

Parking and Wayfinding at Duke University Health System: Our Road Map to the Optimal Patient Experience

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Executive Summary

Background: Duke is a very large medical center with a world class reputation providing excellent health care to thousands of patients annually. For patients who seek this excellent care, navigating the complex matrix of parking areas and clinics can be confusing and intimidating leading to a stressful, suboptimal experience detracting from excellent care provided. The patient experience at Duke University Medical Center is influenced by multiple domains, including transportation to the campus, parking, wayfinding to physical clinic locations, eating options, wait times, and several others, and may differ for inpatients vs. outpatients. We sought to focus on assessing the impact of parking and wayfinding on the outpatient experience in the Duke University Hospital campus.

Method: To understand the scope of the parking and wayfinding challenges at Duke, we collected data through four main sources: (1) obtained Press Ganey data on these issues, (2) held a focus group with patients from the Duke Patient Family Advisory Council, (3) toured Duke South with John Robinette to observe the issues raised by patients, and (4) met with our project sponsors to understand current efforts regarding parking and wayfinding.

Key Findings: Our findings revealed numerous challenges reported by patients, and these are detailed in Appendices 1-4. In summary, patients reported that parking is difficult to navigate due to poor signage, poor pre-visit communication regarding where to park, too few parking spots for disabled patients and frustration with the need pay for parking. Patients reported that wayfinding was challenging for many reasons including but not limited to poor signage within and around campus, inconsistent nomenclature used for clinics and buildings, poor use of maps, long distances between clinics/buildings, and disjointed pre-visit communication about visit expectations and directions.

Summary and Recommendations: Parking and wayfinding are significant deficiencies in the outpatient experience on the Duke University Hospital campus. Our main recommendations developed in concert with our stakeholders to address these deficiencies included: (1) creating consistent and better signage close to and throughout Duke's campus directing patients to the correct parking deck/clinic, (2) developing visit passports to aid patients in planning their Duke visit prior to their arrival and once they arrive, (3) installing digital information kiosks to obtain additional wayfinding guidance, and (4) developing an intuitive app to aid in wayfinding. These solutions will directly enhance the overall patient experience and should have a direct and positive impact on patient satisfaction scores, which are critical to Duke's hospital ranking and to CMS pay-for-performance measures.

Background. Patients come to a healthcare setting to seek help for illnesses, disease, or other medical conditions, and in many instances, the experience is anxiety-provoking and stressful (Ammemans, 2017). In order to fulfill our Duke Health mission of “Advancing Health Together,” it is vital to reduce the stress and anxiety associated with healthcare visits to our facilities as much as is possible so that patients and their families can have a positive experience. There are many factors that contribute to the patient experience such as the physical space (Fich, 2015), parking (Al-Qarni et al. 2013), patient and visitor amenities, and pre- and post-visit communication, among many others. At the core of the patient experience is the ability for patients and their families to reach our facility, park, and find their way to their appointments. We discovered that we have a critical patient experience issue surrounding parking and wayfinding that is crucial to address to be consistent with our mission and values. Patients want to seek care from Duke’s world-class providers, but find it difficult to navigate the complex infrastructure.

Research indicates that effective wayfinding helps people feel at ease within the environment, thereby supporting emotional wellbeing. Poor wayfinding is experienced when people become disoriented in their environment, misread wayfinding cues, or are uncertain of their direction, which can occur in unfamiliar places such as a healthcare setting (Gibson, 2009; Short et al., 2017). Not surprisingly, poor wayfinding can lead to additional stress and anxiety in an already heightened state for the patient (Morag et al., 2016). Further, poor wayfinding can lead to late arrival and clinic delays, missed appointments, and additional staff effort required to help patients find their way (Sadek, 2015). Wayfinding solutions draw from a vast body of scientific study across multiple disciplines. Well-implemented wayfinding in healthcare settings leads to improved patient satisfaction (Kaya et al., 2016), improved quality of care (Lee et al., 2020a), faster surgical start times (Lee et al., 2020b), and many other positive outcomes. These patient satisfaction scores are also a factor in CMS’ Medicare pay-for-performance program, Hospital Value-Based Purchasing Program.

Our project offers strategies to improve parking and wayfinding and patient experience. Improved patient experience translates into improvement in hospital rankings, patient satisfaction scores, fewer patient complaints, more referrals, and better patient outcomes.

Methods. Our team was provided a project related to *Patient and Staff Experience* that included a wide range of options such as wayfinding, patient parking, patient amenity services (e.g., food services, shopping experiences, waiting room amenities), and concierge staff services (e.g., scheduling personal appointments) to list a few. To begin our discovery process, we first had to narrow down the scope of the project and focus on a topic area that we believed would be most impactful on patient experience. As such, we held two brainstorming sessions with our team and our project coach, and two subsequent and separate brainstorming sessions with our project sponsors (Bryan Mallory and Mary Martin). During these sessions, we weighed the pros and cons of different projects and solicited input from our coach and executive sponsors. At the conclusion of these brainstorming sessions, we decided to pursue a project to improve patient parking and wayfinding.

During the team brainstorming sessions, we felt that it was important to establish team ground rules and set expectations to ensure that the team worked effectively and that all voices were heard. We shared our personality traits (which we learned as part of DCLP) and our strengths and weaknesses when serving as team members. During each meeting, all team members provided their input followed by respectful discussions. Because each team member brought a unique skillset to the team, we did not elect a team leader, but rather decided to leverage the strengths of each team member as it related to task responsibility. Although we were fortunate to not have any team conflicts, when scheduling conflicts arose, the rest of the team assembled to attend a meeting or perform a task, while those with a scheduling conflict would find an alternative way to contribute. It was through a cohesive team approach that we successfully completed our project.

First, we solicited Press-Ganey survey data on patient experiences from Guest Services, and these were limited to those from Duke South. See **Appendix 1** for the detailed report. In summary, patient responses were extracted for Duke South appointments using the key words “parking”, “valet”, “lost”, “direction”, and “signage.” As seen in the report, there were 429 comments related to parking and valet. Of these 429 comments, 49 were positive and the rest were mixed or negative. The major themes for the negative comments related to the complexity and accessibility of the parking decks, the fee, and that valet service is complex with a long wait. There were 82 comments related to wayfinding and only 27 were positive. The major themes for the negative comments related to difficulty navigating a complex building system, poor signage, poor directions before and during the visits, and the long distances between the different clinics. Interestingly, the majority of the 27 positive comments were related to staff being helpful in providing directions, or taking the patient to their next destination. Nonetheless, these data provide the patient perspective as it relates to parking and wayfinding.

Next, we held a focus group with members of the Duke Patient Family Advisory Council (PFAC) to better understand parking and wayfinding experiences not just at Duke South, but across the Duke Health System. In addition, the focus groups allowed us the opportunity to explore potential solutions to the parking and wayfinding issues that would be welcomed by patients. Due to the restrictions of the COVID-19 pandemic, we held this focus group via Zoom on March 19, 2020 with the support of Shannon Haney who served as our focus group facilitator. Prior to the focus group, four PFAC members were provided with survey questions developed by the team (See **Appendix 2**), of which three provided a written response. (See **Appendix 3** for compiled responses). As noted in the written responses, the patients in the advisory group had many of the same comments documented in **Appendix 1**; however they also provided clever solutions for problems identified. The patients focused on the importance of parking and wayfinding as setting the tone of the patient experience, and offered what they believed would be ideal solutions (See **Appendix 4** for notes from the focus group). We incorporated these solutions when developing our recommendations as detailed below.

In order to better understand wayfinding issues at Duke South, we requested a meeting with John Robinette, given his long administrative career with Duke Health and intimate knowledge of the facilities and institutional history. Some team members toured the facility with Mr. Robinette who provided us with a historical perspective on the evolution of our clinic spaces. In short, we came to understand that there was not a unified design/plan when Duke South clinics were created or expanded. Clinics were built based on the preferences of individuals in leadership positions, resulting in a disjointed effort with inefficient wayfinding, signage and lack of a patient centered approach to care. Mr. Robinette enlightened us with his rich knowledge of the history at Duke which we found fascinating. He informed us about failed attempts at developing a wayfinding app at Duke when we asked his opinion about “Apps” as a solution to wayfinding. Several health systems in the state (New Hanover and WakeMed) have functional wayfinding apps that patients have found useful. The apps were easy to navigate when tested by members of our team. Peers at these institutions endorsed these apps and their utility for their patients. In addition, during our tour we noted poor signage, poor wayfinding cues, maps with inconsistent nomenclature, random alphabetical arrangements for clinics and poor utilization of waiting room space.

Throughout our discovery process, we met with Bryan Mallory periodically to share what we learned and to stay abreast of current initiatives in the hospital related to parking and wayfinding. Recently, we learned that Duke has hired a consultant to develop a comprehensive wayfinding plan. Mr. Mallory shared our discovery documents and our recommendations with the consultant firm, who validated that most of our recommendations were aligned with theirs.

Risks and Alternatives. The Duke South clinic is outdated with respect to a patient centered clinic experience. Risks of inaction include dissatisfied patients leading to poorer patient satisfaction scores, negative patient comments, losing our market share to other facilities, and a negative impact in our hospital ranking. We need to be competitive with respect to clinic efficiency and deliver the standard of care expected by our patients. We have brand recognition, world class faculty and staff but without the right infrastructure cannot provide optimal patient care. Many of our local competitors have better facilities, facile wayfinding apps and better parking infrastructure that is very appealing to patients and their families. In fact, parking and wayfinding is commonly cited by patients seen by this DCLP team's physicians as a reason for seeking Duke medical services at satellite facilities, even within Durham. Optimizing the patient experience through improved parking, wayfinding and signage will result in added benefits of improved clinic efficiency, throughput and productivity, but most importantly, patients who are more satisfied with their Duke healthcare experience. Duke South location is a challenge given the limited parking options on campus. The only alternative to is to move many clinics to an offsite location. This will decongest Duke South parking garages and open up clinic spaces for specialties that need hospital based clinics such as transplant, heart failure, and others. Although Duke South was our primary focus, many of the same concerns are relevant to other Duke locations (e.g., Duke Raleigh).

Recommendation. Our core value at Duke is to care for our patients, their loved ones, and each other. The patient care experience in our opinion starts from the time a clinic appointment is made. Our **instructions for the visit** with respect to directions and wayfinding are not intuitive and have opportunities for improvement in partnership with PRMO. This is especially true for patients with complex medical problems requiring multiple visits in a single day and who need help negotiating the breadth of our hospital campus. **Visit Passports (in multiple formats)**, or carefully constructed pre-visit instructions with graphics and maps/directions, would be particularly helpful for patients with multiple coordinated appointments on the same day. **Signage** as families drive towards our campus is poor, with low or no lighting and small font size, and the parking garage nomenclature is confusing. Patients are unaware of **nomenclature** used by staff such as "Duke South" and "Duke North," and these names do not appear on any of the maps available on campus. Clear instructions for parking (including the best parking garage for the clinic visit), appropriate and consistent signage, and expansion of recently installed red light-green light system to all parking garages will save patients considerable time and energy. **Concierge service** (manned by paid employees) should be considered at the points of entry into Duke South Clinics. They can help direct patients to appropriate clinics and help them map out their clinic visit. This is especially true for patients who may be challenged by technology or are unable to use gadgets due to disabilities. **Digital information kiosks** should be prominently installed at main entry locations that patients can use to print directions, send directions to the phones and to estimate walking times to their destination. **Wayfinding** within the clinic area should be improved with appropriate signage and visual cues such as art or images, colors, etc. The specialty of the clinic should be prominently displayed in addition to the alphabet identifier. Consideration should be given to naming clinics using colloquial terms that easily make sense to patients. **Waiting areas** should be used creatively to display information about the team and their accomplishments, research opportunities for patients, disease specific educational material, and education on what to expect during the patient visit in that clinic. Development of a **comprehensive app** that interfaces with Mychart should be strongly considered to elevate the patient care experience. An intuitive app that is adopted by patients and promoted by staff will be important in providing information for patients and aid in wayfinding.

Implementing the recommendations will accomplish the following: (1) Improved patient care experience with improved patient satisfaction scores and reduced complaints, (2) improved clinic efficiency with reduced wait times, (3) improved clinic revenues associated with improved clinic efficiency, and (4) equitable care for

patients with disabilities and those with technological challenges. Taken together, implementing these improvements would have a positive impact on our hospital ranking and reputation.

Next Steps and Key Elements for Success. The list below outlines the next steps to resolve the issues surrounding parking and wayfinding. We understand that Duke has hired a consultant to address parking and wayfinding, and our recommendations (bulleted below) are consistent with theirs.

- **Parking:** improve signage, accessibility of wheelchairs or escorts, and implement red light-green light system in all parking garages that notify patrons of parking spot availability.
- **Wayfinding:** Updated maps and clear directions delivered to patients via Mychart prior to visit. Introduce visual cues, mobile apps, and other evidence-based wayfinding strategies within Duke to enable ease of finding appropriate clinics. Consistent with those strategies include improvements in **signage** within clinics/buildings and outside buildings, including better visibility from all major access roads leading to the campus, and **nomenclature** so that all clinics and buildings are appropriately and consistently represented on all maps.

In terms of the hand off to the next group of DCLP team members would be to develop a plan for improving patient experience through **Visit Passports**. This is a project for which the next DCLP team would have a real deliverable with high impact on the patient experience. A Visit Passport would contain detailed instructions via Mychart or on paper that would map out the patient's journey through multiple appointments on the same day, and that could be distributed before they arrive so they can plan their visit from the moment they leave their home to when they are departing the Duke campus. Through the use of carefully constructed instructions with graphics and maps/directions, patients would be able to navigate multiple coordinated appointments on the same day and know what to expect at those appointments. Alternative projects could include improved amenities or patient concierge services. For these projects, we would recommend that they develop a plan for improving the patient experience through improved amenities or patient concierge services. For example, we brainstormed ways to have better waiting room amenities such as mobile food/coffee carts or workstations, or improved shopping or dining experiences. In the short term, these will be limited by the COVID-19 pandemic, but medium to long term, these will aid in patients' perception of their Duke experience. We also brainstormed that a concierge service should be considered to improve the clinic experience for all patients, but especially patients with disabilities. Each of these plans can be further researched and developed.

All of these recommendations would require a significant financial commitment on the part of the Duke Health System and would take 12-18 months to complete in phases once a final plan was approved. With the hiring of a consultant in this area, Duke leadership already understands the value of improving the patient experience and the downstream implications. Positive patient experiences are integral to our core values. For the **Visit Passports** idea, we believe that the next DCLP team could have the project implemented within a year provided they had the support of PRMO and DHTS to build the templates needed to accomplish the project.

Key measurable elements will be patient satisfaction scores, fewer complaints, provider satisfaction through clinic optimization, improved wait times, improved clinic throughput, and higher hospital rankings.

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