

A New Front Door

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The James Cancer
Diagnostic Center



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The cancer population continues to grow, with an estimated 1.9 million new cases to be diagnosed in 2022.¹ A cancer diagnosis is challenging. At times, patients' symptoms may prompt urgent or emergent evaluation; other times, the disease is more insidious. In many instances, presenting signs or symptoms also mimic features of benign disease states, necessitating a comprehensive investigation to tease out cases that are truly indicative of malignancy versus those of other etiologies. These investigations often require complex care coordination with cancer-specific experts and a variety of imaging and laboratory testing modalities, all of which can be challenging to facilitate in a timely fashion. Furthermore, studies indicate that diagnosis at a later stage of disease is a contributor to poor health outcomes.^{2,3} As such, it is imperative to prioritize efforts to expedite a cancer diagnosis whenever possible.

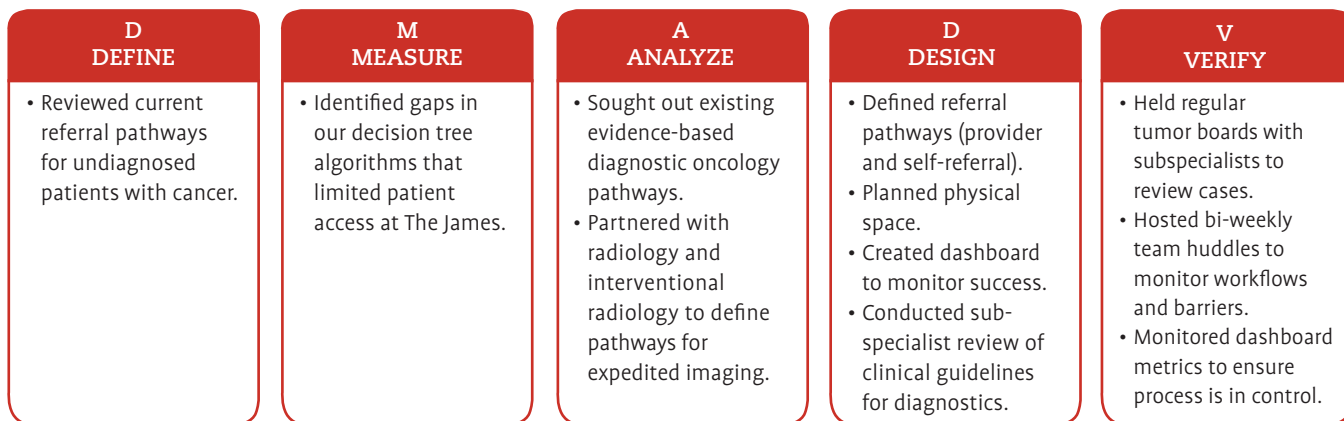
In addition to evaluations driven by patients who are experiencing symptoms, many cancer diagnostics are pursued in response to abnormal cancer screening results. Established screening methodologies, such as those for breast, cervical, colorectal, and lung cancers, are estimated to save hundreds of thousands of lives.⁴ Unfortunately, the COVID-19 pandemic significantly impacted routine cancer screening, resulting in decreased rates of cancer screening, diagnosis, and treatment.⁵ Downstream sequelae of this phenomena will likely include worse survival statistics for an extended period of time, particularly among vulnerable populations.^{6,7} Despite the pandemic's negative impact on cancer screening and detection, it has positively spurred the healthcare enterprise to rethink current diagnostic strategies for

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patients. Novel methods to deliver care to the right patient at the right time and in the right place are required.

In recognition of these needs, The Ohio State University Comprehensive Cancer Center – The James, located in Columbus, Ohio, formed a multidisciplinary workgroup in November 2019 to develop a clinic that would provide direct, expedited access to diagnostic testing for patients that have a suspicion of cancer via radiographic imaging, lab finding, or physical exam. The premise of this clinic is to leverage the expertise of our providers at The James to deliver a comprehensive assessment of signs and/or symptoms that are concerning for malignancy in a timely fashion and in a single location—virtual or in-person—that is convenient for patients. This clinic would ultimately come to be known as The James Cancer Diagnostic Center.

Figure 1. The Six Sigma DMADV Process



Opening a New Clinic During a Global Pandemic

The James is a National Cancer Institute (NCI)- and National Comprehensive Cancer Network (NCCN)-designated cancer center. It is also the third largest cancer hospital in the nation and home to more than 200 oncologists. In 2019, leadership at The James identified the need to better serve its community and share its cancer expertise through the development of a rapid cancer diagnostic pathway. With the help of a process engineer team, The James deployed the Six Sigma DMADV (define, measure, analyze, design, verify) methodology to design a focused diagnostic clinic that would fit seamlessly into current patient intake workflows (Figure 1, above). The James assembled a team of cancer center leadership, including the chief medical officer, nursing and service line administrators, advanced practice providers (APPs), the new clinic’s medical director, and representatives from the departments of Informatics, Marketing, Operations Improvement, Outreach, and Patient Access. The workgroup was tasked with deploying this novel diagnostic process by November 2020.

During the define phase, the workgroup identified the opportunity to improve how patients first entered The James for their cancer care. The workgroup observed that some patients could not be scheduled to see our experts because they did not have a confirmed, pathologic cancer diagnosis. In the measure phase of this project, the workgroup identified the specific patient populations that were denied appointments due to gaps in decision tree algorithms that mandated a pathologic diagnosis prior to treatment scheduling. Through this process, the workgroup confirmed the need for a dedicated clinic to accommodate patients without a definitive cancer diagnosis. As decision trees were recreated to include referral opportunities to this novel diagnostic center, the workgroup realized that the inclusion of a self-referral option for patients, who are not established with primary care and/or those with limited healthcare access, is critical to the health equity mission of the new clinic and The James.

In the analyze and design phases, the workgroup sought out existing evidence-based diagnostic oncology pathways. The

workgroup also partnered with radiology and interventional radiology to discuss workflows that would permit patients to receive same-day imaging and expedited biopsies if clinically appropriate. These conversations took place in March 2020, right as the COVID-19 pandemic accelerated, prompting a temporary pause of the workgroup’s efforts to better prioritize pandemic-related operations at The James.

The original target date to open the diagnostic center in November 2020 was placed in jeopardy, while The James faculty and staff continued to navigate COVID-19-related challenges. In mid-May 2020, as a response to the deleterious impact of the pandemic on cancer screening rates and many canceled appointments for symptom assessment, The James’ leadership recognized the urgent need to elevate opportunities that would enhance patient access. Consequently, efforts related to the diagnostic center were reinvigorated, and the workgroup was charged with opening the clinic by mid-June 2020.

With the target date to open its doors rapidly approaching, the workgroup jumped to action and quickly outlined the necessary steps to operationalize the diagnostic center. Subject matter experts were consulted to ensure each operational element was addressed. Tasks included:

- Setting up the physical space for the diagnostic center
- Identifying nurses and providers to staff the diagnostic center
- Establishing appointment types (virtual and in-person) and provider templates for scheduling
- Creating a dashboard for metric capture
- Developing a new department and referral pathway in the electronic health record
- Obtaining necessary equipment and supplies
- Developing and carrying out internal and external communication and outreach.

Upon completion of this whirlwind of activity, The James Cancer Diagnostic Center ultimately opened its doors on June 15, 2020 (Figure 2, page 19).

Figure 2. The James Cancer Diagnostic Center Introductory Announcement

**Introducing
The James Cancer
Diagnostic Center**

At The James, we understand that cancer is a complex disease that when detected early has more opportunities for successful treatment and cure. That's why we have opened The James Cancer Diagnostic Center. Our experts provide patients who may have cancer with direct, expedited access to diagnostic testing. The center offers a first step in determining each patient's specific type of cancer delivered by the experts who study and treat cancer every day.

To make a same-day or next-day appointment, visit cancer.osu.edu/diagnosticcenter or call 800-293-5066.

The James
THE OHIO STATE UNIVERSITY
WEINER MEDICAL CENTER

The Diagnostic Center's Staffing Model

The James Cancer Diagnostic Center is currently staffed by doctoral-prepared, certified nurse practitioners with advanced oncology certification through the Oncology Nursing Certification Corporation. Given the clinical complexity of the diagnostic center, APPs with several years of solid tumor and hematologic malignancy experience in both the inpatient and ambulatory settings, as well as a strong foundation in internal medicine, were targeted to staff the clinic. Additional backup staffing is provided by The James' medical oncology consult team. At inception, the diagnostic center was staffed by rotating APPs until a full-time position could be filled by a dedicated provider with the aforementioned experience. Due to increases in clinic volume and the amount of care coordination required for each patient, a second APP was added more recently to support the diagnostic center. It is also staffed by three nurses with more than 30 years of oncology experience in both the inpatient and outpatient setting. Nursing plays an invaluable role in guiding patients and providing reassurance through the diagnostic journey and its associated uncertainties. The diagnostic center's medical director is a board-certified internist and medical oncologist; she offers case review and clinical support to the team, when needed.

Feedback from APPs and nursing staff early in the development of the clinic was instrumental in capturing the productivity of the clinical team and included suggestions to restructure the diagnostic center template to optimize the time required for care coordination, follow up, subspecialty consultation, and documentation. The number of new patient visits per day was restricted to allow for telemedicine return visits to discuss diagnostic results and next steps in a patient's plan of care.

The Diagnostic Center Visit

The James Cancer Diagnostic Center offers evaluations five days a week and currently operates in two locations to better serve those living in the surrounding communities. Patients with a suspicion for cancer via radiographic, laboratory, or physical exam findings are invited to be seen in the diagnostic center. External and internal provider-initiated referrals, as well as self-referrals, are accepted. Once the evaluation request is received, the clinic team screens the consultation to ensure The James Cancer Diagnostic Center is the appropriate clinic for upfront evaluation. The goal of the diagnostic center is to streamline the cancer diagnostic journey for patients as much as possible. If an initial consultation with a different specialty clinic would result in a more direct care experience, that referral would be appropriately re-triaged. Given the highly specialized nature of their exams and/or imaging, patients with suspected non-metastatic, primary breast, gynecologic, or central nervous system malignancies are also generally triaged directly to their respective specialty clinics within The James. Upon screening clearance, every effort is made to see the patient promptly within two to four business days or, if clinical urgency necessitates, on an urgent or same-day basis.

Prior to a patient's first appointment, the clinic and scheduling teams diligently work to obtain any prior, completed diagnostic evaluation(s) and other relevant collateral. Given the typical complex nature of any presenting signs and/or symptoms, approximately one to two hours are expected for each new patient visit. Providers review the patient's medical history, reason(s) for referral, and other pertinent clinical information prior to their arrival for the appointment. During the visit encounter, the clinic team will obtain a thorough history and physical and, based on the findings to date, formulate a diagnostic plan of care. The diagnostic work-up may include:

- Labs
- Same-day ultrasound
- Same-day CT (computed tomography)
- Urgent MRI or PET (positron emission tomography)
- Same-day FNA (fine needle aspiration) biopsy
- Urgent referral to specialty teams or interventional radiology for biopsy.

APPs collaborate with physicians, proceduralists, and other APPs within The James and larger academic institution to decide on a tailored and expedited plan of care for each patient. After undergoing workup, the patient is contacted within one to two

days via telehealth to review their results and discuss next steps, as indicated. Clinic staff place referrals to oncology specialists and coordinate with the patient and scheduling teams to ensure the care plan is quickly enacted. If the patient does not have a cancer diagnosis, every effort is made to refer them to the appropriate specialty team, such as gastroenterology, neurology, rheumatology, pulmonary, or back to their primary care provider. Closed-looped verbal or written communication with the referring provider is a clinic standard. Once a patient is successfully established with their oncology team (or other appropriate provider), APPs review and then formally sign-off on the final plan of care.

Results Matter: Throughput and Output

Since the James Cancer Diagnostic Center opened in June 2020 and through September 2022, the clinic saw nearly 1,100 new patients and almost 1,000 return patients for visits (Figure 3, below). The majority of these visits were conducted in person (54 percent), although a significant amount of telemedicine (video visit or telephone encounter) appointments were employed (46 percent), particularly for return visit encounters. Most referrals (47 percent) were from internal providers; 31 percent came from external sources, and 22 percent of patients self-referred. The median lag time for new patients to be seen in the diagnostic center was three days.

The James Cancer Diagnostic Center evaluates a myriad of signs and symptoms (Figure 4, page 21); generalized or localized enlarged lymph nodes is one of the most frequently seen concerns. The clinic also uses a variety of diagnostic tools to evaluate patients. To date, clinic staff have ordered more than 13,000 discrete laboratory studies, imaging, or procedures. During this same time, over 550 subspecialty visits for ongoing care have directly resulted from patients’ evaluation at the diagnostic center, including referrals to subspecialized hematology and medical oncology clinics, among others.

Enterprise Impact at The James

In some instances, The James Cancer Diagnostic Center represents the first point of contact a patient may have with The James. In fiscal years 2021 and 2022 combined, we estimate that more than 230 new patients made their entry into The James via the doors of this diagnostic center; many of these patients were also entirely new to The Ohio State University Wexner Medical Center—the overarching healthcare program at the university. Based on these statistics and experiences to date, we believe The James Cancer Diagnostic Center is well positioned to contribute to The James’ greater vision: offering access to world-class diagnostic and cancer care to the larger community.

Like other large academic medical centers, The Ohio State University’s emergency and inpatient care sites typically operate at full or near-full capacity. To ensure that emergency and inpatient bed usage is optimized, The James Cancer Diagnostic Center has partnered with the university’s hospital emergency department and transfer center, which coordinates patient flow for the entire enterprise and referring hospitals. The diagnostic center collaborated with these teams to develop workflows that identify patients with a concern for cancer, who might not require emergency or inpatient-level care, and may be more appropriate for the diagnostic center. Prompt appointments are offered to these patients who meet established criteria. Efforts to refine appropriateness criteria and streamline the referral process to The James Cancer Diagnostic Center are actively being pursued.

The Patient Experience

The James Cancer Diagnostic Center prides itself in offering personalized care and a “concierge” feel to patients. Clinic providers closely monitor and maintain contact with patients from the time of referral to when they are handed off to

Figure 3. The James Cancer Diagnostic Center’s New Patient Volumes

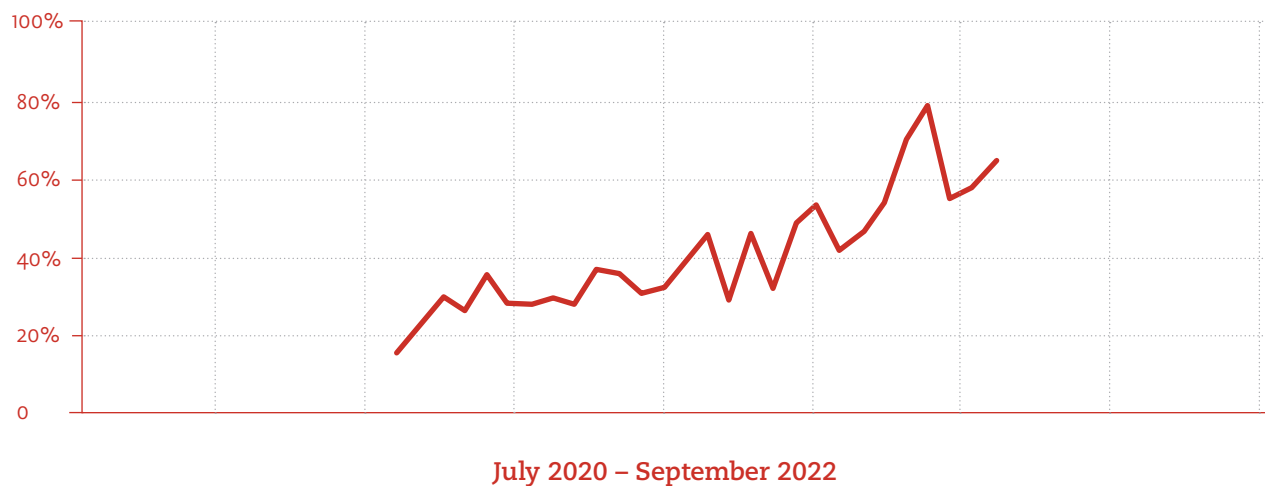
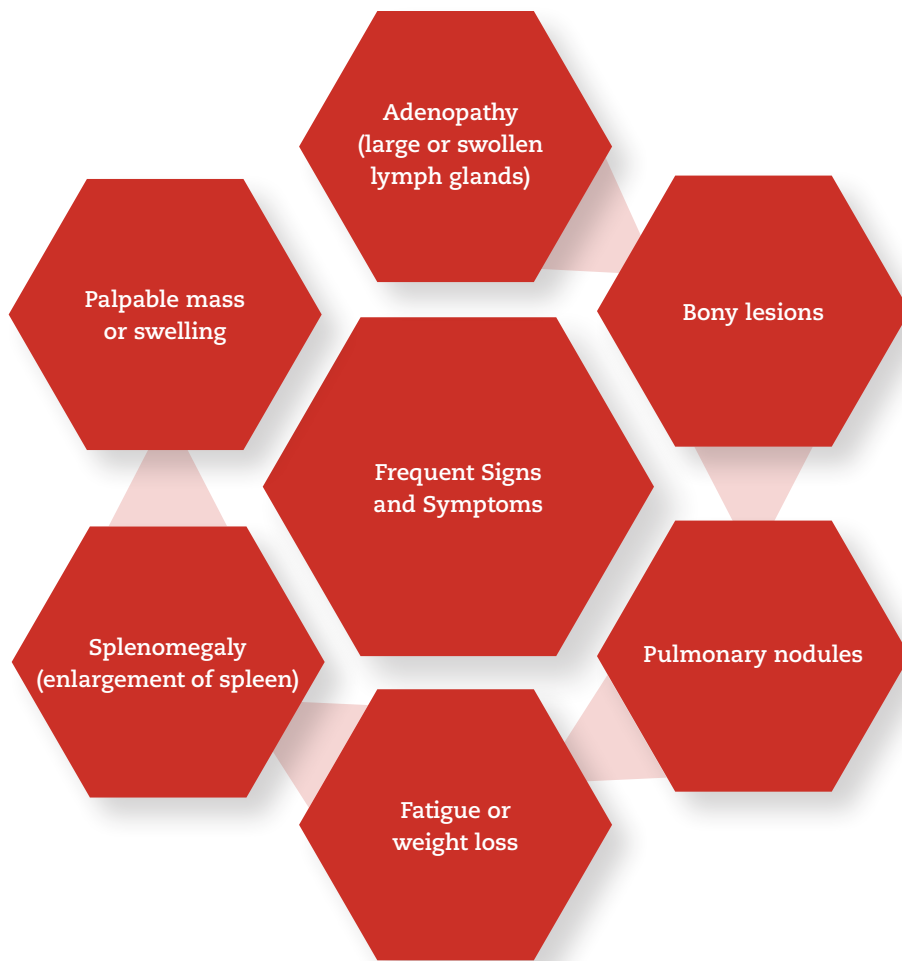


Figure 4. Frequently Evaluated Signs and Symptoms



a subspecialty provider or back to their primary care provider. This new “front door” to The Ohio State University Comprehensive Cancer Center—The James is the first impression many patients have of the university’s larger cancer hospital. As such, it is a clinic priority to ensure patients feel welcome and well cared for throughout their diagnostic experience. Comments received to date from patients, caregivers, providers, and staff, alike, highlight the warmth and compassionate care the clinic strives to deliver.

Education and Research: Maintaining High Standards and Creating a Cancer-Free World

From inception, subspecialty providers were engaged to confirm cutting-edge care and the most up-to-date diagnostic methodologies are used at The James Cancer Diagnostic Center. Subspecialists directly informed many of the initial clinic diagnostic pathways and helped identify the types of pathologies most appropriate for clinic evaluation. This close

collaboration continues today to ensure the delivery of high-quality care. The James Cancer Diagnostic Center provider team holds regular tumor board reviews with subspecialty providers to discuss challenging cases or identify opportunities to strengthen the diagnostic pathway. When a cancer diagnosis is confirmed, the clinic’s team works hard to ensure all necessary diagnostic information is obtained so that subspecialists can rapidly move to treatment planning when they first meet a newly diagnosed patient.

Committed to advancing The James’ mission of creating a cancer-free world, The James Cancer Diagnostic Center actively partners with several research teams to contribute to our current understanding of cancer. Patients with a suspicion for a new lymphoproliferative disorder are offered the opportunity to participate in The James’ Leukemia Tissue Bank Shared Resource. This research team seeks to better characterize lymphoproliferative disorders, like lymphoma and leukemia, by studying biospecimens obtained prior to treatment initiation. The James Cancer



Diagnostic Center's patients may also enroll in The James' Total Cancer Care[®] Protocol, which studies patients and their tissues to advance understanding of the differences between patients so that the prevention, detection, and treatment of cancer may be better tailored to the individual.

Looking Forward

The James Cancer Diagnostic Center and The James' leadership teams continue to refine and further grow this innovative care delivery model through a variety of quality, operational, and scholarly initiatives. For example, the diagnostic center is actively developing partnerships with primary care providers to enhance support for when diagnostic uncertainty arises and to lead complex care coordination. Collaborations to better streamline the diagnostic process, such as offering same-day diagnostic center and interventional radiology appointments to expedite tissue biopsies, are also under consideration. The James has recognized that this APP-led provider clinic model is unique; as such, it is reviewing opportunities to extend the diagnostic center's expertise to other medical learners. Finally, The James also seeks to highlight the diagnostic center's impact on enterprise resource utilization by providing measurable contributions to triage the right patients at the right time to the right place and promote emergency- or inpatient-bed avoidance if clinically appropriate.

When a suspicion for cancer arises, The James Cancer Diagnostic Center represents a novel "front door" for the community to access The James' cutting-edge diagnostic and cancer care. This model promotes efficient use of resources and, most importantly, the delivery of high-quality, patient-centered care. The changing healthcare climate necessitates innovative and effective care delivery models, like the diagnostic center, which demonstrate value while prioritizing the patient.

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