundbreaking work as one of 2017's most important clinical research studies.**

The approach, known as chimeric antigen receptor (CAR) T-cell therapy, takes a person's own immune cells and genetically modifies them with the goal of making them more effective cancer killers. Lee conducted the research with colleagues while at the National Institutes of Health's National Cancer Institute, in collaboration with Stanford University. He has continued his work since being recruited to UVA, where he is part of the UVA Cancer Center and UVA's Carter Immunology Center, a UVA Children's Hospital faculty member, and the director of the Pediatric Bone Marrow Transplant Program.

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continued from front cover

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>
> – **Jody Reyes**
> Cancer Services Administrator

Each patient's infusion requires a different amount of time, depending on variables such as pre-treatment lab work or drug preparation. iQueue uses mathematical calculations to schedule patients according to the expected duration of their treatments. The system becomes smarter the more it is used, as it learns the unique patterns of patient flow at UVA.

During the six weeks prior to iQueue going live, patient wait times averaged two hours. The unpredictable wait times caused a strain for nurses as well, who often worked overtime just to wrap up their patients' treatments.

"We had patients we were committed to caring for, but we couldn't deliver that care in the way we wanted," Reyes says.

Six weeks after iQueue launched, wait times were reduced drastically—to mere minutes. The trend has continued, improving efficiency by enhancing access to care for all patients, including walk-ins, and reducing staff overtime.

"The schedule is level-loaded so that patients come in on time and leave on time," says Wendy Mbugua, manager of the infusion center. "Appointments are spread throughout the day, and we are able to treat patients in a timely manner. We were able to use this technology to improve the way we scheduled our patients to enhance their experience."

Patients are pleased with shorter wait times. And if patients are happy, the staff is happy, too.

"The staff is so appreciative of their time at work being respected and gaining a good work-life balance. Morale is key to what we do, and iQueue has enhanced it tremendously," Mbugua says. "We take care of really sick people here, and it's a good feeling to know that they are no longer having to wait a long time for their treatments. Now when you walk in the waiting room, there are just a few people sitting there at any given time, and the patients seem more relaxed. It's an overall revitalized experience for everybody who comes to the infusion center."

Support UVA Cancer Center

Interested in supporting the compassionate care and groundbreaking research happening every day at UVA Cancer Center? Visit SupportUVACancer.org or call 1-800-297-0102 to begin a conversation.

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