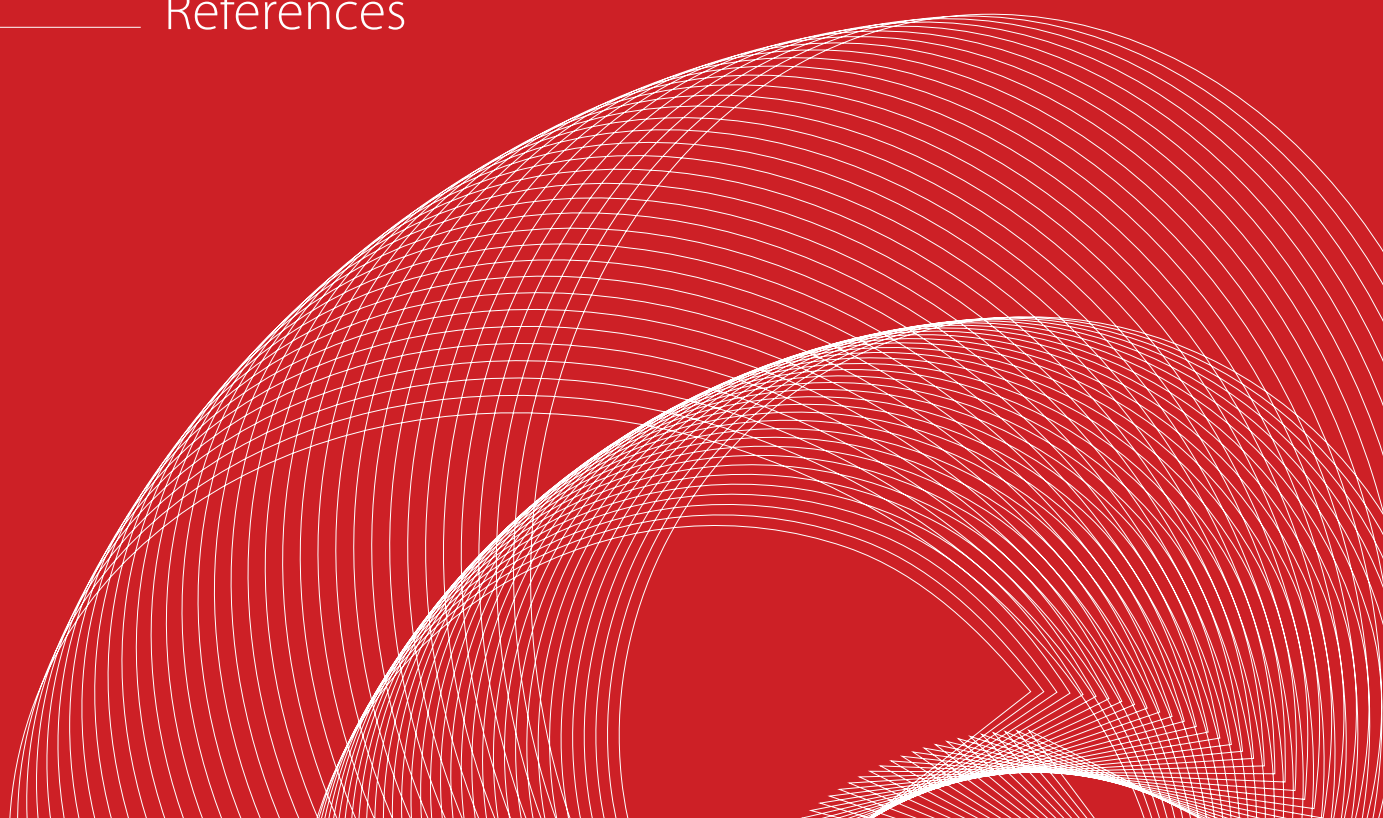


Healthcare Equity



Elevating Care in
a Rural Community

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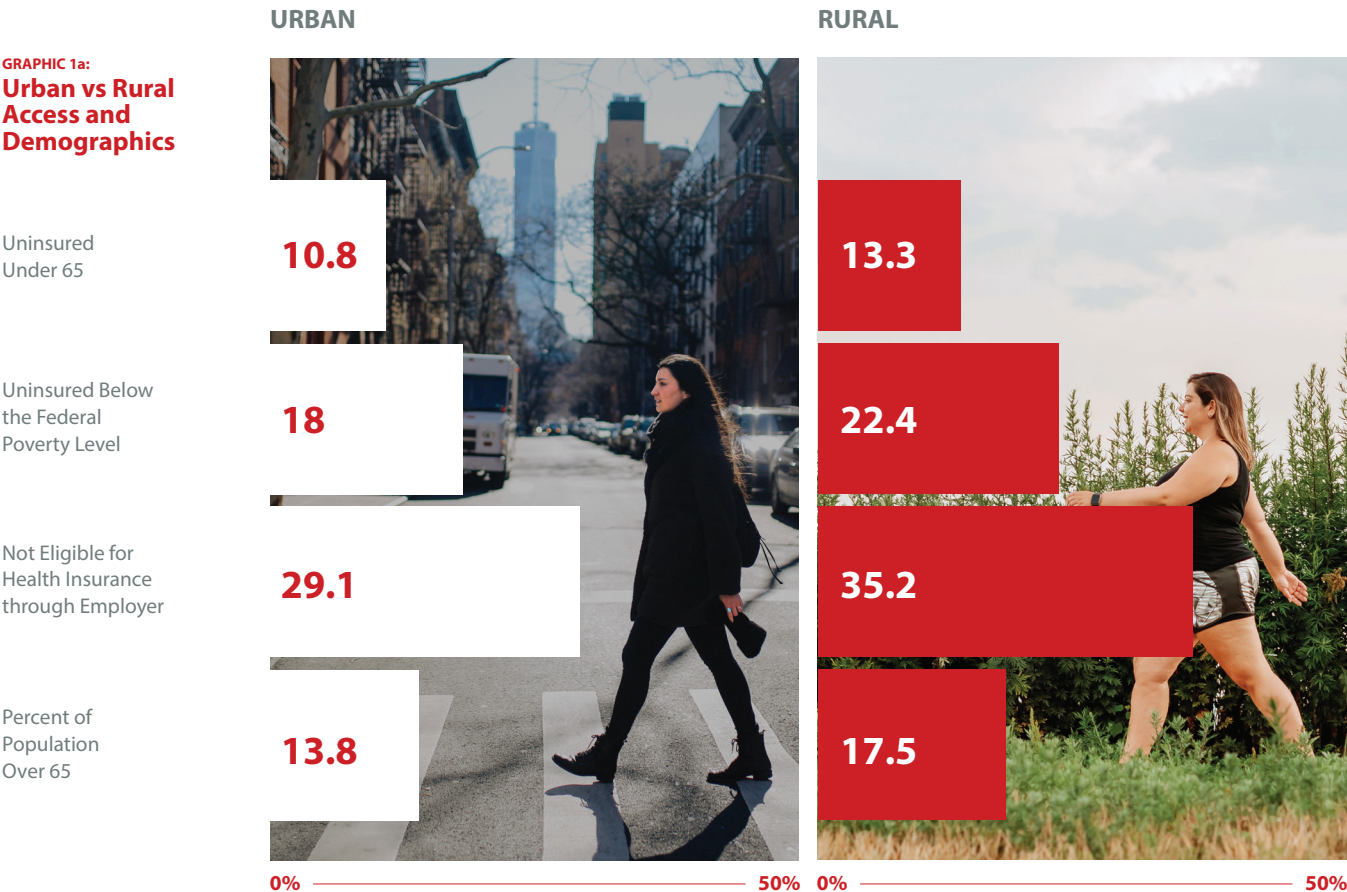
What is Healthcare Equity?

According to the Centers for Medicare and Medicaid Services (CMS), health equity is defined as “the attainment of the highest level of health for all people, where everyone has a fair and just opportunity to attain their optimal health regardless of race, ethnicity, disability, sexual orientation, gender identity, socioeconomic status, geography, preferred language, or other factors that affect access to care and health outcomes.”¹ CMS has made health equity one of five strategic pillars in creating a health system that achieves equitable outcomes through high-quality, affordable, patient-centered care.

Why Healthcare Equity Matters

Historically, the medically underserved, comprising five percent (5%) of Americans, have accounted for nearly fifty-five percent (55%) of healthcare spending in the United States.² These populations in rural and urban areas experience limited access to reliable health services and face distinct challenges affecting health outcomes and mortality.

GRAPHIC 1a:
Urban vs Rural
Access and
Demographics



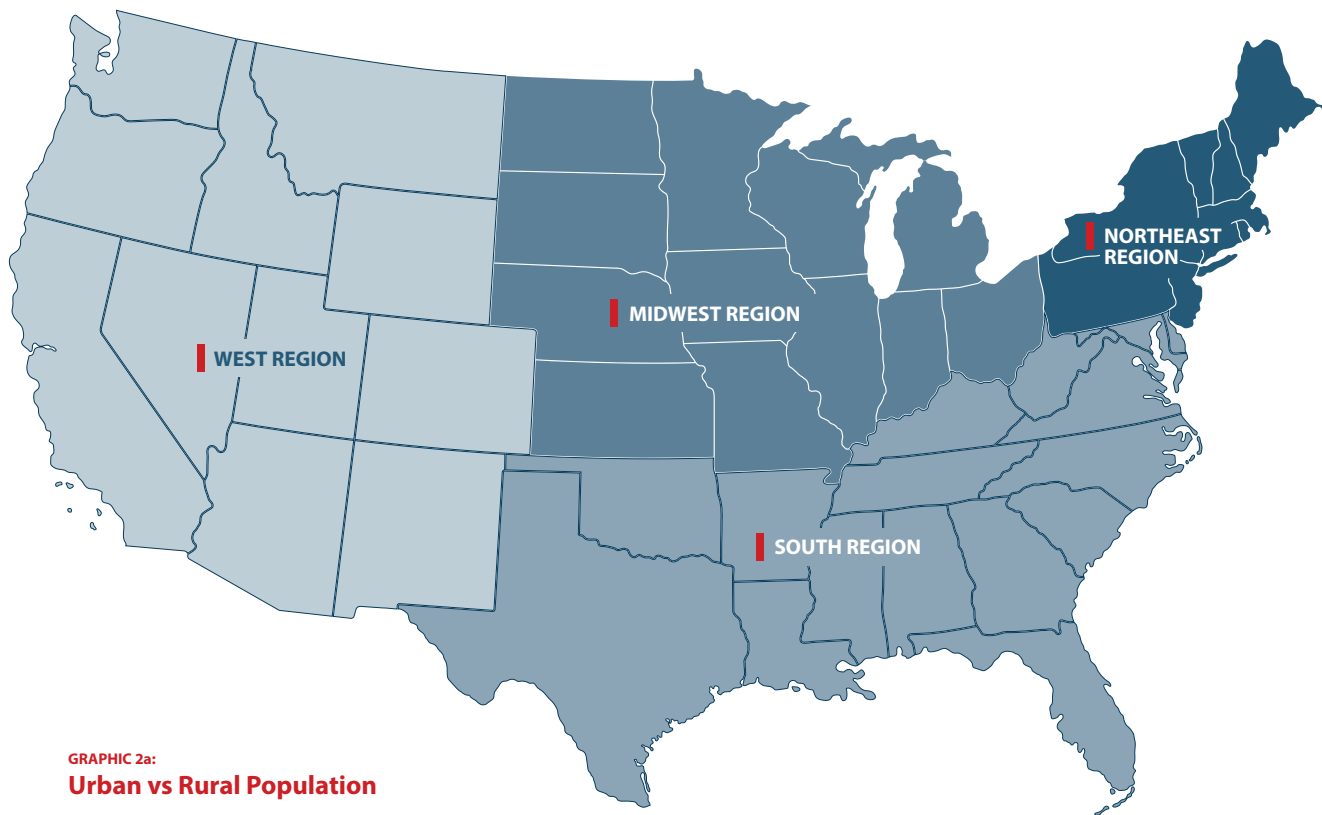
When vulnerable populations lack or lose access to healthcare services, a cascading effect takes place. The closure of health facilities in these areas leads to residents seeking care outside their communities, straining hospital emergency rooms and causing ambulances to redirect to different facilities. Decreased revenue stems from higher rates of uninsured and vulnerable populations resorting to emergency rooms for medical attention. This surge in hospital occupancy rates subsequently delays scheduled inpatient surgeries, disrupting the seamless continuum of care in the local community.

When care is inaccessible and distributed unequally, the consequences impact everyone. Not only are individuals in underserved communities denied the essential care they need, but the lack of availability erodes the fabric of our collective medical care. Simply put, inequitable access to health services leads to unequal healthcare for everyone.

Healthcare Equity: Urban versus Rural Communities

According to the Cecil G. Sheps Center for Health Services Research at The University of North Carolina – Chapel Hill, 136 rural hospitals closed between 2010 – 2021. Today, roughly a little over 600 rural hospitals, or thirty percent (30%), remain at risk of closing.³ Rural areas experience far greater socioeconomic challenges than urban areas. In rural areas, populations are often shrinking or stable, with a higher proportion of Medicare and Medicaid patients. These regions also contend with patients who tend to be sicker and challenges in staffing, leading to increased financial strain. To sustain operations, rural facilities frequently resort to contract labor, resulting in costs that surpass those in urban settings.

While faced with their unique set of challenges, urban facilities have greater access to financial resources at city and county levels that provide support to economically diverse and challenged populations. Their ability to adapt to shifts within the urban landscape is greater than those within rural communities. Urban areas provide greater access to labor, specialty care and physicians. For many rural care sites, physician recruitment, addressing labor and staffing issues to support basic healthcare services comes at a premium.



As urbanization increases, an older, sicker and poorer population remains in rural America

The South and Northeast saw large shifts from rural to urban population

	WEST REGION	MIDWEST REGION	NORTHEAST REGION	SOUTH REGION
Urban	↑4% 86% to 90%	↑4% 72% to 76%	↑6% 79% to 85%	↑7% 69% to 76%
Rural	↓4% 14% to 10%	↓4% 28% to 24%	↓6% 21% to 15%	↓7% 31% to 24%

The Emergence of Healthcare Deserts

The fallout from the COVID-19 pandemic has taken a greater toll on underserved communities and providers within rural settings. There's been a significant increase in healthcare deserts across the United States, with many rural facilities facing financial collapse, reaching levels not seen since the start of Medicare and Medicaid.

Hospital closures within rural settings can have a profound impact on local communities. Obtaining essential care becomes increasingly difficult, frequently requiring patients to travel great distances to obtain the level of care they need. In the event of an emergency, the distance and time to acute care services markedly influence patient outcomes. Additionally, follow-up care and access to specialists can prove to be just as difficult. This situation is compounded by transportation limitations and restricted access to public transport, creating a significant barrier to wellness. Consequently, this sector grapples with the ongoing challenge of achieving equity in healthcare.

GRAPHIC 3a:

**Rural Hospital Closures
Jeopardize Access to Care**

136

closures from 2010 - 2020

19

closures in 2020 alone, the most
of any year in that decade

74%

of closures happened in states where
medicaid expansion was not in place or
had been in place for less than a year

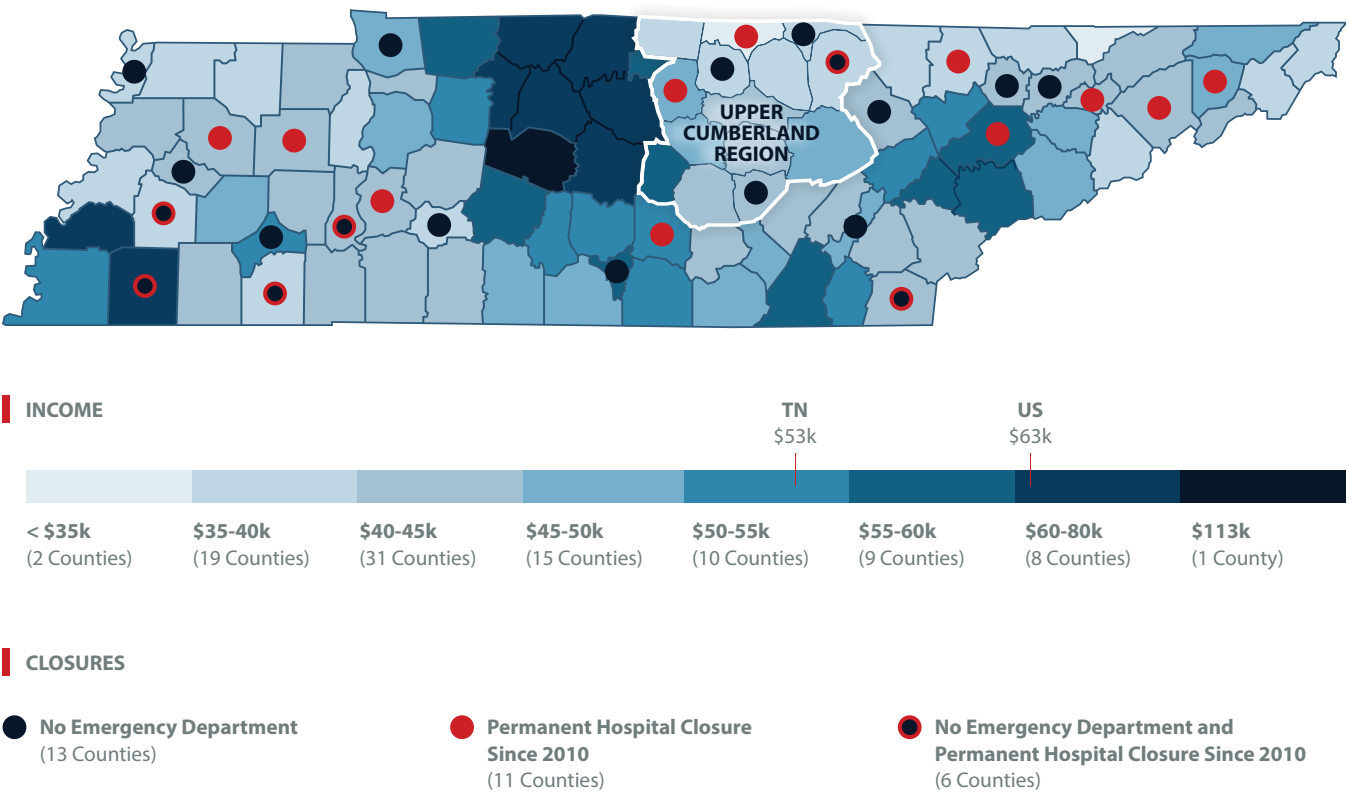
Upper Cumberland Region of Tennessee: An Emerging Healthcare Desert

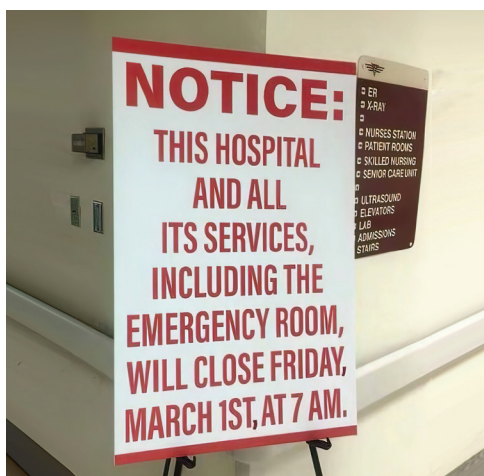
Tennessee leads the nation in per capita hospital closures, with many of them located in rural areas.⁴ Additionally, 75% of Tennessee’s remaining essential hospitals in rural areas are at risk of closure.⁵ This alarming statistic leaves countless rural residents grappling with formidable barriers to accessing essential healthcare services.

The Upper Cumberland Region of Tennessee, encompassing Cannon, Clay, Cumberland, Dekalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Van Buren, Warren and White counties, is home to approximately 350,000 residents.^{6,7} This vast rural area struggles with distinctive healthcare challenges, which have intensified due to a recent hospital closure.

GRAPHIC 4a:
Median Household Incomes and Hospital Closures in Tennessee

This chart illustrates the link between hospital closures and socioeconomics. Over one forth of rural Tennessee counties do not have a hospital, and almost half of the remaining rural hospitals left in Tennessee are currently at risk of closing.





Sign posted at Cumberland River Hospital announcing their imminent closure.

Cumberland River Hospital, located in Clay County on the Tennessee/Kentucky border, provided vital emergency and primary care, specialized medical services and surgical interventions such as orthopedics, urology and general surgery.

The hospital faced closure on two occasions, the first in 2019. Following its initial closure, the institution changed ownership, reopening under Mr. Johnny Presley in 2020. Mr. Presley had plans to incorporate cardiology and oncology offerings into the hospital's service portfolio, only to cease operations permanently after a brief five-month period. Several factors caused Cumberland River Hospital to close, including staffing shortages and challenges in securing vital financial support and state grants.

With this closure and only one additional acute care hospital in the region, Cookeville Regional Medical Center (CRMC) serves as a vital lifeline for the Upper Cumberland Region of Tennessee and is the region's only hospital with a fixed PET/CT scanner.⁸ While Cookeville serves as an urban center boasting a university and hospital, the surrounding rural areas encounter distinct challenges.

For example, oncology care presents a significant challenge for rural populations, and hospital closures exacerbate existing healthcare disparities, leaving patients struggling to access timely, quality healthcare.

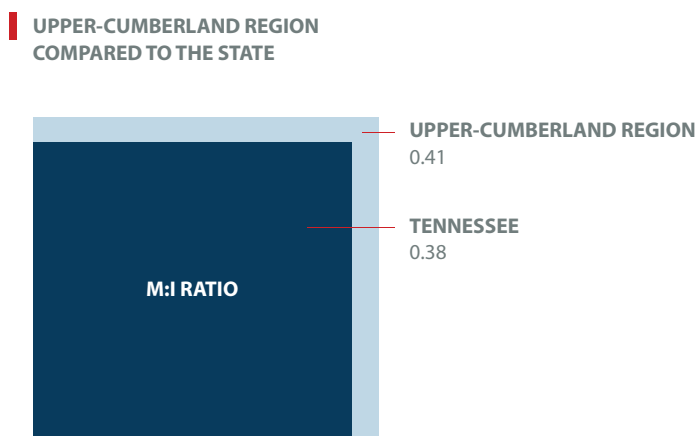
The Upper Cumberland Region illustrates this gap, facing higher cancer rates compared to both the rest of the state and its more urban neighbor, the Mid-Cumberland region, which encompasses Nashville, TN. Their alarming mortality/incidence ratio underscores the urgency of the situation.⁷

GRAPHIC 5a:

The Mortality to Incident ratio is highest in the Upper Cumberland Region

The mortality-to-incidence ratio is a population-based indicator of survival. Cancer Incidence is defined as the number of new cancers diagnosed in the population at risk. Cancer Mortality rate is defined as the number of deaths due to cancer as the underlying cause of death in a specified at-risk population during a given time period, usually expressed as the number of deaths due to cancer per 100,000 persons at risk.

TOTAL POPULATION	M:I RATIO
TENNESSEE	0.38
East Region	0.37
Mid-Cumberland Region	0.36
Northeast Region	0.38
Northwest Region	0.40
South Central Region	0.39
Southeast Region	0.37
Southwest Region	0.39
Upper-Cumberland Region	0.41



Empowering Cookeville Regional Medical Center to Rise to the Challenge

Amidst challenges to care access for rural oncology patients, CRMC has emerged at the forefront of Molecular Imaging services within the Upper Cumberland Region. Only two counties within this vast area offer these critical services, resulting in only 50% of patients receiving a PET scan in their home county.⁶ This highlights CRMC's dedication to ensuring health equity.

CRMC's exclusive fixed PET/CT scanner, along with Canon Medical's advanced digital PET technology, puts the medical center in a unique position to drive the transformative shift toward health equity. This technology has elevated CRMC's standard of care to new heights.

Bringing the latest digital PET technology to the region puts CRMC on par with the quality of care offered only in larger urban areas of Tennessee. Their digital PET/CT is one of only six digital PET/CTs⁹ in the state and creates the opportunity for residents in the Upper Cumberland region to access the same high-end technology of larger cities.

GRAPHIC 6a:

Upper Cumberland Region 2020 Patient Access to PET/CT

Because of the scarcity and rural nature of the Upper Cumberland region of Tennessee, only half of the patients who required a PET/CT could receive care in the county they lived in.

866

received PET/CT in county
lived in

1621

traveled outside of county
to get a PET/CT



The Impact of Cartesion Prime Digital PET/CT at Cookeville Regional Medical Center

Considering CRMC's slim profit margin, any scanner they chose had to be used until it reached its end of life. The Canon Cartesion Prime Digital PET/CT offered them a fully digital, true time-of-flight system, enabling faster scans with reduced radiation levels, and enhancing patient comfort and safety. The system also came with unique features not found in scanners from other vendors.

Without Canon, CRMC would need to make do with older technology at a higher cost with pricier full-service contracts and risk increased operating costs and earlier equipment replacement. The Canon Cartesion Prime Digital PET/CT enabled CMRC to expand its Oncology program and include Cardiac PET in its services. Additionally, CMRC noted that with the Canon system, CMRC patients had no reason to travel to Knoxville, Nashville, or Chattanooga for equivalent care as they may have to otherwise.

Ultimately, using the Canon system led to better care for CRMC patients.

■ “Improved diagnosis due to a higher quality scan resulted in earlier and better treatment for patients. The speed of the system also enabled us to increase our patient volume, so individuals don’t have to wait for an open slot for days or weeks.”

— **L. Scott McKoin**, Supervisor Nuclear Medicine & PET/CT, Radiation Safety Officer, Cookeville Regional Medical Center, Cookeville, TN.

Creating Healthcare Equity for Everyone in Medical Imaging

Standard of care is a foundational concept in the pursuit of achieving equitable healthcare in all communities and should serve as a benchmark for both medical providers and equipment manufacturers to ensure patients receive appropriate and high-quality treatment. However, this is not a widely adopted philosophy in medical imaging today.

While other vendors base health equity primarily on having access to care, Canon Medical believes that having access to the same quality of care regardless of location, age, ethnicity, or financial status truly represents health equity. To further that end, removing what has been traditionally financial barriers to achieving the same quality of care is another way healthcare vendors can participate with providers in creating healthcare equity for all.

■ “When it comes to care standardization in radiology, the goal is to have the same high level of image quality, protocol and diagnostic outcomes in a rural setting as in a center of excellence or academic medical center.”

— **Accessible Care:** Challenges and Opportunities Related to Radiology Services in Rural Areas Radiology Today¹⁰

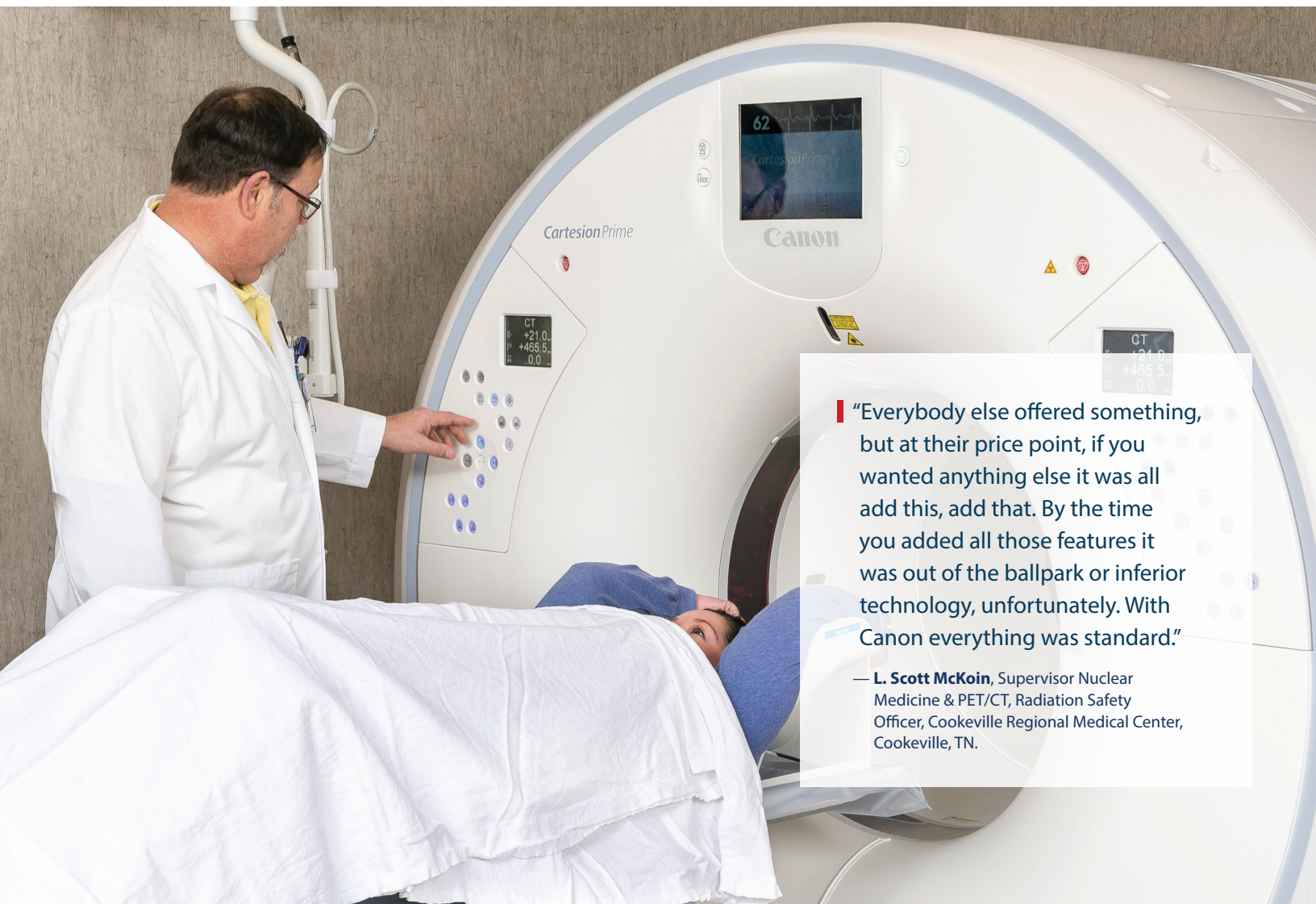
■ “Many health care resources are not proportionately distributed to sufficiently meet the needs of vulnerable populations.”

— **Equality is Not Fair:** Imaging and Imagining the Road to Health Equity¹¹

How Canon Medical Supports Healthcare Equity in CRMC's Community

CRMC has prioritized the right equipment manufacturer to support its mission to promote health equity. They understand that equal access to healthcare hinges on having the right tools and technologies to address the unique needs of each hospital and its respective communities. By choosing a partner like Canon Medical Systems, CRMC works to guarantee every patient, regardless of their background or situation, receives top-tier care.

This strategic approach in the procurement process not only leads to better patient outcomes but also strengthens their commitment to narrowing healthcare disparities in the supported rural communities. Canon Medical Systems distinguishes itself as a distinctive partner in the drive for health equity by making the standard of care genuinely standard without the extra cost of add-ons. By including these crucial technologies and tools as standards, healthcare providers can administer fair care, irrespective of location or available resources, creating a more inclusive and accessible healthcare environment.



“Everybody else offered something, but at their price point, if you wanted anything else it was all add this, add that. By the time you added all those features it was out of the ballpark or inferior technology, unfortunately. With Canon everything was standard.”

— **L. Scott McKoin**, Supervisor Nuclear Medicine & PET/CT, Radiation Safety Officer, Cookeville Regional Medical Center, Cookeville, TN.

Creating a Path to More Equitable Care by Ensuring Access to Standard Technologies

At Canon Medical, we are committed to your success. We believe in delivering innovative solutions that empower your business and improve patient outcomes. Our focus is on enhancing accessibility, cross-platform availability and providing patient-focused solutions that make a meaningful impact. Because meaningful innovation is at the heart of what we do, we believe in elevating the standard on our imaging products to make technologies and features that become part of routine clinical practice and expand access to care.

Technologies like Time-of-Flight are standard on Canon Medical PET/CTs due to its ability to improve image quality and reduce scan times or optimize injected dose.

Canon Medical provides standard design features in our CT portfolio, like high-capacity beds up to 650 lbs. and large 78cm bores. This creates more access to care for larger patients by removing the financial barriers that could cause these patients not to be served because a provider didn't purchase them.

With built-in acoustic noise reduction to help MR patients better tolerate their exams as part of every MR configuration, Canon Medical is helping to ensure more patients can complete the procedures they need.

By including features and technologies as standard, we empower medical practitioners to provide the highest level of care without compromising on quality or efficiency. This approach reflects our commitment to advancing healthcare and improving patient outcomes by delivering imaging solutions and services that are equal and accessible to all, fostering innovation, and setting a higher standard in the medical imaging community.

At Canon Medical, we believe that together, we can strive to transform patient care pathways by eliminating barriers to support every healthcare facility's ability to provide the same quality imaging solutions, regardless of size or budget.



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The clinical results described are the experience of the individual. Results may vary due to clinical setting, patient presentation and other factors.

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