2021 ACCC INNOVATOR AWARD
ASSOCIATION OF COMMUNITY CANCER CENTERS

Implementing a Transportation Hub

A Holistic Approach to a Systemic Problem

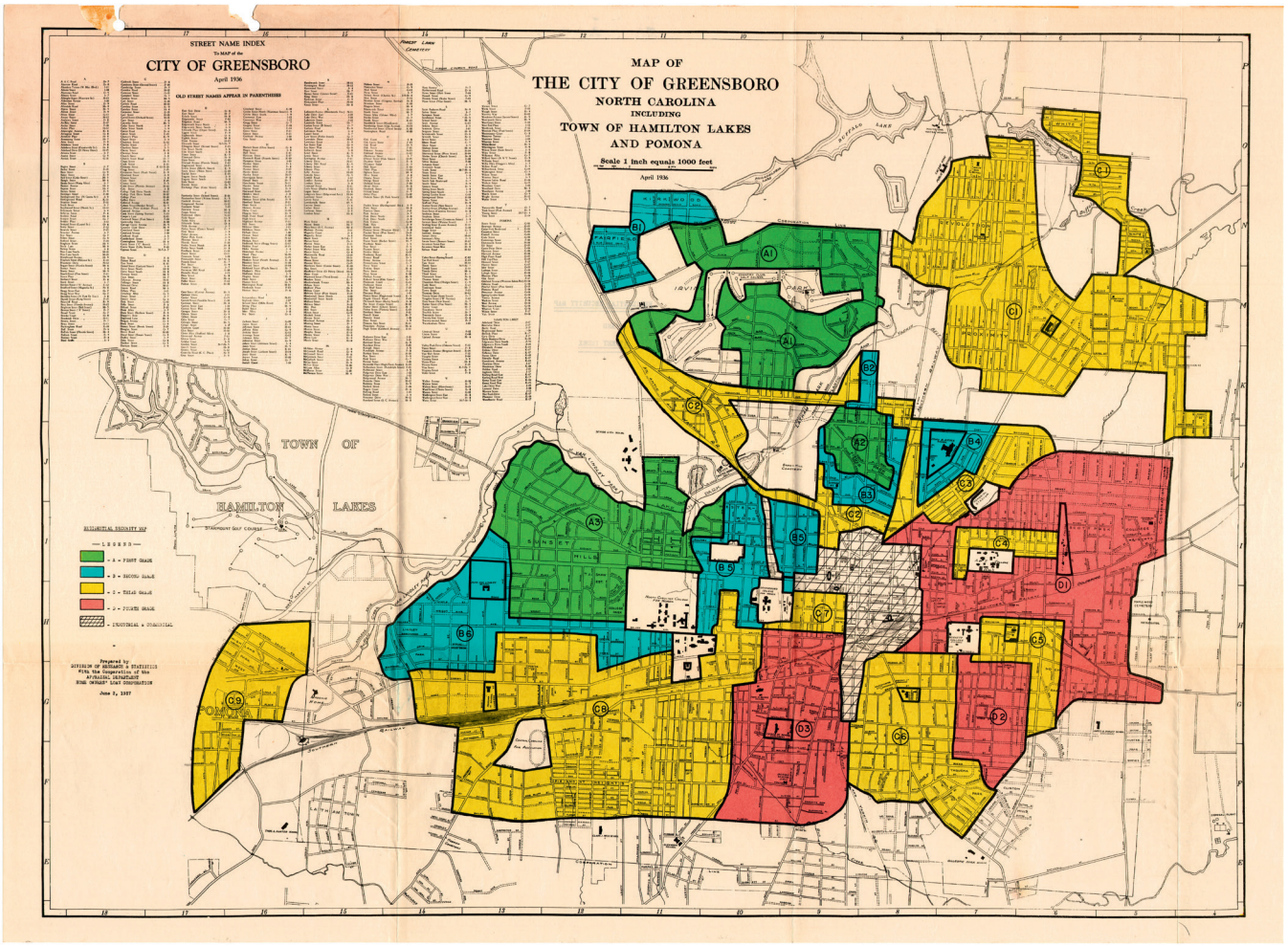
BY RACHEL MARQUEZ, BS, MPH

Editor's Note: In this edition of *Oncology Issues*, 2021-2022 Association of Community Cancer Centers President Krista Nelson, MSW, LCSW, OSW-C, FAOSW, announced her President's Theme: "Real-World Lessons from COVID-19: Driving Oncology Care Forward." One of the key lessons learned is that health equity and social justice are critical drivers of quality cancer care delivery. Although cancer incidence and mortality overall are declining in the United States, certain underserved patient populations continue to be disproportionately impacted by certain cancers. To help ensure equitable access and quality cancer care for *all* patients—regardless of race, ethnicity, age, gender identity, income level, sexual orientation, and/or geographic region—the Association of Community Cancer Centers is shining a spotlight on pioneering organizations, like Cone Health below, that are moving the needle on health equity.

In Greensboro, N.C., there is a stark divide between those who have access to resources and those who do not. Like many other metropolitan cities, Greensboro has historically been divided and segregated along racial lines. To this day, the southeast portion of the city reflects the original outlines of red-lined areas (i.e., those declared as hazardous and unsuitable for government investment). This area continues to be devoid of resources and is predominately home to Black individuals (Figure 1, page 32).[1] Residents of these areas are three times more likely to suffer from adverse health outcomes due to chronic disease, are 70 percent less likely to have higher than a high school education, and live roughly 18 years fewer than their White counterparts only a few miles away.[2]

In our deep dive into the disparate outcomes experienced by our patients, several factors continued to surface. Generally, these patients were part of a racial minority group, had a low-socio-economic background (or were living in poverty), and had a high school education or less.

Figure 1. Home Owners' Loan Corporation Historical Redlining Map of Greensboro, N.C.[1]



Additionally, Greensboro is the site of the famous 1960 sit-ins, notably the Woolworth lunch counter sit-in.[3] These sit-ins marked an important milestone in the Civil Rights Movement and were a catalyst for many of the other sit-ins and peaceful protests that took place throughout the South.

What is lesser known about Greensboro is the prominent role that the city and the Moses H. Cone Memorial Hospital played in the desegregation of healthcare. In 1962, George Simkins, Jr., a Greensboro dentist, Alvin Blount, Jr., MD, a physician, and seven other black dentists, physicians, and patients brought forward a lawsuit against Moses H. Cone Memorial Hospital claiming that they had been denied "the admission of physicians and dentists to hospital staff privileges, and the admission of patients to hospital facilities, on the basis of race."[4] The District Court dismissed the suit, *Simkins v. Moses H. Cone Memorial Hospital*, as being out of the purview of state and federal government. In November 1963, the case went to U.S. Court of Appeals, Fourth Circuit, which ruled three to two that "separate but equal" racial segregation in publicly funded hospitals violates equal protection under the U.S. Constitution.[5] This decision marked the first time that federal courts applied the Equal Protection Clause of the Fourteenth Amendment to prohibit racial discrimination by a private entity. After the U.S. Supreme Court refused to hear an appeal, the decision gave birth to a movement to desegregate hospitals built with federal funds throughout the South.

We Are Right Here with You

In 2017 Cone Health—a comprehensive healthcare network located in Greensboro—launched its vision for a "bold new future"—a future where the tradition of health and well-being is woven into the fabric of its communities. Cone Health also shared a brand promise with its customers to be "right here with" them through every encounter they have with the health system.

To fulfill this promise, we had to face reality—despite various awards for patient outcomes and high-quality care, Cone Health had not achieved health equity.

To identify and then address disparities, we shifted our attention from the 90 percent of patients who reported improvement of outcomes to the 10 percent of patients who did not see improvement in outcomes. Our new norm: an intentional focus on eliminating healthcare disparities throughout the organization. Cone Health CEO Terry Akin champions our diversity, equity, and inclusion efforts. This sets a tone throughout the organization that we always want to achieve more, continuously improve, and ensure that no patient is left behind. Additionally, COO Mary Jo Cagle, MD, leads our continuum of care work, which includes health equity, so that in every patient interaction we connect healthcare to well-being.

Social Determinants of Health and Navigation

In our deep dive into the disparate outcomes experienced by our patients, several factors continued to surface. Generally, these patients were part of a racial minority group, had a low-socio-economic background (or were living in poverty), and had a high school education or less. These social determinants of health were more accurate indicators of a patient's ability to experience wellness than the quality of care they received at Cone Health.

As value-based healthcare transitions to the outpatient setting, these disparate outcomes are fueled by patients who now bear the burden of navigating the complex outpatient healthcare system. Patients with cancer face additional challenges with this disease—and its short- and long-term side effects—and its complex treatment regimens.

The staff of Cone Health Cancer Center at Wesley Long are no strangers to helping patients navigate their social determinants of health. Cone Health social workers, care navigators, and nursing staff are trained and equipped to identify and/or refer patients to a fragmented infrastructure of potential solutions—fragmented because there is not one solution that fits every patient. Rather, team members often must navigate four, five, and six different solutions to meet our patients' needs. Patients experiencing food insecurity may be referred to a local food bank, given a gift card for groceries, or connected with a local nonprofit that provides meals. Patients experiencing transportation issues may receive a bus pass or a taxi voucher or, depending on the circumstances and number of treatment visits, a gas card to alleviate the financial burden of traveling to every appointment. These examples illustrate the reality that our staff spends more time identifying and navigating potential solutions than we do closing gaps to care. And, of course, these staff efforts come with costs that the healthcare system must assume. It is a price that Cone Health is willing to pay to help increase access and improve outcomes for its patients. Unfortunately, these services and the expenses they incur do not have a clearly defined value proposition and are therefore not reimbursed by payers—despite the obvious patient benefits.

Barriers to Radiation Oncology Treatment

Due to the challenges associated with an extended daily treatment regimen and the navigation of available resources, a certain level of treatment noncompliance was expected and ultimately accepted. Labeling patients as "non-compliant" or "difficult" is a norm that many of us are unwilling to admit exists in our organizations. Patients are blamed for their inability to continue a prescribed treatment plan more often than any of us in healthcare want to admit. The truth is, this inability to comply is not only a frustration for providers, because it means last-minute cancellations and appointment no-shows, but also for patients, because delays and interruptions in radiation treatment can negatively impact an individual's ability to control the disease.

Our region has a limited number of radiotherapy facilities. In some communities, all patients are served by a single radiotherapy site. Cone Health operates one of the busiest radiation treatment facilities in North Carolina, which typically treats more than 120 patients a day with four linear accelerators. We bring in patients from a five-county service area and treat an economically and racially diverse population. Though we are certified by the American College of Radiology as a top-performing radiation oncology department, none of our current American College of Radiology quality-of-care metrics address treatment compliance or disparities of care. Tragically, what this means is that health disparities will continue to flourish despite our best efforts, simply because we lack an understanding of the complexities to this problem.

Patient Case Study Part 1: Pre-Transportation Hub Implementation

Ms. Emma is an 84-year-old Black woman with a significant family history of breast cancer. Despite the widespread nature of the disease throughout her family, Ms. Emma thought that if she were going to get it, it would have happened by now. Then she received the news: stage 3 breast cancer and treatment needed immediately.

Her treatment regimen called for a lumpectomy, followed by a daily regimen of radiation therapy, and later several rounds of chemotherapy. Ms. Emma tried to process the simple logistics of getting to and from her appointments each day. She left the cancer center discouraged, not just because she may not complete treatment but because she may not even be able to start treatment.

Ms. Emma is fortunate to own her own motor vehicle. Although she might not be able to accurately predict the costs associated with traveling to the cancer center every day, she thought she could make it work. However, Ms. Emma is disabled in one foot. She cannot operate a vehicle properly and knew that driving back and forth to so many appointments would not be a viable option.

Ms. Emma has eight children—a large, supportive family. Although none of them reside in North Carolina, she lives with her 20-year-old granddaughter. The granddaughter commutes an hour each way for work Monday through Friday, and Ms.

Ms. Emma and Allison Moore, transportation coordinator, at Westley Long Cancer Center.

Emma knew that she could not ask her granddaughter to take time off from work to drive her to her medical appointments.

Finally, Ms. Emma thought about taking the bus to her appointments. The nearest bus stop to her home is more than two miles away and, because her of disability, walking would be difficult. Worse, the bus ride from her home to the cancer center is more than 1.5 hours each way. Given the treatment side effects she could experience, the bus did not seem to be a feasible option either. Ms. Emma eventually decided that she had lived a good life and to accept her prognosis and forgo treatment.

A healthcare system that is set up to drive value for the entire healthcare system falls short of delivering whole-person care. When value-based care tips to the value side, all too often patients like Ms. Emma fall through the cracks. No gas card or bus pass could provide relief for her situation.

Understanding the Transportation Problem

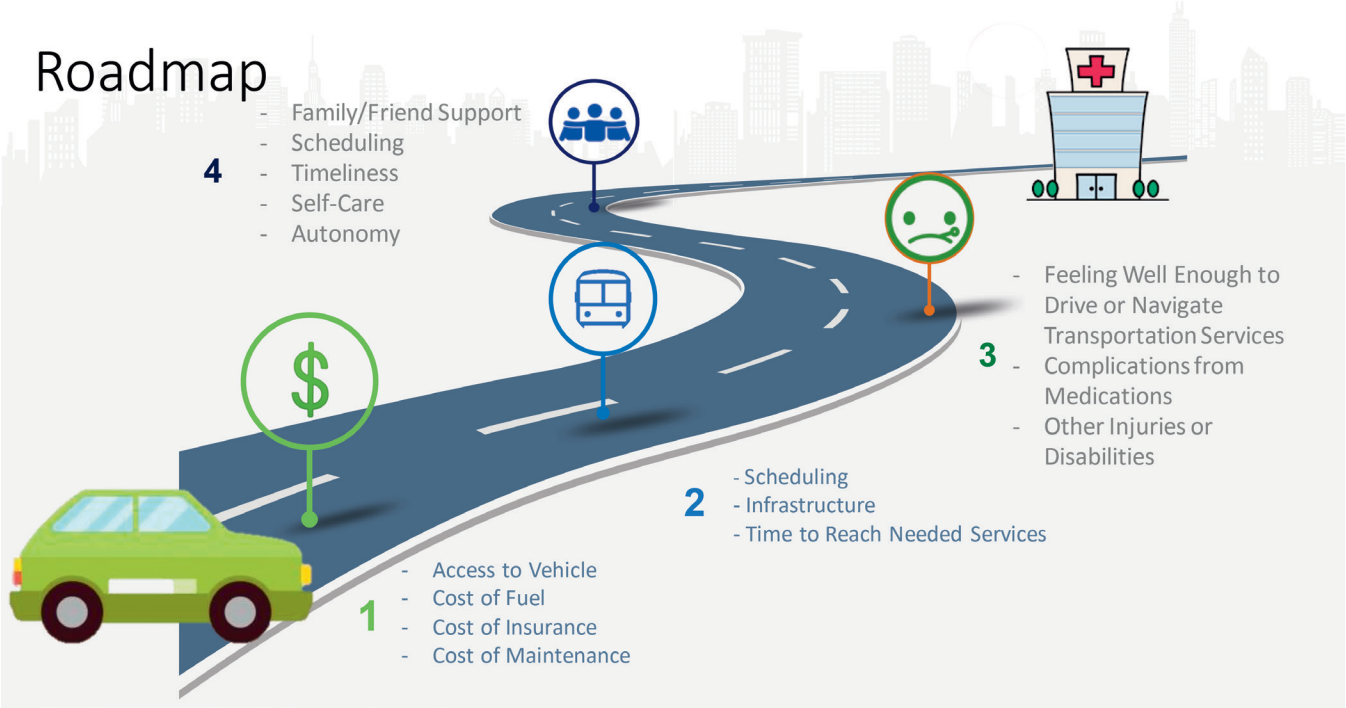
Patients with cancer who face transportation barriers often find themselves at a crossroads: They must either continue to piece together various forms of assistance to try to complete a treatment regimen and protocol or throw in the towel altogether. In the past, my team addressed patient compliance issues with a standard mixture of support (gas cards, bus vouchers, etc.) and encouragement. We referred patients to our program's social workers and/or care managers and hoped that they could assist the patient in need. Today we understand that these efforts are not enough and that we must do better.

Instead of reacting to patients' needs after they fall out of compliance with their specified treatment, we pledged to proactively offer and find transportation assistance that meets *all* patient needs. Creating a system like this required us to once again do a deep dive to understand the scope of the problem we were trying to solve. We found that transportation barriers can be bucketed into four major areas (Figure 2, right):

- ***Cost of Ownership.*** The first roadblock to consider is the financial barrier to transportation. Do patients own or have access to a motor vehicle? Can they afford to put fuel in that vehicle? Is the vehicle insured and in good working order? Finally, is the patient able to obtain a license to operate a vehicle?
- ***Transportation Infrastructure.*** Greensboro is a large metropolitan city with a well-run public bus service. Unfortunately, Greensboro also has a large rural area that is not served by the city bus system. Many bus stops are in areas without sidewalks or shelters and most of these unsheltered stops are in lower socio-economic communities where the likelihood of needing bus service is greater. On one street in particular, individuals must cross four lanes of busy traffic without a crosswalk to get to the nearest bus stop. Additionally, navigation from one side of the city to the other can take about 90 minutes, which is a luxury that many patients do not have. As noted earlier, we serve individuals from a five-county area. Our closest surrounding counties do not have a robust public transportation infrastructure within their own county, let alone across county lines.
- ***Wellness.*** Simply offering patients gas cards and bus passes can negate the importance of this category. Instead, we need to treat the whole patient by asking questions like: Do patients feel well enough to drive or to navigate the bus system? Do patients have a disability that would prevent them from doing so? Are patients taking medications that alter their mental and physical abilities?
- ***Support.*** Finally, when all else fails, we look to patients' support systems. Maybe a friend or family member can help this individual access life-saving treatment. And so, we ask, "Is there anyone that can bring you to your appointment?" All the while not knowing the burden that "finding someone" can place on the patient—a burden that sometimes is more detrimental than the cancer itself.

After understanding the complexities of these transportation barriers, we set out to map a solution. We also wanted to ensure that patients would not have to voice concerns or miss a treatment before they received assistance.

Figure 2. Cone Health Identified Transportation Barriers



A Data-Driven Solution

Knowing the needs that would have to be met, the final piece of the puzzle was to understand which patients were being affected the most by transportation barriers, resulting in missed or rescheduled appointments. Working with our enterprise analytics team, we gathered information on these patients. What we found should have come as no surprise, yet we were still shocked.

Earlier, I noted the segregated nature of our community. Individuals who live in the southeast portion of Greensboro experience poorer outcomes than in any other area of the city. The ZIP codes for that area are 27405 and 27406. Our data showed that individuals seeking care at our cancer center who reside in either 27405 or 27406 have a 12 percent and 15 percent no-show rate, respectively, compared to the average of 2.9 percent across all ZIP codes serviced by our cancer program (Figure 3, page 36). Other demographic data were available on patients who missed appointments. So, next, we mapped out our no-shows by race, ethnicity, payer, ZIP code, time of day, and appointment type.

Piloting Our Transportation Hub

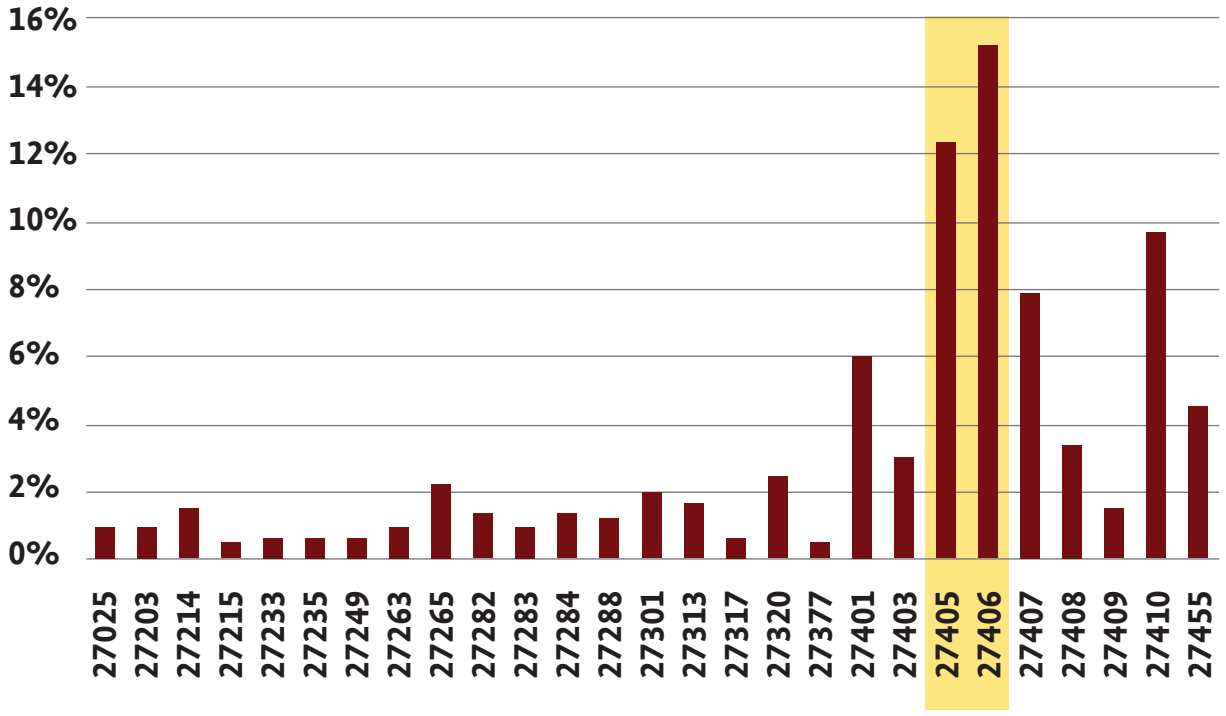
Leveraging the information we collected on transportation barriers and the patients most affected by these barriers, we implemented our Transportation Hub pilot program. To be proactive instead of reactive, we developed and implemented a screening tool to initiate transportation discussions with patients *before* "non-compliance" with treatment became an issue. The screening tool includes the following three questions:

1. In the last month, have you ever had to go without healthcare because you didn't have a way to get there?
2. In the last 12 months, has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?
3. Would you like to receive assistance with this need?

The pilot program used an online transportation platform that coordinated rides across rideshare services, like Uber and Lyft, non-emergency medical transportation providers, and wheelchair accessible vehicles. Rides can be requested immediately, by appointment time, or by pick-up time. Rides are offered proactively and free of charge to:

- All patients coming from a 27405 or 27406 ZIP code.
- Patients who express transportation needs.
- Patients who screen positively on our social determinants of health transportation screening.

Figure 3. Radiation Oncology Patient No-Show Rate by ZIP Code



Breaking Down Barriers

The greatest implementation barrier to our Transportation Hub centered around risk and compliance. Given the complexities of rideshare and transportation services, we needed to ensure our patients' safety and lower the risk for the cancer program. Specifically, the compliance and risk team outlined the following risks the cancer program faced:

- Personal injury liability if a patient is hurt during the ride.
- Vicarious liability for the selected ridesharing service provider.
- Failure to adequately protect the patient.
- Regulatory violations of Stark laws and anti-kickback statutes.
- Reputational damage.
- Health Insurance Portability and Accountability Act violations and/or data breach of personal health information.
- Patient assault.

Our solutions included implementing Health Insurance Portability and Accountability Act and liability release waivers and developing and disseminating a patient education tool with rider safety tips that effectively communicates potential risks to patients (Figure 4, right).

Federal Stark laws and anti-kickback statutes pose potential problems for cancer programs that offer free services to patients. Under these laws, healthcare systems are not allowed to use these to "induce" patients to receive services at a given facility. Offering free transportation can be seen as such an inducement and, thus, violate these federal laws. Thankfully, our compliance team identified a safe harbor to the anti-kickback statute. Specifically, "This final regulation maintains the proposed 25-mile distance for patients in an urban area but expands the definition of 'local' to 50 miles for patients in a rural area, as defined in this rule." Cone Health drafted a policy to include the safe harbor language and ensured that any transportation assistance provided to patients was within a 25-mile radius in an urban area and a 50-mile radius in a rural area.

Transportation Hub Pilot Results

During a four-month period (June to September 2019), 47 patients were enrolled in the pilot Transportation Hub and received a total of 419 rides. Their combined historic average no-show rate was 7 percent. The anticipated revenue loss per radiation treatment was set at $250. We used these data to calculate an opportunity cost. Specifically, our opportunity cost was calculated as the product of the no-show rate, the revenue per treatment, and the number of treatments prescribed by the physician. We recorded all transportation costs and subtracted these costs from the opportunity cost to calculate our return on investment.

Following the four-month pilot, we measured our results to ensure the sustainability of the Transportation Hub. Our data

(continued on page 38)

(continued from page 36)

were more promising than we could have hoped. Not only did offering transportation free of charge make financial sense for our cancer program, but it also improved the wellness and satisfaction of our patients with cancer. The Transportation Hub had truly moved the needle and connected healthcare, health equity, and patient well-being.

Reducing Disparities and No-Shows

The most important outcome for this pilot program was for Cone Health to live out its brand promise: to be "right there with" patients, delivering whole person care inside a value-based care framework. We wanted to ensure patient access to medical appointments and treatment—on time and without interruption. We achieved that objective.

In the four-month pilot program, overall no-show appointments for the cancer center decreased by 48 percent, from 6.1 percent to 3.2 percent. No-show incidence by ZIP code decreased for the specific, disparate ZIP codes. ZIP codes 27405 and 27406 had a 12 percent and 15 percent no-show rate, respectively, before Transportation Hub implementation. After hub implementation, no-shows dropped to 1.2 percent and 1.3 percent, respectively (Figure 5, right).

Given that 92 percent of individuals said they would *not* have been able to attend their appointment if not for the pilot program, patient feedback suggests that we are reaching our intended audience.

Increasing Revenue

Given the historic no-show rates for the patients involved in the pilot program, our cancer center was projected to lose $69,557 in revenue during that four-month period. Transportation costs for the pilot program totaled $6,166, with an average ride cost of $14.72. Therefore, we calculated our return on investment on the four-month pilot program to be $63,391.

Improving Patient Satisfaction

After each ride, patients were given a survey to rate their experience (above average, average, neutral, and below average) and asked whether they would have been able to attend their appointment that day had the ride not been provided (yes, no, unsure).

Survey data allowed us to gauge whether we were enrolling patients whose true need was, in fact, transportation. Given that 92 percent of individuals said they would *not* have been able to attend their appointment if not for the pilot program, patient feedback suggests that we are reaching our intended audience (see Figure 6, right). Additionally, the survey allowed for open responses (qualitative data), so patients could share notes about their experience. One patient wrote, "Could not have been better. Driver was excellent. When I got in the car, I was feeling that I was on my last leg; by the time I was home, I felt totally rejuvenated. Wonderful experience."

Patient Case Study Part 2: Post-Transportation Hub Implementation

In Part 1 of our case study, Ms. Emma had decided to forgo treatment due to her inability to make her daily radiation appointments. Thankfully, we reached Ms. Emma just in time. She received daily transportation to and from each of her radiation appointments. We were then fortunate enough to be alongside her as she rang the bell after completing treatment.

Like Ms. Emma, patients who need transportation assistance to make their medical appointments can get it. Because transportation assistance is now engrained in our staff as a part of patients' medical treatment protocol, patient access and treatment compliance and completion have improved. Some patients may only need one ride—when a loved one is busy or unable to assist—and others need rides for all appointments. Our goal is to now meet every transportation need and "be right there" with the individuals in our community. To date, our Transportation Hub has been in operation for more than a year and we have completed a total of 5,425 rides with an average ride cost of $14. Patients participating in the transportation program experience a less than 1 percent no-show rate; overall, no-show rates at the cancer program are holding steady at about 3 percent.

Patient satisfaction continues to be in the 90th percentile, with many citing our Transportation Hub as the reason for being able to beat their cancer.

Given the financial return on investment and ability to improve outcomes for patients, Cone Health has adopted the Transportation Hub system-wide, offering transportation assistance for patients for all types of medical encounters and appointments. OI

Rachel Marquez, BS, MPH, is a healthcare administrator at Cone Health Cancer Care in Greensboro, N.C.

References

1. Nelson RK, Winling L, Marciano R, et al. Mapping inequality. Available online at: dsl.richmond.edu/panorama/redlining/#loc=5/39.1/-94.58&text=downloads. Last accessed January 28, 2021.

2. North Carolina State Center for Health Statistics. North Carolina provisional vital statistics. Available online at: schs.dph.ncdhhs.gov/data/vital.cfm. Last accessed January 28, 2021.

3. McLaughlin N. In 1960, 4 young men sat at the Woolworth lunch counter in Downtown Greensboro. They wanted to make a "better world for all of us to live in." *Greensboro News and Record*. January 27, 2019. Available online at: greensboro.com/news/local_news/in-1960-4-young-men-sat-at-the-woolworth-lunch-counter-in-downtown-greensboro-they/article_12c03848-fb56-5b7b-a487-b60cf7af13b0.html. Last accessed January 26, 2021.

4. Thomas KK. *Simkins v. Cone*. Available online at: ncpedia.org/simkins-v-cone. Published 2006. Last accessed January 26, 2021.

5. Greensboro doctor honored as pioneer on landmark case anniversary. *Times-News*. September 13, 2016. Available online at: thetimesnews.com/news/20160913/greensboro-doctor-honored-as-pioneer-on-landmark-case-anniversary. Last accessed January 26, 2021.

Figure 5. Patient No-Show Rates Post-Transportation Hub Implementation

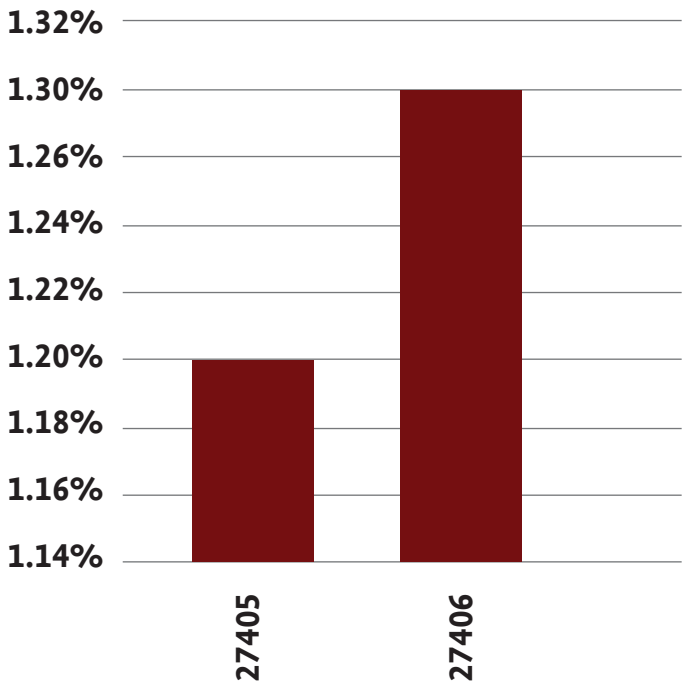


Figure 6. Patient Feedback on Transportation Hub

Question 1. How would you rate your transporation experience today?

Response	June	July	August	September	Total	%
Below Average	0	1	1	0	2	1%
Neutral	0	0	1	1	3	2%
Average	0	4	11	9	24	15%
Above Average	3	29	39	65	136	82%
	3	34	52	76	165	100%

Question 2. Would you have been able to attend your appointment today if this Cone Health program did not exist?

Response	June	July	August	September	Total	%
Yes	0	1	0	5	6	5%
Unsure	0	0	2	1	3	3%
No	2	23	32	47	104	92%
	2	24	34	53	113	100%