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Transportation Challenges to Healthcare: Evaluating the Transportation Needs of Patients at Saban Community Clinic

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**Publication Date**

2022-06-01

# Transportation Challenges to Healthcare

Evaluating the Transportation Needs of Patients at  
Saban Community Clinic

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Faculty Advisor: Madeline Brozen  
Client: Saban Community Clinic (SCC)

June 2022



## Technical Report Documentation Page

<b>1. Report No.</b>	<b>2. Government Accession No.</b> N/A	<b>3. Recipient's Catalog No.</b> N/A	
<b>4. Title and Subtitle</b> Transportation Challenges to Healthcare: Evaluating the Transportation Needs of Patients at Saban Community Clinic		<b>5. Report Date</b> 2022-06-03	
		<b>6. Performing Organization Code</b> UCLA-ITS	
<b>7. Author(s)</b> Nataly Rios Gutierrez		<b>8. Performing Organization Report No.</b> LA2131	
<b>9. Performing Organization Name and Address</b> Institute of Transportation Studies, UCLA 3320 Public Affairs Building Los Angeles, CA 90095-1656		<b>10. Work Unit No.</b> N/A	
		<b>11. Contract or Grant No.</b>	
<b>12. Sponsoring Agency Name and Address</b> UCLA Institute of Transportation Studies <a href="http://www.its.ucla.edu">www.its.ucla.edu</a>		<b>13. Type of Report and Period Covered</b> Final	
		<b>14. Sponsoring Agency Code</b> UC ITS	
<b>15. Supplementary Notes</b> DOI: doi:10.17610/T6TS4Z			
<b>16. Abstract</b> <p>People without adequate transportation can often have trouble getting to medical appointments and miss or delay their care (Syed et al., 2013). In 2017, 5.8 million people delayed or missed medical appointments due to a lack of transportation options (Wang 2021; Wolfe et al. 2020). This report evaluates the transportation challenges faced by patients seeking care at one of the Saban Community Clinic (SCC) locations. SCC is a Federally Qualified Health Center (FQHC) that provides healthcare to patients who are underinsured or without insurance to a predominantly Latinx population. This report explored SCC patient transportation needs by examining the spatial patterns of patient residential locations, surveying patient transportation needs, and evaluating an SCC effort to reduce transportation barriers by offering free Lyft rides to patients. Findings reveal that unreliable transportation options to lack of affordability and limited accessibility, getting to healthcare appointments can be difficult for patients at SCC. Despite these challenges, many patients continue to seek care at SCC because they value the quality of service. Increasing flexibility around appointments, diversifying transportation funding, expanding care to patients living further away from current SCC sites, and working with local transportation providers are strategies SCC can pursue to address patients' transportation challenges. The research provides insights into how healthcare and insurance providers and transportation agencies can best improve access to healthcare for patients similar those served by SCC.</p>			
<b>17. Key Words</b> transit healthcare equity Los Angeles		<b>18. Distribution Statement</b> No restrictions.	
<b>19. Security Classif. (of this report)</b> Unclassified	<b>20. Security Classif. (of this page)</b> Unclassified	<b>21. No. of Pages</b> 59	<b>22. Price</b> N/A

## Acknowledgments

Thank you to all the Saban Community Clinic (SCC) patients who took the time to share their transportation experiences and challenges for this project. Without you, this work would not have been possible.

Thank you to the SCC staff, in particular Jackie Provost and Lauren Hill, for generously providing your time, feedback, and advice. Thank you to my advisor, Madeline Brozen, for her thoughtful guidance and support.

Thank you to my sister, Alejandra Rios, for her help translating the survey instruments, and to my parents for their continued support. Thank you to my friends and cohort colleagues for their encouragement, accountability, and inspiration. Thanks to Aziz Fellague Ariouat for sharing resources, and Ariana Hernandez, Michael Criste, and Haley Roeser for holding space to work together.

Thank you to the UCLA Institute of Transportation and the Lewis Center for Regional Policy Studies for providing funding support for this project.

The Institute of Transportation Studies and the Lewis Center for Regional Policy Studies at UCLA acknowledge the Gabrielino/Tongva peoples as the traditional land caretakers of Tovaangar (the Los Angeles basin and So. Channel Islands). As a land grant institution, we pay our respects to the Honuukvetam (Ancestors), 'Ahihirom (Elders) and 'Eyoohiinkem (our relatives/relations) past, present and emerging.

## Disclaimer

This report was prepared in partial fulfillment of the requirements for the Master in Urban and Regional Planning degree in the Department of Urban Planning at the University of California, Los Angeles. It was prepared at the direction of the Department and of the Saban Community Clinic as a planning client. The views expressed herein are those of the authors and not necessarily those of the Department, the UCLA Luskin School of Public Affairs, UCLA as a whole, or the client.

**UNIVERSITY OF CALIFORNIA  
Los Angeles**

**Transportation Challenges to Healthcare**  
Evaluating the Transportation Needs of Patients at  
Saban Community Clinic

A comprehensive project submitted in partial  
satisfaction of the requirements for the  
degree Master of Urban & Regional Planning

by

Nataly Rios Gutiérrez

Client: Saban Community Clinic  
Faculty Advisor: Madeline Brozen

2022

# Table of Contents

<b>Executive Summary</b>	<b>6</b>
Key Findings .....	6
Conclusions and Recommendations .....	7
<b>Introduction</b>	<b>8</b>
<b>Literature Review</b>	<b>10</b>
Transportation Barriers to Healthcare .....	10
Transportation Challenges for Key Populations .....	11
Socioeconomic Status and Immigration .....	11
Race .....	12
Gender .....	12
Age and Disability .....	13
Improving Access to Healthcare .....	15
Conclusion .....	16
<b>Methods</b>	<b>17</b>
About the Saban Community Clinic (SCC) .....	17
Research Approach .....	19
Understanding Who is Served by SCC .....	19
Identifying Patients' Transportation Needs .....	19
Evaluating Lyft Intervention .....	20
<b>Findings</b>	<b>22</b>
Where Are Patients Coming From? .....	22
What Are Patients' Transportation Challenges? .....	25
Screening Survey .....	25
Full Survey .....	29
Patients' Suggestions for Improving Transportation .....	33
What can be learned from the Lyft Intervention? .....	36
Summary of Findings .....	40
<b>Recommendations</b>	<b>41</b>
Increase Flexibility and Communication Around Appointment Times .....	41
Improve Data Collection Around Transportation Needs .....	42

Diversify Transportation Vouchers and Funding to Increase Transportation Affordability for SCC and Patients .....	43
Expand Care to People Living Further than 5 miles from the Clinic .....	43
Work with Local Transit Providers to Improve Service .....	44
<b>Conclusion</b>	<b>45</b>
<b>References</b>	<b>46</b>
<b>Appendix A: Screening and Survey Questionnaires</b>	<b>51</b>
Screener .....	51
Full Instrument .....	51
<b>Appendix B: Characteristic of Lyft Trips by Origin and Destination</b>	<b>58</b>

## Executive Summary

People without adequate transportation can often have trouble getting to medical appointments and miss or delay their care (Syed et al., 2013). In 2017, 5.8 million people delayed or missed medical appointments due to a lack of transportation options (Wang 2021; Wolfe et al. 2020). Given the transit disruptions during the COVID-19 pandemic, it is likely that the number of people with transportation challenges to healthcare has increased (Oluyede et al., 2022). Lack of sufficient access to routine and preventative healthcare contributes to worsening health outcomes, reduces revenue for community clinics, and causes costly ambulance and emergency department visits (Walkins 2005; Butkus 2020).

This report evaluates the transportation challenges faced by patients seeking care at one of the Saban Community Clinic (SCC) locations. SCC is a Federally Qualified Health Center (FQHC) that provides healthcare to patients who are underinsured or without insurance to a predominantly Latinx population. I explored SCC patient transportation needs by examining the spatial patterns of patient residential locations, surveying patient transportation needs, and evaluating an SCC effort to reduce transportation barriers by offering free Lyft rides to patients.

## Key Findings

### *Spatial Distribution of Patients*

While most patients are centrally located close to SCC clinic sites, other patients come to SCC from all over LA. This creates difficulty in providing one solution for the transportation needs of patients. Further, a high share of uninsured patients who seek care at SCC live in South LA and a proportion of patients overall live in Southeast LA. Long travel distances to the clinics worsen transportation problems.

### *Transportation Survey Results*

Patients who utilize public transportation, ride-hail, or are driven by someone else are more likely to experience transportation challenges relative to those who drive themselves. In addition to issues by mode, patients over 65 are more likely to experience transportation issues than other patients. Patients face delayed or infrequent bus and train service, unreliable ride-hail bookings, and not having someone available to drive them. These challenges were frequently cited as reasons for being late or missing an appointment. Additionally, not having enough money to pay for public transportation, ride-hail, fixing the car, or paying for gas also led to patients being late or missing appointments.

### *Lyft Program Analysis*

Over the eight months of data analyzed, SCC's Lyft program became increasingly popular and thus increasingly expensive. Price increases are a function of both providing more rides and increasing costs per ride. Most patients utilized the Lyft program for only one or two rides, but about ten percent of patients used the service for six or more rides. Patients primarily used the Lyft program to get to SCC appointments, though some also used the service to get to specialty care or social services.



## Conclusions and Recommendations

This research provides insights into the barriers that patients face, and the results can help shape how the Saban Community Clinic can work strategically to improve transportation for their patients and the clinic overall. The analysis demonstrated four areas of need: a lack of reliable transportation options, a lack of transportation affordability, a lack of accessibility, and limited clinic resources to help support patient needs. Each recommendation stems from one of these findings.

### *Lack of Reliable Transportation Options*

- Provide tools to enable patients to communicate when they are running late to appointments
- Create a clear and flexible lateness policy to accommodate transportation challenges while ensuring clinic efficiency
- Advocate for improved public transportation services

### *Lack of Transportation Affordability*

- Conduct annual or semi-annual transportation fairs to connect patients to transportation resources, including LA Metro's LIFE reduced fare program and LACare's ride-hail services
- Provide alternative transportation support, including taxi voucher and bus passes

### *Lack of Accessibility*

- Explore opening an additional SCC site in South LA where there are many uninsured patients. This may also help patients who live in Southeast LA, who are similarly far away from the current clinic locations.
- Increase access to mobile clinics or telehealth
- Invest in a transportation coordinator to help patients plan their trips

### *Limited Clinic Resources to Support Patient Needs*

- Collect more detailed information on patients who use the Lyft program and those who continuously miss or are late to appointments to identify patients who might disproportionately benefit from and be eligible for paratransit or insurer-provided transportation services
- Train clinic staff to identify and connect patients to transportation resources

# Introduction

People without adequate transportation can often have trouble getting to medical appointments and miss or delay their care (Syed et al., 2013). In 2017, 5.8 million people delayed or missed medical appointments due to a lack of transportation options (Wang 2021; Wolfe et al. 2020). Given the disruptions to transit service during the COVID-19 pandemic, it is likely that this number has increased (Oluyede et al., 2022). Lack of sufficient access to routine and preventative healthcare contributes to worsening health outcomes for patients, reduces revenue for community clinics, and causes costly ambulance or emergency department visits (Walkins 2005; Butkus 2020).

Low-income people, non-white minorities, Medicaid recipients, women, and individuals without vehicle access tend to experience the highest transportation barriers (Wolfe et al., 2020a; Zhou, 2019; Crone et al., 2021). The federal government created Federally Qualified Health Centers (FQHC) to provide community-based healthcare access in under-resourced areas (HRSA 2018). Thus, FQHCs aim to bring healthcare directly to the areas that need it the most by operating clinics where individuals who lack transportation access tend to be concentrated. However, even with the creation of FQHCs, many medically underserved areas continue to lack access to quality care, forcing patients living in healthcare deserts to endure long trips to get to the nearest FQHC or medical provider (CHHS 2019). Therefore, even FQHC patients often face transportation challenges getting to healthcare.

While there is limited rigorous research connecting transportation access to healthcare outcomes, studies have found that providing patient transportation support reduces missed appointments (Solomon 2020; Shekelle 2020). Given that patients with greater transportation challenges are more likely to miss medical appointments, clinics could provide appropriate services to curtail these challenges, increase access to healthcare, and reduce revenue loss to the clinic (Guo 2021).

As a case study in understanding patient needs and how clinics can strategically improve transportation offerings, this project partners with the Saban Community Clinic (SCC) in Los Angeles. The SCC is a FQHC with four clinic locations servicing low-income, uninsured, and other vulnerable individuals and families in central LA. Over half of the patients served by SCC are Latinx/Hispanic, over half of the patients have public insurance (i.e., Medicare), and 37% lack insurance access. Some patients seeking care at SCC experience transportation challenges in getting to and from appointments, resulting in late arrivals or missed visits. SCC staff are interested in understanding their patients' transportation challenges when accessing care so that the clinic can better utilize resources to address patient needs. Thus far, the clinic has only collected information on patient transportation needs via ad-hoc methods like patient comments about why they cancel or miss appointments.

The focus of this study was to assess how SCC can improve transportation access to healthcare for its patients through a more rigorous and well-rounded approach. The research provides insights into how healthcare and insurance providers and transportation agencies can best

improve access to healthcare for patients similar those served by SCC. To achieve this, I sought to understand where patients were coming from and then surveyed patients to understand their specific transportation challenges. Finally, I evaluated a current transportation intervention provided by SCC to explore how patients utilize free Lyft services to get to healthcare. Through analyzing the findings from these three methods, I developed policy recommendations for SCC to improve transportation access for its patients.

# Literature Review

This literature review explores factors associated with healthcare transportation challenges. Given the characteristics of patients served by SCC, this literature review focuses on understanding the challenges in moving around and accessing healthcare faced by low-income adults, immigrant, and Latinx/Hispanic individuals. Finally, the review covers the evidence on solutions introduced across different healthcare clinics that improve access to healthcare.

## Transportation Barriers to Healthcare

Transportation challenges to healthcare are shaped by structural barriers that influence health status, health access, and overall health outcomes across populations (Chen et al., 2020). Some research has found that socioeconomic characteristics, not distance to a clinic, play a more crucial role in predicting transportation challenges to healthcare (Zhou, 2019). Race, income, immigration status, gender, and physical ability can often determine transportation and healthcare access (Chen et al., 2020). Individuals with higher social needs, such as those with a lack of access to housing or food, tend to have higher rates of missing appointments relative to those without social needs (Fiorio 2020). Notably, lack of transportation access is one of the highest social needs associated with high rates of missing medical appointments (Fiori et al., 2020). People living below the poverty line, Latinx, Black and AIAN individuals, women, people who are unemployed, veterans, Medicaid recipients, and people with disabilities are more likely to report experiencing transportation barriers to healthcare (Wolfe et al., 2020a; Zhou, 2019; Crone et al., 2021).

Additionally, people who are car-less, low-income, over 65, underinsured, or have disabilities often rely on paratransit services to get to healthcare providers (Zhang et al., 2021; Kaufman et al., 2017). However, paratransit services often fail to provide quality service, with inconvenient scheduling, long wait times, low operation frequencies, and high operating costs (Lewis, 2020, Zhang et al., 2021). Some healthcare providers and advocates are working to develop alternative transportation services to limit barriers to accessing healthcare, focusing on providing enhanced paratransit options that function as ride-hailing services (Kaufman et al., 2016).

**Figure 1.** The Impact of Transportation on Patient Health (Source: Guo et al., 2021)



While there is limited rigorous research connecting transportation access to healthcare outcomes, studies have found that providing patient transportation support reduces missed appointments (Solomon et al., 2020; Shekelle et al., 2020). Missed appointments can be costly for both patients and the clinics since they result in revenue loss for clinics and often lead to poor health outcomes for patients (Guo et al., 2021). As outlined in Figure 1, a lack of reliable transportation options can lead patients to miss their appointments or prevent them from picking up medication. This delay in care often leads to severe symptoms that can cause patients to seek care at the ER (Guo et al., 2021). Visits to the ER for non-insured patients and patients with public insurance create higher costs for the medical system. Additionally, patients not showing up to their appointments leads to lower revenue for clinics and reduces the number of people the clinic can serve (Guo et al., 2021; DuMontier et al., 2013). Given that patients with higher transportation challenges are more likely to miss medical appointments, clinics could invest in providing transportation services to address these challenges, increase access to healthcare, and reduce revenue lost (Guo et al., 2021).

## Transportation Challenges for Key Populations

To understand how to best provide transportation resources to people with transportation challenges to healthcare, this section reviews how income, age, ability, gender, and race affect people's travel. Additionally, since healthcare institutions are increasingly using ride-hail services to provide transportation access to clients, I focus on how these factors affect ride-hail use (Powers et al., 2016; Lewis & Reagan, 2020; Zhang et al., 2020). This review provides key considerations for creating transportation interventions that best serve SCC patient needs.

### Socioeconomic Status and Immigration

Low-income individuals, undocumented immigrants, unhoused individuals, and people re-entering communities from the carceral system tend to have a higher need for public subsidies that help access public transportation (Walsh, 2021). Research has also found that people living in neighborhoods with lower incomes and lower educational attainment tend to be more likely to miss appointments than those in wealthier neighborhoods (Dobbs et al., 2017).

People living in lower-income households tend to take fewer trips per day, have lower car ownership levels, and rely on public transit, carpooling, and walking more than people living in higher-income households (Chen et al., 2020; Blumenberg & Pierce, 2012; Brown, 2017). Similarly, low-income immigrants tend to have higher rates of carpooling and public transportation use (Chen et al., 2020; Blumenberg, 2009). Additionally, people experiencing homelessness tend to be the most transit-dependent and the most likely to use multiple modes of transportation to get around (Chen et al., 2020; Jocoy et al., 2010; Murphy, 2019).

The rise of ride-hail services has provided people with a new way to move about their communities. However, ride-hail use requires that riders have enough money to pay for the service, a smartphone, and a credit or debit card to pay for the service via their phone. Unsurprisingly, in the US, early adopters of ride-hail tended to be younger, more well-educated, and have higher incomes than the general population (Alemi et al., 2018). In contrast, low-income

households face barriers to paying for ride-hail services, as evidenced by the higher rates of shared ride-hail services among low-income communities and most non-white neighborhoods (Brown & Taylor, 2018a). Low-income people also tend to be more likely to lack access to a smartphone or a bank account and have higher concerns about sharing banking information due to fears of identity theft (Brown & Taylor, 2018a; Golub et al., 2019). Thus, low-income households, who are less likely to have car access than higher-income households, face additional barriers to accessing the newer transportation systems (Brown & Taylor, 2018a).

## Race

Black and Latinx individuals tend to have similar challenges in access to transportation. Both groups have the lowest rates of car ownership and often tend to rely on public transport. Latinx travel trips tend to be at least 15 minutes longer than those for white individuals. Black and Latinx individuals have a higher risk of collisions while walking than other races (Brozen et al., 2021). Furthermore, Black and Latinx individuals face a disproportionate risk of harassment from police while traveling (Brozen et al., 2021). Given racial disparities in travel patterns, it's crucial to account for how different structural barriers affect an individual's ability to access transportation to receive healthcare.

Some studies have found that neighborhoods with a majority of non-white residents (including Black and Latinx), tend to have higher rates of shared ride-hail trips (Brown, 2019; Barajas & Brown, 2021). However, research is inconclusive as to whether race or income is a better predictor of whether a neighborhood is more likely to have higher rates of ride-hail trips, particularly for essential trips (Barajas & Brown, 2021; Brown & Williams, 2021). Nevertheless, many of these studies focused on a neighborhood, not individual characteristics.

Additionally, research has documented higher levels of discrimination against Black riders by both taxi and ride-hail drivers relative to riders from other races (Brown, 2019; Ge et al., 2020). Driver discrimination occurs when drivers cancel or are late for pick-up for one group more than others. Discrimination also affects Latinx and Asian passengers, with both groups experiencing higher trip cancelation rates than white riders (Brown, 2019). Driver discrimination tends to be highest among taxi drivers, but ride-hail drivers also exhibit this behavior (Brown, 2019). Ride-hail and taxi companies should work towards identifying and removing discriminatory drivers from their services. Understanding how racial discrimination exists within ride-hail and taxi services highlights potential challenges for passengers utilizing these services to get to healthcare appointments.

## Gender

Gender can play a significant role in how people travel. Regardless of income, relationship status, and education level, women are often in charge of errands and caregiving for children and older adults (Brozen et al., 2021). The responsibilities often lead women to have complex trip patterns that require them to stop along the way when traveling (Brozen et al., 2021). Low-income women face more significant challenges in accessing transportation for the services they need and often must rely on public transportation to get around. However, in many instances perceptions of safety

and experiences of assault can lead women, transwomen, and gender non-conforming individuals to avoid public transportation (Brozen et al., 2021). These fears for safety could explain why women tend to have slightly higher ride-hail usage rates than men and why there are higher rates of ride-hail use at night (Brown, 2018b).

Ride-hail services also present safety issues for both passengers and drivers. Between 2017 to 2019, Lyft and Uber each received over 4,000 sexual assault complaints (Bond, 2019). While the companies did not release a gender breakdown of the assaults, research has found that women, transwomen, and gender non-conforming individuals face higher rates of sexual and gender-based harassment and violence when traveling (Brozen et al., 2021). Additionally, a study found that men tend to experience ride cancellations at higher rates than women, mainly from female drivers. Disparities in ride-hail cancellation likely stem from female drivers' fear of assault (Brown, 2018b). Thus, male-presenting patients might have more difficulty getting a ride-hail ride to an appointment than female patients.

Overall, it is crucial to consider how gender impacts travel access. Clinics should consider how household responsibilities, perceptions of safety, and economic resources affect how women travel, and provide transportation resources that address these challenges and increase access to healthcare services.

## **Age and Disability**

Older adults and people with disabilities (PWD) have high transportation barriers (Brozen et al., 2021). However, these groups are not homogeneous. In the US, roughly 12% of individuals, or one in four adults, experience a disability. Disability rates vary by age, race, and income. Approximately 47% of people over 75 years old have a disability, while Native Americans face the highest rates of disability among all racial groups. Additionally, 62% of PWD are unemployed, pointing to high levels of socioeconomic need within this population (Brozen et al., 2021). While both older adults and PWD can lack adequate transportation access, the needs are different based on age, socioeconomic status, race, type, severity, and duration of the disability.

PWD tend to take fewer trips per day, especially by car, compared to non-disabled people. They also tend to be more likely to live in low-income housing and use public transit or paratransit at higher rates relative to non-disabled people (Chen et al., 2020). PWD also tend to require access to healthcare much more frequently than people without disabilities. Additionally, PWDs tend to spend more time traveling to healthcare appointments, even after controlling for the distance of the trips and mode of travel (Chen et al., 2021).

Older adults often have trouble completing trips for essential services due to difficulties moving around. A study found that older adults could not complete 16% of their planned trips to healthcare appointments, social visits, or errands due to a lack of transportation resources (Fields et al., 2020). Low-income older adults rely on walking and public transportation to move around their neighborhood and access essential services. However, these modes of transport can have challenges, including fears of falling while walking and challenges getting on and off the bus (Loukaitou-Sideris et al., 2018a).



PWD and low-income adults could greatly benefit from non-emergency medical transportation (NEMT). NEMT is a Medicaid benefit meant to provide transportation to non-emergency medical care for people with “unmet transportation needs” although the exact eligibility differs from state to state (DHCS, 2021; Ordway et al., 2020). However, traditional NEMT services often require users to book the services a day in advance, make separate reservations for the trip to and back from their medical appointment, and wait long periods to be picked up by the service. Additionally, applying and qualifying for these services can often be burdensome for people who need them (Ordway et al., 2020; Loukaitou-Sideris et al., 2018a). A lack of accessible and flexible NEMT services can often limit the ability of PWD and older adults to access healthcare (Ordway et al., 2020).

Ride-hail technology could improve NEMT services for PWD and low-income individuals. However, access to ride-hail services can differ by physical and mental ability. In many instances, ride-hail services do not accommodate the needs of PWD and older adults. Some barriers to ride-hail services include lack of accommodations for wheelchair access or service animals, increased cost due to longer trip times for riders who need additional time getting on or off the ride-hail service, and challenges using the app due to cognitive difficulties (Shaheen, 2018; Brozen et al., 2021). The challenges in access to ride-hail could explain the disparities in PWD using ride-hail vs. traditional taxi services. While PWDs use ride-hail services and taxi services twice as much as non-disabled people, ride-hail services only account for one-third of PWDs' trips via taxi or ride-hail (Schaller Consulting, 2018).

Additionally, some studies have found that older adults living in poverty rarely utilize point-to-point travel. Constraints to utilizing ride-hail or taxi services for this population include a lack of financial resources and feeling uncomfortable using technology. (Loukaitou-Sideris et al., 2018a). Accessing ride-hail services require using smartphones to request access to these services. However, people lack access to ridesharing services when they have limited experience using apps, limited language proficiency, or lack affordable internet access (Golub et al., 2019).

Improving ease and comfortability in requesting ride-hail services is crucial to increasing access for many individuals. A study with older adults found that barriers to using ride-hail servicing included: not feeling comfortable using an app, not having a credit card, not feeling comfortable sharing credit card information for fear of it being a scam, and not feeling comfortable getting in a car with a stranger (Gallo et al., 2021). However, despite these challenges to utilizing ride-hail services, a study found that offering free Uber rides to older adults increased mobility. Older adults used the free ride-hail trips for healthcare, errands, socializing, entertainment, and fitness classes. Overall, the study found that offering free rides to older adults improves their overall quality of life by improving access to services (Saxon et al., 2019).



## Improving Access to Healthcare

To address the challenges to healthcare access, some healthcare centers provide several types of transportation services, including bus passes, taxi or transport vouchers or reimbursement, arranging patients' transportation, and providing free shuttle services (Kaufman et al., 2017; Starbird et al., 2018; Williams & Tremblay, 2019). Additionally, many cities, insurance plans, and healthcare centers rely on ride-hail services or technology to provide non-emergency medical transportation for patients (Wang et al., 2021; Lewis & Regan, 2020). Figure 2 provides an overview of the three models for integrating ride-hail services into healthcare settings (the figure refers to ride-hail services as TNCs or Transportation Network Companies).

One way healthcare clinics integrate ride-hail services into healthcare delivery is by directly providing vouchers or booking rides for patients. In addition to this method, insurance and paratransit providers are increasingly developing partnerships with ride-hail services to provide more flexible transportation for patients (Wolfe & McDonald, 2021b). While limited research has been conducted to ensure that these services overcome the challenges described in the previous sections, partnerships between healthcare providers or other agencies can reduce barriers to paying for services (Wang et al., 2019; Kaufman et al., 2016; Rochlin et al., 2018). Additionally, clinics might help reduce barriers to ride-hailing by directly booking rides for patients. Through this method, patients can receive direct support to utilize the service while potentially eliminating any biases from drivers.

**Figure 2.** Typology of Innovative Health Care Mobility Services, Source: Wolf 2021

	<i>Type I</i>	<i>Type II</i>	<i>Type III</i>
	Health care provider leverages TNC technology	Insurer partners with TNC	Paratransit provider partners with TNC
<b>Who books the ride?</b>	Clinician (on patient's behalf); patient	Patient or clinician	Usually the rider/patient
<b>Who pays?</b>	Health care provider; broker; patient	Insurance company; health plan	Transit agency; patient pays 'fare' with substantial subsidy from transit agency
<b>Eligible for Medicaid reimbursement?</b>	Varies; in many cases, yes, given patient eligibility	n/a	Yes, given patient eligibility
<b>Patient Benefits:</b>	<ul style="list-style-type: none"> <li>• Shorter wait times &amp; less uncertainty</li> <li>• Reminders through smartphone or analog phone</li> </ul>	<ul style="list-style-type: none"> <li>• Financial support</li> <li>• Addresses social determinant of health</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible booking circumvents need for advance booking</li> <li>• Increased trip reliability</li> <li>• Patients who otherwise can't afford TNC service have access</li> </ul>
<b>Health Care Provider Benefits:</b>	<ul style="list-style-type: none"> <li>• Real-time tracking patients' trips as well as own spending</li> <li>• Flexible booking</li> </ul>	<ul style="list-style-type: none"> <li>• Greater patient engagement</li> <li>• Reduced costs in long-term</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced appointment no-shows</li> </ul>

As discussed previously, solely providing transportation support might not address all of the transportation challenges patients face in getting to healthcare appointments. In addition to providing direct transportation support, transportation services can be supplemented by coordination services such as counseling, care coordination, education, financial intervention, motivational interviewing, and navigational assistance. Community health workers, nurses, or clinic staff commonly administer these services (Starbird et al., 2018). Transportation services, in combination with tailored services such as care coordination, have been found to improve patient health outcomes (Starbird et al., 2018). Care coordination can help identify additional patient

needs that prevent them from accessing healthcare, such as childcare, and the care coordinator can then connect patients to these services. Thus, while direct transportation support is often necessary to provide patients with ways to access healthcare, patients with high vulnerabilities might require additional support to ensure they can access healthcare services.

## Conclusion

Lack of adequate transportation access can cause a delay in healthcare provision, particularly for low-income people, immigrants, older adults, Black and Latinx individuals, and people with disabilities. Healthcare centers and public transportation providers are developing solutions to these challenges. Many of these interventions involve providing bus passes, taxi or transport vouchers or reimbursement, arranging patient transportation, or providing a free shuttle service. Given the complexity of the challenges people with transportation needs face, one standard solution has focused on leveraging ride-hail services as a Non-Emergency Medical Transportation Service tool. Despite a number of challenges, ride-hail services seem to increase mobility, especially for older adults and people with disabilities.

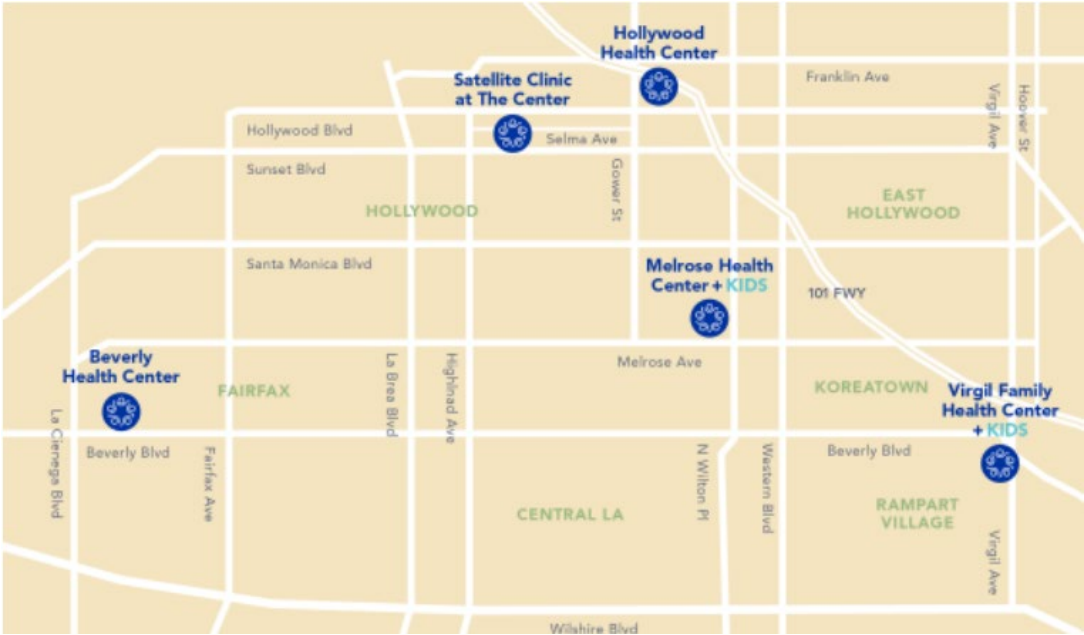
There is limited research demonstrating the efficacy of different transportation interventions in increasing healthcare outcomes. However, combining transportation services with care coordination is a promising solution to serve patients' needs better. More research is needed to understand which interventions work best for different patients. Examining the challenges faced by patients seeking care at SCC provides an excellent opportunity to better understand the types of transportation struggles in getting to healthcare. The study will help pave a path towards refining interventions that can effectively meet the diverse needs of patients and work towards improving healthcare outcomes.

# Methods

## About the Saban Community Clinic (SCC)

The Saban Community Clinic (SCC) is a Federally Qualified Community Clinic that receives funding from Health Resources and Service Administration (HRSA) to provide healthcare services in underserved areas. SCC is composed of four in-person clinics and one remote location (Figure 3). The four clinic locations are located across central LA, with most clinics located in Hollywood. The clinics include the Hollywood, Beverly, Melrose, and Virgil Health Centers. Across these four sites, SCC provides primary and dental care, behavioral health services, vision care, pharmacies, and showers.

Figure 3. Saban Community Clinic (SCC) Sites



In 2020, the clinic provided service to a total of 17,370 patients (Table 1). Most of those patients fell between the ages of 25-64 (77%), and over half identified as female (57%). Additionally, over half of the patients identified as Hispanic (52%), while 20% identified as non-Hispanic white, 9% as non-Hispanic Black, and 6% as non-Hispanic Asian. Finally, about half (51%) of the patients served by the clinic had access to public insurance while about a third (37%) of the patients were uninsured, and only 6% had access to private insurance.

FQHCs like SCC are required to provide transportation to their patients. Typically, SCC provides taxi or bus vouchers to patients when they needed support getting to the hospital or a specialist. SCC had a limited budget for these vouchers; thus, they did not inform many patients about this option. However, since patients are often late or miss their appointments, SCC sought to understand how they could support patients in getting to their appointments.

One program to supporting patients' transportation needs took the form of a Lyft pilot program. The program initially started through grant funding provided to the Behavioral Health service team. SCC intended the Lyft pilot to support patients' transportation to healthcare and social services. SCC eventually gained additional funding to expand the program to all their patients in need of transportation support. In October 2020, SCC provided free Lyft rides for patients who needed transportation assistance to medical appointments and other related services. In August 2021, SCC paused the Lyft pilot to evaluate its use by each department, create parameters for scheduling to control costs and redistribute funds by department, provide a budget for each team, and require the centralization of staff who can order the Lyft service. Services continue to this day under this new structure.

The following section provides information about how I supported SCC's efforts to understand the challenges their patients have in getting to healthcare services.

**Table 1. Patient Sociodemographic Characteristics**

		<i>N (%)</i>
<b>Total</b>		17,370(100%)
<b>Age</b>		
	17 or younger	1,413 (8%)
	18-24	885 (5%)
	25-34	2,763 (16%)
	35-64	10,591(61%)
	65 or older	1,718 (10%)
<b>Sex</b>		
	Female	9,899(57%)
	Male	7,471(43%)
<b>Race &amp; Ethnicity</b>		
	Hispanic	9,462(54%)
	Non-Hispanic Black	1,571(9%)
	Non-Hispanic White	3,552(20%)
	Non-Hispanic Asian	1,021(6%)
	Other	134(1%)
	Unreported	1,641(9%)
<b>Insurance Status</b>		
	Uninsured	6,493(37%)
	Public Insurance (Medicaid/CHIP)	8,895(51%)
	Medicare	1,012(6%)
	Private	981(6%)

## Research Approach

To help SCC better serve its clients, this study aims to understand transportation challenges faced by patients. This exploratory field study focused on understanding how SCC can improve transportation access to healthcare for its patients, through the following methods:

1. Understanding where patients are coming from
2. Identifying patients' transportation challenges
3. Evaluating the Lyft intervention

## Understanding Who is Served by SCC

To understand who is served by SCC, I conducted a descriptive analysis of SCC patients' demographic data from 2020. The data included information on all patients, including age, gender, race, insurance status, and residential location (using zip codes). To analyze this data, I first mapped the distribution of patients by zip code and created a 2- and a 5-mile buffer around each SCC clinic site. The 2- and 5- mile buffers represent whether a patient lives close (2 miles), somewhat close (5 miles), or far away from the clinic, given that transportation access is more difficult as distance increases. After creating the buffer, I calculated the total number of patients located within these buffers. One limitation is that the number of patients living at each distance category assumes an even distribution of patients across each zip code.

I wanted to further understand if uninsured patients were similarly distributed across the city as those patients with insurance. To achieve this, I created a map to illustrate the share of uninsured patients per zip code across the city and calculated the number of uninsured patients who live within the 2- and 5-mile buffer.

## Identifying Patients' Transportation Needs

Next, I conducted an online survey to understand patients' transportation challenges directly. Survey participants were recruited through convenience sampling, either through the SCC Patient Satisfaction Survey or a CareMessage text message. The recruitment process is described below. To be eligible for the survey, patients needed to be at least 18 years old and have reported missing or being late for an appointment in the last 12 months. Patients who were eligible and consented to participate in the study were directed to an online survey.

The first part of the survey asked questions regarding recent travel to the doctor, recurring transportation challenges to healthcare appointments, and potential solutions to these issues. The second part of the survey included various questions about patients' sociodemographic characteristics, including age, sex, insurance status, living situation, physical ability, and more. I evaluated these questions to identify subpopulations with higher levels of transportation needs. Appendix A includes the screening and survey instruments for this study. Most of the questions I included come from previous studies on transportation challenges patients face in other clinic settings (Locatelli et al., 2017, Cochran et al., 2021). The survey was available in both English and Spanish.

## Survey Recruitment

### SCC Patient Satisfaction Survey

The first recruitment tool was the Patient Satisfaction Survey. SCC emails all patients after they complete a visit a link to a Patient Satisfaction Survey. In this survey, SCC included screening questions that evaluated if a patient experiences transportation challenges in getting to medical appointments. If the patient did experience transportation challenges, they were asked if they wish to participate in the study and directed to complete the full survey. Additional information collected by the Patient Satisfaction Survey, such as gender or age of patients, was included in the analysis of screening responses.

### CareMessage Text Message

SCC staff identified patients who had missed at least one of their appointments in the last 3 months. These patients then received a text message via the SCC CareMessage system. The text message included information about the study and a link to a screening survey.

## Analysis

I analyzed the screening data to understand the types of patients who are more likely to experience transportation challenges. I first conducted a descriptive analysis examining the intersections between the screening questions and patient demographics. I then ran a chi-square test and logistic regression to explore potential factors associated with an increased likelihood of experiencing transportation issues. Using the full survey responses, I conducted a descriptive analysis to analyze trends. I produced cross-tabulations to examine differences across patients who were more than 20 minutes late to appointments and patients who missed an appointment in the last 12 months to the overall sample. Finally, I supplemented this analysis with information received during the participant calls.

## Short Survey Participant Calls

I conducted five short interviews with participants who had completed the survey and agreed to be contacted again to discuss the responses. I selected participants who had to travel longer than an hour to get to their appointments or did not have insurance. Interviews lasted 10-20 minutes, with questions regarding participant challenges to healthcare, reasons for attending the SCC for healthcare, and ways that SCC support them in addressing transportation barriers.

## Evaluating Lyft Intervention

While the patient spatial analysis and survey helped to understand self-described challenges patients faced, I used the Lyft data to understand revealed patterns of transportation use. The purpose of this analysis was to understand how Lyft rides were utilized and evaluate how to maximize the effectiveness of providing Lyft support to patients.

I first conducted descriptive analyses to understand the number and cost of trips across each month of the program, day of the week, time of day, and distance from the clinic. I also calculated average trip cost, average cost per mile, average distance, average duration, and total number of

patients served. The data included the name of the patient who was requesting the ride, although these data were not always consistent, and thus analyzing the data required manual matching.

I was further interested in where patients traveled to and from for each trip to understand the distribution across the permitted trip types. The data included the origin and destination addresses, but no specific information about whether these locations were the patient's home, a pharmacy, or the SCC. Categorizing the trips required additional manual processing. I first searched the origin and destination locations to identify any SCC sites, then followed the same process for Medical Services and Social Services listed in the SCC Geo-fence list. If either the pick-up or drop-off location matched one of these addresses, then I coded any empty addresses as "Other". Afterward, for any trip that did not match these addresses at either pick-up or drop-off, I individually searched the addresses on Google to research whether the site corresponded to either a Medical Service or Social Service location. I coded as "Other" all addresses with no matching service location. Most of the addresses coded as "Other" appear to belong to residential locations though a few also corresponded to commercial areas or other areas I couldn't identify. It is possible that some of the "Other" locations were locations for Medical Services or Social Services I couldn't identify through my Google searches.



# Findings

## Where Are Patients Coming From?

As illustrated in Figure 4, the clinic provides services to clients living across Los Angeles County. The map provides an overview of the quantile distribution of patients across the city by zip code. Overall, most SCC patients live in the same zip codes in which the clinics are located. However, there are still many patients traveling to SCC sites from dispersed areas across the county.

**Figure 4.** Quantile Distribution of Patients Served at SCC by Zip Code

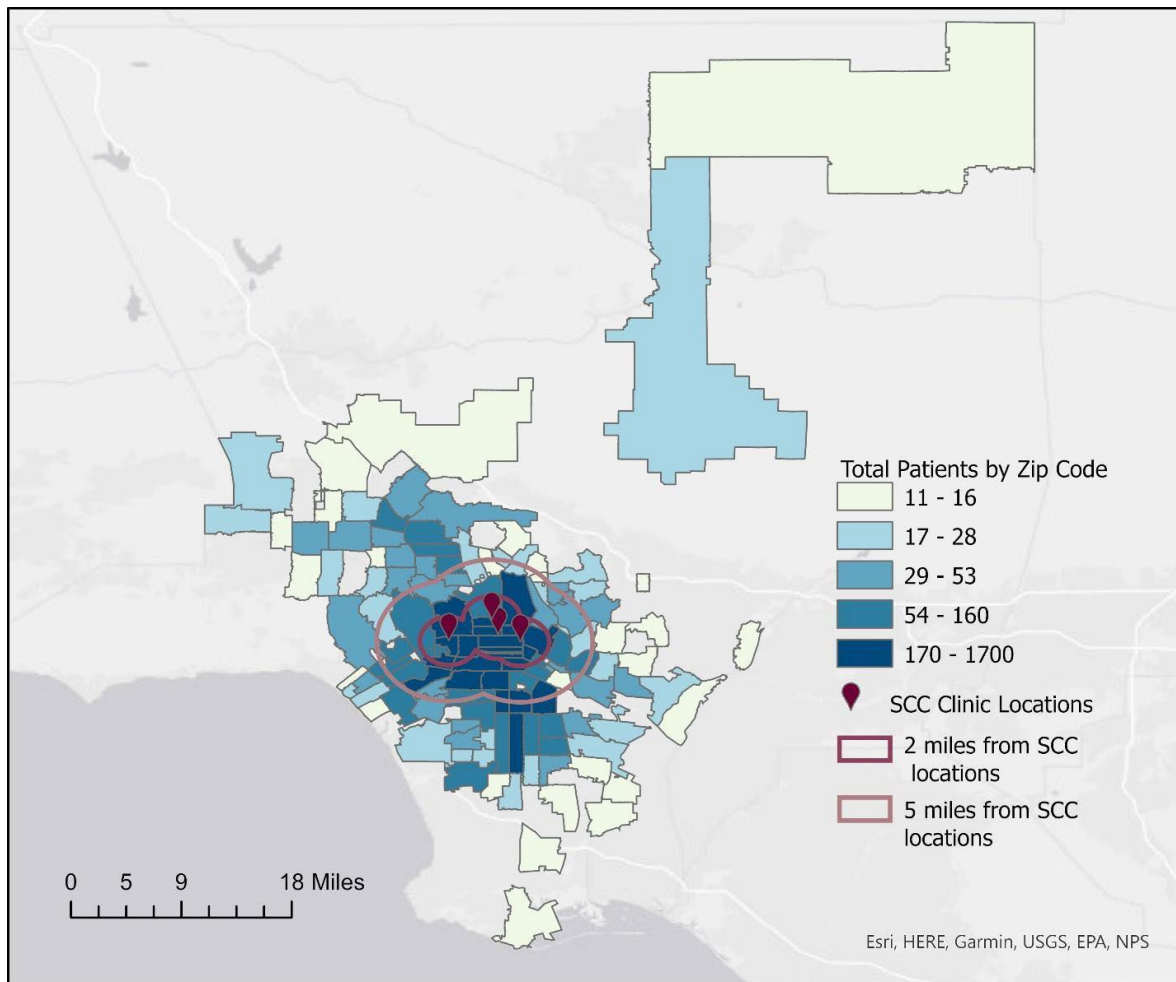




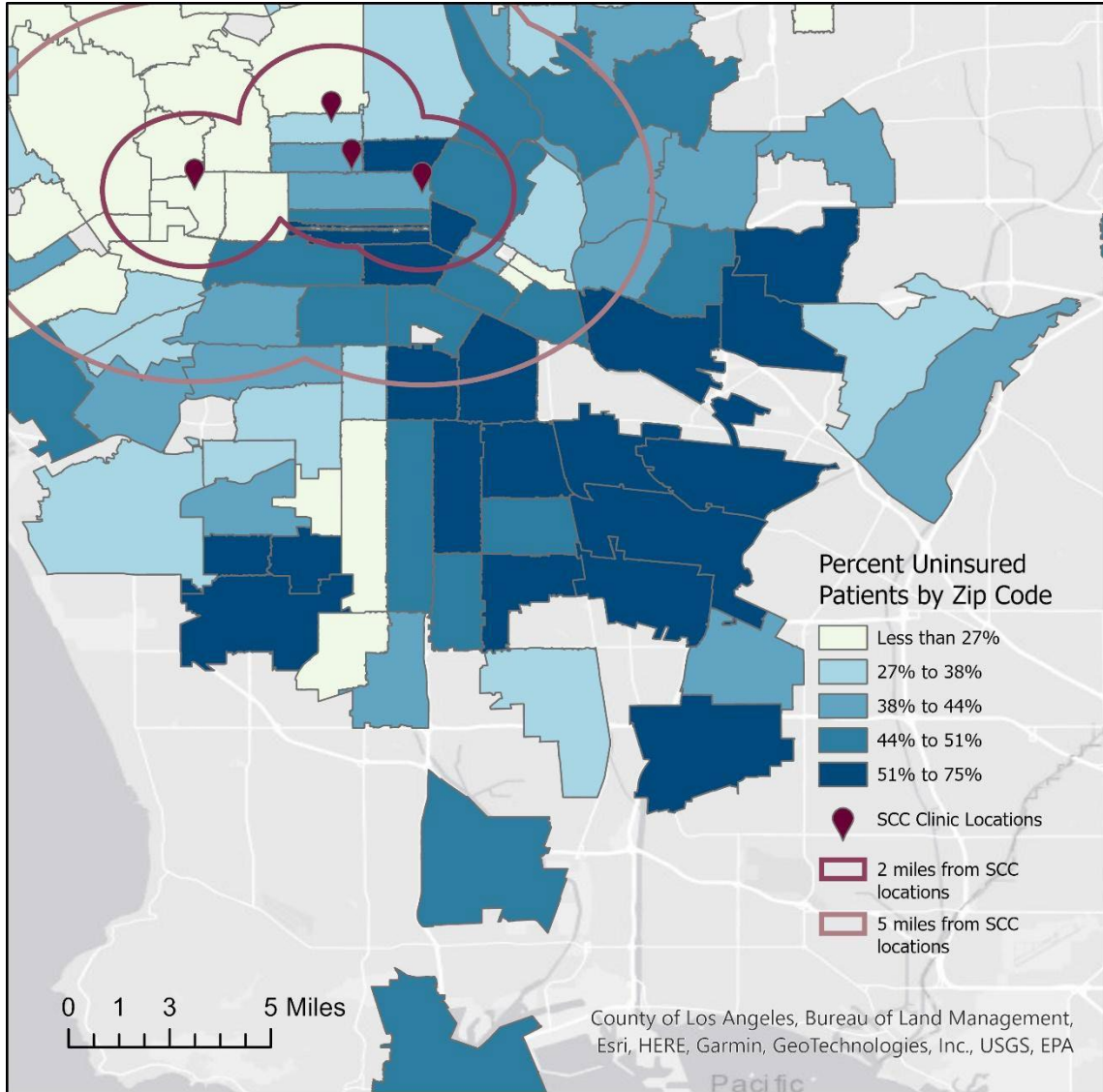
Figure 4 and Table 2 highlight the share of patients by distance from the SCC clinics. Over half of the patients live within 2 miles of one of the four SCC clinics, about a quarter live within 2 to 5 miles, 17% percent live between 5 to 20 miles away, and 5% live in zip codes over 20 miles away. Uninsured patients live similar distances from the clinics, with three-quarters of uninsured patients living within 5 miles away from a clinic, a fifth of the patients 5 to 20 miles away, and 3% living more than 20 miles away from a clinic. The number of patients living at each of the distance categories assumes an even distribution of patients across each zip code.

**Table 2.** Distribution of Patients by Insurance Status

	<b>All Patients</b> <i>N (%)</i>	<b>Uninsured</b> <i>N (%)</i>
Total	17370 (100%)	6493 (100%)
Less than 2 miles	9200 (53%)	3395 (52%)
2 to 5 miles	4309 (25%)	1604 (25%)
5 to 20 miles	2980 (17%)	1315 (20%)
More than 20 Miles	881 (5%)	179 (3%)

As illustrated in Figure 5, a high share of patients from South LA lack insurance, with many of the zip codes in the areas having over 50% uninsured patients. The most likely explanation is that South LA is a medically underserved area, thus patients have to travel to SCC, though some patients traveling from South LA may be coming to sites near SCC for work (CHHS 2019). I later present findings from short phone interviews to explore why this may be the case.

**Figure 5.** Percent of Patients within Zip Codes without Insurance Map by Quantile



# What Are Patients' Transportation Challenges?

## Screening Survey

A total of 629 patients responded to the screening questions during the data collection period (Table 3). Most participants were recruited through SCC Patient Satisfaction Survey (94%). Of the 629 participants screened for the survey, 101 (16%) reported experiencing transportation issues to an SCC appointment in the past twelve months. Most of these participants had attended appointments at the Beverly (48%) or Melrose (35%) clinics for their last healthcare appointment. Typically, these two sites provide the highest volume of patient care, so it is unsurprising that most screened participants received care at these sites. Almost half of the participants drove themselves to their most recent healthcare appointment (48%). The next two most common transportation modes were public transportation (17%) or having someone else drive (14%). The majority of screened participants identified as female (60%), and 16% of participants screened were over 65%.

Overall, participants with transportation problems tended to have lower rates of driving or walking and higher rates of using public transportations, Uber/Lyft, bike, or paratransit to get to their appointment. Among participants who experienced transportation issues, only 24% (19 out of 80) drove themselves to their appointments compared to 52% among participants without transportation issues. Additionally, 31% (25 out of 80) of participants with transportation issues, compared to 14% of participants without transportation issues, utilized public transportation to get to their most recent medical appointment.

Additionally, there were higher rates of women and older adults among participants with transportation issues. Most people with transportation issues, 67% (50 out of 74), identified as female compared to only 59% among participants without transportation issues. Additionally, 27% (20 out of 74) of participants with transportation issues were over 65, compared to 14% of participants without transportation. I conducted a chi-square test to test the statistical significance of differences between participants with and without transportation issues. Age and mode of transportation differences were statistically significant, while gender differences were not significant.

**Table 3. Survey Screening Results**

	<b>All</b>	<b>Transportation Issues</b>	<b>No Transportation Issues</b>
	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>
<b>Total</b>	629 (100%)	101 (16%)	528 (84%)
<b>Mode of Recruitment</b>			
Care Message	36 (6%)	18 (18%)	18 (3%)
SCC Patient Satisfaction Survey	593 (94%)	83 (82%)	510 (97%)
<b>Clinic Last Visited</b>			
	<i>out of 593</i>	<i>out of 83</i>	<i>out of 510</i>
Beverly	285 (48%)	38 (46%)	247 (48%)
Hollywood	73 (12%)	9 (11%)	63 (12%)
Virgil	33 (6%)	8 (10%)	24 (5%)
Melrose	205 (35%)	28 (34%)	176 (35%)
<b>Mode of Transportation for Last Appointment</b>			
	<i>out of 590</i>	<i>out of 80</i>	<i>out of 510</i>
Private vehicle—I drove myself	285 (48%)	19 (24%)	266 (52%)
Public Transportation	98 (17%)	25 (31%)	73 (14%)
Private vehicle—Someone else drove me	85 (14%)	12 (15%)	73 (14%)
Uber/Lyft	38 (6%)	11 (14%)	28 (5%)
Walked	48 (8%)	4 (5%)	44 (9%)
Biked	7 (1%)	3 (4%)	4 (0.8%)
Paratransit	4 (0.6%)	2 (3%)	2(0.4%)
Other	24 (4%)	4 (5%)	20(4%)
<b>Gender</b>			
	<i>out of 557</i>	<i>Out of 74</i>	<i>out of 483</i>
Female	333 (60%)	50 (67%)	283 (59%)
Male	224 (40%)	24 (29%)	200 (41%)
<b>Age</b>			
	<i>out of 560</i>	<i>out of 74</i>	<i>out of 486</i>
Older Adults (>65)	86 (16%)	20 (27%)	66 (14%)
Younger than 65	474 (85%)	54 (73%)	420 (86%)

To control for multiple demographic variables, I conducted a multivariable logistic regression to predict what factors contribute to transportation challenges. Results of the logistic regression can be found in Table 4. The model included modes of transportation, where the excluded base was participants who drove themselves, as well as whether the respondent was an older adult. Gender was not included since it was previously identified as a statistically insignificant variable.

**Table 4. Multivariable Logistic Regression Model**

<b>Characteristic</b>	<b>Odds Ratio (95% CL)</b>	<b>p Value</b>
Drive-Someone Else Drove Me	2.63 (1.18-5.86)	0.018
Uber/Lyft	5.96 (2.43-14.64)	<.001
Public Transit	6.15 (3.06-12.37)	<.001
Walking	1.47(0.47-4.63)	0.513
Biking	12.48(2.52-61.91)	0.002
Other Mode of Transport	2.44(0.65-9.17)	0.188
Older Adult (65 or older)	2.50(1.35-4.66)	0.004
Constant		

Overall, participants who got to their appointments via public transportation, Uber/Lyft, were driven by someone else, or biked were more likely to have transportation challenges than those who drove themselves to their latest medical appointment. Participants who used public transportation were 6.2 times more likely than those who drove themselves to have transportation challenges. Similarly, participants who used Uber/Lyft, biked, or were driven by someone else were 6.0, 12.5, and 2.6 times more likely to report experiencing transportation issues in the last twelve months relative to participants who drove themselves. Furthermore, older adults (65 or older) were 2.5 times more likely to report experiencing transportation challenges than participants under 65.

Participants were asked to write the reasons for their transportation issues. Many participants who used public transportation reported bus or train delays or the bus not arriving as the reason for missing their appointment. Some participants also mentioned walking long distances to catch the bus, infrequent bus service, and the cost of the transit fare. Participants who used Uber/Lyft reported a lack of driver availability, long wait times, and cost of the ride as the main issues leading to being late or missing their appointment. Participants who drove themselves predominantly cited car issues, such as their car being in the repair shop, as the reason for missing or being late to an appointment.

Additionally, some participants mentioned that lack of parking led them to be late for their appointments. Participants who were driven by someone else mentioned having no independent mode of transportation or not wanting to put a burden on other people to drive them to their appointments. Participants who drove themselves, were driven by someone else, or used Uber/Lyft all reported traffic as an issue in getting to their appointments. Not many participants who walked or used a bike explained why they had transportation challenges. However, one person reported their bike not working, and another mentioned not feeling well enough to walk as the reason for missing their appointment.

Overall, findings from the screening survey reveal that participants who rely on public transportation, Uber/Lyft, or are driven by someone else have higher rates of transportation

challenges. Lack of reliability is a common theme across all three modes. As reported by participants, buses and trains tend to not run on-time, and the time it takes to find a driver via Uber/Lyft is not always consistent. People who depend on others to drive them might not always have a ride consistently. Additionally, an overarching challenge was the cost of transportation: multiple participants mentioned not having enough money to pay for the bus or an Uber/Lyft ride. In the next section, I will further explore transportation challenges experienced by SCC participants through an analysis of survey responses.

## Full Survey

Out of the 101 participants who were screened and eligible for the study, 46 agreed to participate in the entire survey, and 34 participants completed the full survey. Results are provided for the total number of people who completed each question. Interpretation of the full survey results is limited by the smaller number of respondents.

### Participant Demographics

Table 5 provides sociodemographic information about participants in the survey. The total numbers in the Race and Ethnicity section are greater the number of participants who responded to the survey because respondents could select all racial and ethnic categories with which they identify. This applies for all the responses throughout the report. Most participants identified as either Latinx/Hispanic (14 out of 33) or white (14 out of 33). A small share of participants identified as Black (3 out of 33), Asian (2 out of 33), or American Indian and Alaska Native (2 out of 33).

Additionally, most of the participants identified as female (21 out of 36), and most were under 49 (17 out of 33). Almost all participants had public insurance (34 out of 36), with only two participants reporting having no insurance. Participants primarily attended the Beverly (17 out of 43) or the Melrose Health Center for their most recent medical appointment (13 out of 43). Nine participants reported having housing insecurity in the previous 12 months, and 13 reported Experiencing either a physical or mental disability or a chronic condition.

**Table 5.** Survey Participant Demographics

	Count <i>N/Total</i>
<b>Race and Ethnicity</b>	
Latinx/Hispanic	14/33
Non-Hispanic White	14/33
Non-Hispanic Black	3/33
Non-Hispanic Asian	2/33
American Indian and Alaska Native	2/33
<b>Gender</b>	
Female	21/36
Male	14/36
Non-binary	1/36
<b>Age</b>	
24-34	6/33
35-49	11/33
50-64	7/33
65 and older	3/33
<b>Health insurance</b>	
Public Insurance (i.e., Medicare)	34/36
No Insurance	2/36
<b>Clinic of Last Visit</b>	
Beverly	17/43
Hollywood	1/43
Melrose	18/43
Virgil	7/43
<b>Housing Insecure</b>	9/36
<b>Physical or Mental Disability</b>	13/36

## Transportation Trends

Similar to the screening process, I asked survey participants about their mode of transportation to their last medical appointment, the time it took to get to that appointment, and how difficult it was to get to that appointment. Public transportation was the most common form of transportation (15 out of 43), followed by Uber and Lyft (11 out of 43) and participants driving themselves (8 out of 43). The length of trips was evenly split, with 10 out of 43 participants spending less than 15 minutes getting to their appointments and 10 out of 43 participants taking longer than 1 hour to get to their appointment. Almost half of the participants found transportation to their last appointment somewhat difficult (20 out of 43), and a small share found it very difficult (8 out of 43).

When analyzing the mode of transportation to all SCC appointments over the last twelve months, most participants arrived via public transit, Uber/Lyft, or walking. Notably, over half of the participants used public transportation to get to their appointments at SCC (29 out of 43), while 17 participants used Lyft or Uber, and 11 walked. The number of participants who drove themselves only increased by two (10 out of 43 vs. 8 out of 43). In contrast, the number of participants driven by someone increased by 6 (8 out of 43 vs. 2 out of 43). This is unsurprising given that among the 15 participants with vehicle access, only 3 had access to one vehicle per adult in the household.

**Table 6.** Transportation Trends

	<i>N/Total</i>
<b>Travel Time To SCC</b>	
15 min or less	10/43
Between 16 min to 30 min	13/43
Between 31 min and 1 hour	10/43
More than 1 hour	10/43
<b>Mode of Transportation to Last SCC Appointment</b>	
Drive-I drove myself	8/43
Drive-Someone Else Drove Me	2/43
Public Transit	15/43
Uber/Lyft or Taxi	11/43
Walking	6/43
Biking	1/43
<b>Level of Transportation Difficulty</b>	
Very Difficult	8/43
Somewhat Difficult	20/43
Not Difficult at All	13/43
<b>All modes of Transportation to SCC in the last 12 months</b>	
Drive-I Drove Myself	10/43
Drive-Someone Else Drove Me	8/43
Public Transit	29/43
Uber/Lyft	17/43
Paratransit	1/43
Walking	11/43
Biking	4/43
<b>Vehicles Per Adult</b>	
No Vehicle Access	22/37
Access to Less than 1 Vehicle	12/37
1 Car Per Adult	3/37



## Factors Associated with Lateness or Missing an Appointment

About half of participants reported being late to an appointment by more than 20 minutes, and about half reported missing an appointment in the last twelve months because of transportation issues. Participants who used public transportation had higher rates of being late than those using other modes of transportation, with 8 out of 10 participants using public transportation reporting being late by more than 20 min. Rates of being late to an appointment were similar across the length of trip and race and ethnicity.

In the survey, when asked why participants were more than 20 minutes late, five out of the ten participants who responded reported unreliable bus service as the cause of their tardiness. Two of the participants I spoke with over the phone mentioned how difficult it can be to make it to an appointment on time since the buses are often not running on schedule and how drivers sometimes skip stops when buses are too full. In the survey, one participant mentioned that they were late because Uber/Lyft service took a long time to find them a driver, two participants mentioned traffic, and one person mentioned a lack of parking as

the reason why they were late to their appointment. One of the interviewed participants recalled having to allot an excessive amount of time to get to her appointment to account for unreliable rideshare and public transportation travel times. She mentioned that when using Uber/Lyft, she usually waits a long time to get a driver because drivers often cancel on her. Similarly, when taking public transportation, she often must wait long for the bus to come. This participant relies on a walker, so it is easier for her to take Uber/Lyft to her appointment instead of using public transit.

Participants who used public transportation also had the highest rates of missed appointments compared to those using other forms of transportation. Of the 13 participants who used public transit, nine missed an appointment over the last 12 months. Additionally, participants with trip

**Table 7.** Characteristics Associated with Being Late or Missing an Appointment

	At least 20 min late		Missed Appointment	
	Yes	No	Yes	No
<b>Mode of Transportation</b>				
Drive-I drove myself	3	3	3	5
Drive-Someone Else Drove me	1	0	1	1
Public Transit	8	2	9	4
Uber/Lyft or Taxi	2	6	5	4
Walking	3	2	1	4
<b>Length of Trip</b>				
15 min or less	4	2	3	6
16 min to 30 min	5	5	6	4
30 min to 1 hour	5	4	3	6
1 hour or more	3	3	7	2
<b>Race &amp; Ethnicity</b>				
Latinx/Hispanic	8	7	10	7
White	2	5	2	9
Black	2	1	1	2
AIAN	0	2	1	1
Asian	1	0	1	0
<b>Gender</b>				
Female	8	9	14	7
Male	7	4	4	10
<b>Housing Insecure</b>				
	4	4	7	2
<b>Total</b>	<b>17/31</b>	<b>14/31</b>	<b>19/37</b>	<b>18/37</b>

lengths longer than an hour had higher rates of missed appointments, with 7 out of 9 participants who had to travel for over an hour to their last SCC appointment missing at least one appointment in the previous 12 months. Additionally, Latinx/Hispanic individuals experienced higher rates of missed appointments than individuals from other races, with 10 out of the 17 individuals who identified as Latinx missing at least one appointment in the last 12 months. In contrast, only a small share of individuals (2 out of 11) who identified as white missed an appointment in the previous 12 months. Patients who experience housing insecurity in the past 12 months also had high rates (7 out of 9) of missed appointments.

Respondents who missed their appointment expressed similar reasons for delaying healthcare as those who were late. Over half of respondents who missed an appointment shared that the bus did not come as scheduled or skipped their stop because it was too crowded. Some participants also mentioned they did not have money to pay for the bus, and two respondents noted that the trip on the bus was long and often required multiple transfers. Two people who used Uber/Lyft reported that the driver either never showed up or took too long to show up. In both situations, participants missed their appointment. Participants who drove or were driven by someone else mentioned that not having someone available to drive them, not having money to pay for gas, not finding parking, or traffic as reasons why they ended up missing their appointments. For all modes of transportation, participants often arrived late for their appointment, but clinic staff could not accommodate them, so they had to reschedule their appointment. Overall, unreliable transportation due to buses not running on schedule, a lack of available drivers, or traffic led participants to miss or be late to their appointments, thus causing them to delay accessing healthcare.

## **Limitations**

The survey sample size is relatively small; therefore, it is likely not representative of SCC patients. When comparing survey participant demographics to the demographics of participants served by the clinic overall, I found an overrepresentation of white participants in the survey. Almost half (14 out of 33) of survey participants identified as white, yet only 20% of the participants served by SCC identified as white. Of the participants who completed the entire survey, only 9 out of 36 completed it in Spanish. Additionally, the survey underrepresents uninsured individuals. While 37% of participants served by SCC lack insurance, only 3 out of 36 participants lacked insurance within the survey sample. Thus, while the findings are informative regarding the needs of some participants, they might not capture the transportation challenges of those with the highest levels of transportation need.

## Patients' Suggestions for Improving Transportation

In the survey, participants were asked to select three factors to improve their experience with the transportation modes they utilize to get to their SCC appointments. Below I discuss the most common recommendations for each mode of transportation.

The top suggestions for respondents who used public transit included increased public transit frequency and reliability and cheaper fares (Table 8). Some participants also mentioned a more direct bus or train line without transfers and shorter bus or train rides. Additionally, some participants noted that increased safety, more benches, shade, or lighting at the bus or rail stop, and better sidewalks would improve their experience. Finally, two participants suggested closer bus or train/rail lines and ensuring that bus stops were next to the curb.

For Uber/Lyft riders, participant concerns centered around cost and payment-related issues (Table 9). Having money to pay for a ride, having a fixed price, and paying for the ride with cash or pre-paid debit card would improve their experience getting to their SCC appointment. Additionally, some participants noted that having SCC book their ride-hailing rides would enhance their experience using the service to get to healthcare appointments. Finally, two participants mentioned that knowing their driver would improve their experience using Uber/Lyft to get to healthcare. During the short interview, one participant I spoke with said that he was able to start using Lyft after he learned from an online group that his insurance, LACare, provided ride-hail services. However, he noted that he had to book the ride two days in advance. Another participant noted that she was able to start using Lyft once she learned that the city she lived in, West Hollywood, provided a \$100 voucher for Lyft rides for older adults and people with disabilities. Thus, it appears that many patients learn about transportation resources through word of mouth.

**Table 8.** Improving Public Transportation Experience

	<i>Count</i>
More frequent bus or train/rail service running on schedule	15
Cheaper fares	10
A more direct bus or train/rail line without transfers	6
Increasing safety at the bus or train/rail stop	5
A shorter bus or train ride	4
Adding benches, shade, or lighting at the bus or train/rail line	3
Fixing sidewalks	3
A bus or train/rail line stop that is closer to my home	2
Ensuring the bus stops are next to the curb	1

**Table 9.** Improving Uber/Lyft Experience

	<i>Count</i>
Having money to pay for the ride	8
Having SCC book the ride-hail service for me	6
Having a fixed price to pay for my ride	5
Getting to pay for my ride with cash or a pre-paid debit card	5
Knowing my driver	3

For those who drive or are driven by someone else to the clinic, the most prevalent suggestion was parking availability at the clinic (Table 10). However, while this was the most common suggestion, lack of parking was not as prevalent in questions where participants discussed why they were late or missed their appointment. Regardless, some participants who drive themselves did experience trouble finding parking. This can lead them to be late to their appointments or completely miss the appointment if the clinic cannot accommodate them. Additionally, participants noted that having someone available to drive them or a vehicle available when they need it and being able to compensate someone for driving them would help their experience getting to SCC appointments. This is unsurprising given that most people in the survey do not have a vehicle or have less than one vehicle available per adult in the household. Some participants also noted that getting help paying for gas or repairing their vehicle would improve their experience getting to healthcare.

**Table 10. Improving Driving Experience**

	<i>Count</i>
Having a parking spot available when I get to the clinic	8
Having someone who can drive me available	5
Getting help paying for gas or repairing my car	4
Having a vehicle available when I need it	3
Being able to compensate someone for driving me	2

There were not a lot of participants who provided suggestions for how to improve the experience of getting to healthcare via paratransit, biking, or walking. However, one person suggested having support paying for their ride, having SCC book their ride, and not having to pre-schedule a ride home as ways to improve their experience getting to healthcare via paratransit. Additionally, one person mentioned that bike lanes would improve their experience biking to appointments at SCC. Most participants did not have suggestions for improving their experience in terms of walking and instead noted that it was a great way to get to the clinic. Two participants noted that cleaner streets and more safety would improve their experience walking to the clinic. One person also indicated that they often opted for walking because the buses were unreliable, even though it was an hourlong trip on foot.

In addition to providing information about how each mode of transportation could be improved, participants also provided suggestions for how SCC could help enhance their experience getting to appointments. Most participants suggested having SCC provide transportation via voucher or pre-paid card to pay for an Uber/Lyft or taxi or shuttle service to take them to their appointment. Two noted that because buses can be complicated and unreliable, they wanted support getting to the clinic via an Uber/Lyft or taxi. Additionally, several participants reported that getting help booking rides to and from their appointments would be extremely helpful. Some people mentioned that they had received these types of support through SCC's Lyft program and that this support had been beneficial. In general, participants noted that assistance in planning their trip to the clinic would be beneficial. Several participants also advocated for added flexibility when arriving late to an appointment since transportation to the clinic, regardless of the transportation mode, can be unreliable due to traffic. Two participants mentioned that more parking would be very

helpful in getting to their appointments. One participant noted that fulfilling multiple healthcare needs in one visit would help improve their experience getting to SCC.

Additionally, two participants mentioned that having clinics in other parts of Los Angeles County could be helpful. A participant I spoke with who lived far from an SCC site mentioned that they lived closer by when they first started going to SCC. Once they moved further away from the clinic, they continued going to SCC because they liked the quality of care they received at the clinic. One participant traveled for over two hours to get to her appointments via public transportation, sometimes with her infant child. She mentioned that she usually receives a Lyft trip from SCC for pediatric appointments. Future research should focus on participants with long travel times, mainly via public transportation, to understand their travel needs better and explore ways to connect them to quality healthcare that does not require such long travel trips.

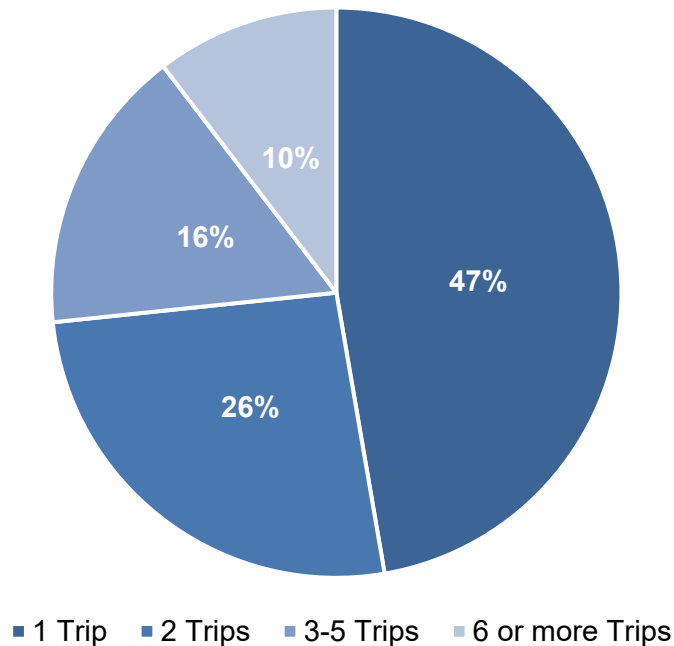
Furthermore, throughout the short interviews, multiple participants discussed their difficulties getting to their appointments on time. The five participants I spoke with through the interviews, regardless of the mode of transportation they utilized, had experienced transportation delays that made them late for their appointment. Participants described that sometimes even if they were late, the clinic could accommodate them. However, this was not always the case. All participants mentioned that they had had to reschedule their appointments multiple times because of their transportation delays, even if they had only been late by 10 minutes. All participants said that they would use a text or phone call service that allowed them to let the clinic know that they were running late but were nearby.

The difficulties participants experienced resulted in them having to reschedule their appointment and potentially cause delays in their care. One of the participants I spoke with mentioned that it is challenging for her to get time off work for medical appointments. Bus delays have caused her to miss multiple appointments since the clinic is often not able to accommodate her late arrival. However, given her inflexible work situation, she often cannot reschedule her care. This has led to worsening health, including inability to get a new prescription to manage her health condition. In addition to increase flexibility with appointment times, given how difficult it can be to get to medical appointments, multiple participants mentioned they would like to be able to fulfill more than one healthcare need during their visits in order to reduce the number of times they have to come to the clinic. Providing flexibility in schedule, including accommodating participant appointments during unexpected health visits, could increase support participants' access to healthcare.

## What can be learned from the Lyft Intervention?

Before this study began, SCC had already begun addressing transportation challenges by offering free Lyft rides to patients. From January 2021 to August 2021, the SCC Lyft program provided transportation assistance to a total of 664 patients. As illustrated in Figure 6, most patients served by the program only took 1 or 2 one-way trips over this 8-month period. However, a small number of patients (10%) used the service more frequently, taking at least 6 or more trips during this time.

**Figure 6.** Trips Per Person Using Lyft Service from Jan 2021 to Aug 2021



The program provided 1955 one-way trips at a total cost of \$43,959 (Table 11). Overall, the average trip distance was 7 miles, the average travel time was 23 minutes, the average cost was \$22, and the average price per mile was \$5. The total number of trips increased each month and the program's cost rose in conjunction. In January, the program provided 33 trips and cost \$441. By August, the program provided 418 trips with a total cost of \$11,352. Due to factors outside of SCC's control, the average cost per mile and per trip price rose during the program. The average cost per mile fluctuated between \$3 to \$5 each month. Most trips were taken during the weekday (98%), between 12pm and 4 pm (66%), and were for locations between 5 to 20 miles from the clinic (49%).

**Table 11. Lyft Trip Summary by Month**

	<b>Total Rides</b>	<b>Total Cost</b>	<b>Trip Cost</b>	<b>Cost Per Mile</b>	<b>Trip Duration (Minutes)</b>	<b>Trip Distance (Miles)</b>
	N (%)	Sum (%)	Avg (SD)	Avg (SD)	Avg (SD)	Avg (SD)
<b>Total</b>	1955 (100%)	\$43,959 (100%)	\$22 (\$15)	\$5 (\$7)	23 (15)	7 (6)
<b>Month</b>						
January	33 (8%)	\$441(1%)	\$13 (\$5)	\$3 (\$1)	18 (8)	6 (4)
February	124 (6%)	\$1,732 (4%)	\$14 (\$7)	\$4 (\$6)	19 (10)	6 (4)
March	196 (10%)	\$3,514 (8%)	\$18 (\$10)	\$4 (\$3)	21 (11)	6 (5)
April	257 (13%)	\$5,912 (13%)	\$23 (\$15)	\$4 (\$3)	25 (14)	7 (6)
May	339 (18%)	\$6,498 (15%)	\$22 (\$16)	\$6 (\$13)	22 (15)	7 (7)
June	280 (14%)	\$6,498 (15%)	\$23 (\$16)	\$6 (\$5)	22 (13)	7 (7)
July	308 (16%)	\$6,887 (16%)	\$22 (\$12)	\$5 (\$5)	23 (14)	6 (5)
August	418 (21%)	\$11,352 (26%)	\$27(\$16)	\$6 (\$7)	25 (21)	8 (8)
<b>Day of Week</b>						
Weekday	1907 (98%)	\$42,879 (98%)	\$22 (\$15)	\$5 (\$7)	23 (15)	7 (6)
Weekend	48 (2%)	\$1,080 (2%)	\$22 (\$16)	\$4 (\$4)	23 (14)	9 (8)
<b>Time of Day</b>						
Early Morning (Before 7 am)	14 (1%)	\$606 (1%)	\$43 (\$21)	\$3 (\$2)	47(26)	18(16)
Morning Peak (7 to 10 am)	358 (18%)	\$8,296 (19%)	\$23 (\$15)	\$5 (\$7)	23 (20)	7 (7)
Midday (12 to 4 pm)	1293 (66%)	\$27,681 (63%)	\$21 (\$14)	\$5 (\$8)	22 (13)	7 (6)
Afternoon Peak (4 to 7 pm)	235 (12%)	\$6,274 (14%)	\$27(\$18)	\$6 (\$4)	25 (15)	6 (5)
Late Evening (7 to 10 pm)	55 (3%)	\$1,102 (3%)	\$20 (13)	\$4 (\$2)	20 (9)	7 (5)
<b>Distance from Clinic</b>						
Less than 2 miles	350 (18%)	\$4,216 (10%)	\$12 (\$4)	\$12 (\$15)	1 (0)	8 (3)
2 to 5 miles	587 (30%)	\$9,000 (20%)	\$15 (\$5)	\$5 (\$2)	3 (1)	16 (5)
5 to 20 miles	955 (49%)	\$27,060 (62%)	\$28 (\$13)	\$3 (\$1)	10 (4)	30 (39)
More than 20 Miles	63 (3%)	\$3,683 (8%)	\$58 (\$32)	\$2 (\$1)	28 (7)	59 (15)



The standard deviation for cost per mile fluctuated significantly across different categories, highlighting price inconsistencies. During May, while the average cost per mile was \$6, the standard deviation was \$13. Similar, the average cost per mile and standard deviation were higher on weekdays (\$5 avg, \$7 SD) relative to weekend trips. Additionally, while trips during the afternoon peak had the highest average cost per mile (\$6), midday trips had the highest standard deviation (\$8). These trends point to greater price fluctuations during the middle of the day compared to peak traffic periods. Furthermore, while trips that were less than two miles had the lowest average trip cost (\$12), they also had the highest average cost per mile (\$12), with the highest standard deviation for cost per mile (\$15). The discrepancies indicate how unpredictable prices can be, particularly for shorter trips. Price inconsistencies can make it difficult for SCC and patients to budget for trips.

In terms of travel destinations, SCC designed the Lyft program to allow patients go get to the services they needed, and not solely for trips between their home and the clinic. Most of the trips (84%) either started or ended at a clinic location, 15% of the trips either started or ended at an alternative medical service, and 2% of the trips either started or ended at a social service location.

**Table 12. Lyft Trips by Origin and Destination**

<b>Destination</b>	SCC Clinic	Other	Medical Service Outside SCC	Social Service	Total
<b>Origin</b>					
SCC Clinic	3.0%	43.4%	1.7%	0.4%	48.5%
Other	35.2%	1.5%	6.9%	0.3%	43.9%
Medical Service Outside SCC	0.6%	5.9%	0.2%	0.1%	6.8%
Social Service	0.1%	0.5%	0.2%	0.1%	0.8%
<b>Grand Total</b>	<b>38.9%</b>	<b>51.3%</b>	<b>9.0%</b>	<b>0.9%</b>	<b>100.0%</b>

Trip origins and destinations are broken down into the following categories: SCC Site, Medical Service Outside SSC, Social Services, and Other. SCC Clinic includes any of the 4 SCC clinics. Medical Services include any identifiable medical service origin or destination, including hospital or specialty care. Social services include origins or destinations that provide non-medical services, including Social Service Administration (SSI) offices and The Center-Community Ends Homelessness. Origins or destinations classified as "Other" are locations that didn't fall into any other categories. As described in the Methodology section, these locations are likely people's homes, work, or other areas where patients spend time before or after their appointment. Only 1.5% of trips started and ended at a location labeled as "Other"; therefore, it is unlikely that patients used the program for activities that SCC did not envision to support the patient's health. Trip cost, duration, and distance were consistent across trip origin and destination, with the average cost per mile ranging from \$4 to \$6 across trip tips. For a detailed breakdown of trips by origin and destination, please refer to Appendix B.



While this analysis provided some insights about the Lyft program, I was unable to identify whether the program prioritized people with the most transportation challenges due to the lack of data collected. Future analysis of the Lyft program could benefit from increase data collection, including linking patient's Lyft ride usage to appointment attendance and other healthcare outcomes. These types of analyses are critical in providing SCC with data to justify investment in its Lyft program and better understand which patients to target for these services.

## Summary of Findings

While most SCC patients tend to live close to one of the clinic sites, many patients live further than 5 miles away from a clinic site across LA County, thus creating challenges in providing a single solution for patients' transportation needs. Additionally, a high share of uninsured patients who seek care at SCC live in South LA, potentially highlighting a need for a satellite SCC site in this area. Overall, the high share of patients traveling from further than 5 miles points to a lack of affordable and accessible healthcare in LA County. Of the patients screened for the study, fewer than expected experienced transportation challenges that resulted in late clinic arrivals or missed appointments. However, for those who did experience challenges, most tended to rely on public transit or on modes other than driving themselves to get to appointments. Overall, patients want more reliable and low-cost options for public transit and other shared mobility options, including relying on others to drive them to their appointments. The Lyft program appears fairly successful, as indicated by its growing popularity and use, but price variation makes it difficult for the clinic to accurately budget for these costs. The following section outlines recommendations on strategically addressing these transportation challenges.

# Recommendations

This study evaluates the transportation needs of patients needs at SCC. Throughout this study, lack of reliability, affordability, and accessibility were emerging themes regarding patient transportation challenges. The series of recommendations below address these key challenges.

## Increase Flexibility and Communication Around Appointment Times

### ***Provide a way for patients, particularly those utilizing public transportation or ride-hail, to inform the clinic when they are running late for their appointments***

Throughout the survey and interviews, patients discussed how buses not running on schedule, ride-hail drivers canceling rides, traffic, and uncertain parking availability create delays in getting to appointments. Often, patients are running late to their appointments, but they have no way of letting the clinic know. Calling or texting patients, particularly those taking public transportation or ride-hail, 15-20 minutes before their appointment time could help with scheduling if a patient is running late. SCC could focus on providing these services to patients who use public transportation or ride-hail services since these patients tend to have higher levels of uncertainty when traveling.

### ***Create transparent and flexible policies around lateness***

Patients mentioned inconsistency regarding late policies across clinics. Some patients noted that even if they were only 10 minutes late, they were forced to reschedule their appointments for another time. Creating a flexible, consistent late policy that considers patients' transportation challenges could help patients better plan for their appointments. Additionally, given how unreliable transportation options can be for patients, the clinic should consider testing different lateness policies that accommodate patients' needs while maintaining the clinic's efficiency.

### ***Consolidate appointments for healthcare services***

Given how difficult it can be for many patients to make it to SCC, multiple patients express a desire for consolidated appointment services. Pre-scheduling appointments on the same day when possible and providing flexibility in rescheduling appointments if unexpected healthcare needs arise might improve patients' ability to get to healthcare.

### ***Hire a transportation coordinator to help patients plan their trips***

Planning for trips to SCC can often be challenging for patients. Hiring a patient coordinator could help connect patients to transportation resources and help patients develop a plan to consolidate appointments and allocate appropriate travel time to make it to their appointments on time.

## Improve Data Collection Around Transportation Needs

### ***Collect transportation and sociodemographic information through the Patient Satisfaction Survey***

Continue to include transportation-related questions in the patient satisfaction survey to learn more about patients' transportation challenges. Additionally, include questions regarding sociodemographic information, including insurance status, race, and vehicle access questions can help to further tailor transportation supports to those most in need.

### ***Collect transportation information through electronic medical records***

While booking an appointment, SCC could consider asking patients how they plan to get to their appointment and if they foresee any issues with their transportation. During the appointment, staff can ask patients about the mode they took to get to the clinic and any transportation challenges they encountered. When following up with patients who missed an appointment, staff could record any transportation issues patients experienced that prevented them from getting to SCC. Keeping track of transportation-related information can help SCC identify patients with the highest levels of transportation challenges to better utilize resources to support their needs.

### ***Track how patients' use of the Lyft program matches their healthcare appointments***

Most patients from January to August 2021 only utilized the Lyft program once or twice. However, it's unclear why patients use the service at these rates with the currently available information. It could be that patients only had one appointment during the eight months, that the specific transportation option wasn't available for one trip, or that patients were unsure how to book the service for additional healthcare trips. A better understanding of how patients' Lyft intervention trip use matches their appointments can help SCC ensure that patients who need transportation assistance get connected to appropriate services.

### ***Identify who qualifies for travel assistance via insurance or who might be eligible for paratransit services provided by the city***

Collecting data on patients who use the Lyft program, are often late for or miss appointments can help identify patients with insurance that can cover their travel costs. Patients utilizing the Lyft program or who are usually late or miss appointments might be eligible for paratransit services such as ACCESS, Cityride, the Beverly Hills On-demand, or other services provided by operators across Los Angeles County. Understanding where patients live and what medical services they need to access can help identify what transportation options might be available to them.

## Diversify Transportation Vouchers and Funding to Increase Transportation Affordability for SCC and Patients

### ***Train staff on how to connect patients to insurer-provided travel assistance other alternative travel services***

SCC should train staff on the different types of assistance available for patients, including how to connect and help patients book rides through their insurance and identifying which paratransit services might be available to help a patient get to particular healthcare services. Additionally, as mentioned above, SCC could invest in hiring a transportation coordinator to connect patients with transportation resources and plan appointments around transportation access.

### ***Host transportation fairs at an SCC clinic with local transit providers to help patients sign up for services***

Many of the patients served by SCC might not be aware of the transit options available to them. SCC should invite LA Metro, ACCESS, LADOT, and other local transportation operators and local public insurance providers such as LACare, who provide transportation assistance to patients to SCC. Connecting patients directly with transportation providers can help patients sign for services and new transportation options to help them get to SCC and other services they might need.

## Expand Care to People Living Further than 5 miles from the Clinic

### ***Increase mobile health access for patients who are 5 to 10 miles away***

About 17% of SCC patients live within 5-10 miles of the clinic. If SCC considers adopting mobile health services, neighborhoods within this area might be a good target for patients to get some healthcare services via mobile vans.

### ***Consider opening a satellite site in South LA***

Opening a satellite site in South LA could help improve access to healthcare for the many uninsured patients traveling to SCC for healthcare. Further research is needed to assess where a clinic could be located to best serve patients. However, uninsured patients might be traveling to the clinic for healthcare services because they don't have closer options. A nearby clinic would reduce travel barriers to healthcare for this population.

### ***Learn more about patients who commute for longer than 90 minutes***

Given that many patients live far from the clinic, SCC should investigate why patients seek care at SCC. SCC should primarily focus on patients with long travel times who are often late or miss appointments to understand their travel needs better. SCC can then provide these patients with specialized transportation support and mobile healthcare or connect patients to other clinics

closer to their homes or work. These interventions can help reduce missed appointments for SCC and increase patient access to care.

## **Work with Local Transit Providers to Improve Service**

### ***Advocate for improved midday transit service***

Patients frequently cited a lack of reliable public transportation as a major barrier to getting to their appointments on time. Additionally, the highest demand for Lyft trips occurs in the middle of the day. The middle of the day is when transit tends to be the most unreliable. Therefore, SCC should encourage LA Metro and LADOT to increase their midday service to ensure that SCC patients have reliable options to get to healthcare appointments.

### ***Improve paratransit services available for people with disabilities and older adults***

For patients who cannot use public transportation options, improving access to municipal paratransit systems could help connect patients to healthcare. SCC should encourage transportation agencies to make it easier for patients to sign up for service and increase on-demand paratransit options. Dial-a-ride services typically require patients to wait up to 1 hour for pick-up and drop-off, which can significantly inconvenience patients. Instead, SCC should encourage transit providers to enhance on-demand subsidies for riding taxis or Lyft/Uber services in vehicles that can accommodate people with diverse mobility needs.

# Conclusion

From unreliable transportation options to lack of affordability and limited accessibility, getting to healthcare appointments can be difficult for patients at SCC. Despite these challenges, many patients continue to seek care at SCC because they value the quality of service. Increasing flexibility around appointments, diversifying transportation funding, expanding care to patients living further away from current SCC sites, and working with local transportation providers are strategies SCC can pursue to address patients' transportation challenges. Through investment in transportation, SCC can improve access to its clinics and ensure that quality healthcare is a right rather than a privilege.

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# Appendix A: Screening and Survey Questionnaires

## Screener

1. What other modes of transportation do you use to get to medical appointments at the Saban Community Clinic? (Check all that apply)
  - a. Private vehicle—I drove myself
  - b. Private vehicle—Someone else drove me
  - c. Bus
  - d. Metro
  - e. Taxi
  - f. Uber/Lyft
  - g. Paratransit/Door-to-Door (e.g., Access Services or CityRide)
  - h. Medical Transport Van
  - i. Walked
  - j. Biked
  - k. Other (please specify) \_\_\_\_\_
2. In the past 12 months have you been late or missed an appointment because of transportation?
  - a. No (if so, not eligible)
  - b. Yes
    - i. **IF Yes** What were the transportation problems? (Text entry)  
\_\_\_\_\_

(ONLY FOR PEOPLE WHO SAID YES TO HAVING BEEN LATE OR MISSED AN APPOINTMENT)

The Saban Community Clinic is working with UCLA to understand the transportation challenges you and other patients in this clinic face. The study will focus on the transportation issues you might encounter when traveling to an appointment. If you say decide to participate, you will first be directed to more information about the survey. You might be able to receive a \$15 dollar gift card for your time.

3. Would you like to participate in the survey?
  - a. Yes (IF YES, Patient Eligible for Study)
  - b. No

## Full Instrument

### RECENT VISIT TRAVEL INFORMATION

We'd like to know about how you usually travel to your medical appointments at Saban. Please think about the most recent time you went in person to a medical appointment or treatment.

1. Which Saban Community Clinic location did you visit for your last in-person appointment?

- a. Virgil Family Health Center
  - b. Melrose Health Center
  - c. Hollywood Health Center
  - d. Beverly Health Center
  - e. Satellite Clinic at The Center
2. What was the purpose of your last visit to a Saban Community Clinic center? (Multiple choice, single answer, Factor 0-5)
- a. To complete a medical visit
  - b. To see a mental health provider
  - c. To see a gynecologist/OBGYN provider
  - d. To see a dentist
  - e. To receive diagnostic lab services
  - f. To receive specialty services (acupuncture, HIV or infectious disease treatment, pulmonology services)
  - g. To receive pharmacy services
  - h. Other (please specify) \_\_\_\_\_
3. How long did it take you to get to your most recent medical appointment or treatment at the Saban Community Clinic? (Multiple choice, single answer, Factor 0-3)
- a. 15 minutes or less
  - b. Between 16 minutes and 30 minutes
  - c. Between 31 minutes and 45 minutes
  - d. Between 46 minutes and 1-hour
  - e. More than 1 hour
4. How did you get to your most recent medical appointment or treatment at the Saban Community Clinic? (Check all that apply)
- a. Private vehicle—I drove myself
  - b. Private vehicle—Someone else drove me
  - c. Bus
  - d. Metro
  - e. Taxi
  - f. Uber/Lyft
  - g. Paratransit/Door-to-Door (e.g Access Services or another medical transport van)
  - h. Walked
  - i. Biked
  - j. Other (please specify) \_\_\_\_\_
5. How difficult was it for you to get transportation for your most recent medical appointment or treatment at the Saban Community Clinic?
- a. Not difficult
  - b. Somewhat difficult
  - c. Very difficult
6. How commonly do you use this X(ADD DISPLAY LOGIC FROM QUESTION 4) to get to your medical appointments at the Saban Community Clinic?
- a. Always
  - b. Often

- c. Sometimes
  - d. Rarely (Almost Never)
7. What other modes of transportation do you use to get to medical appointments at the Saban Community Clinic? (Check all that apply)
- a. Private vehicle—I drove myself
  - b. Private vehicle—Someone else drove me
  - c. Bus
  - d. Metro
  - e. Taxi
  - f. Uber/Lyft
  - g. Paratransit/Door-to-Door (e.g., Access Services or CityRide)
  - h. Medical Transport Van
  - i. Walked
  - j. Biked
  - k. Other (please specify) \_\_\_\_\_

**TRANSPORTATION CHALLENGES: GENERAL**

Please think about your medical appointments and/or treatments in the past 12 months.

8. In the past 12 months, have you ever been more than 20 minutes late to an appointment at the Saban Community Clinic because of transportation problems?
- a. No
  - b. Yes
  - c. **IF Yes** (Text entry)
    - i. Describe the transportation problems that you faced that caused to be more than 20 minutes late to an appointment at Saban in the past 12 months. \_\_\_\_\_
9. 2. In the past 12 months, how often were you more than 20 minutes late to an appointment at the Saban Community Clinic because of transportation problems?
- d. Never
  - e. Rarely
  - f. Sometimes
  - g. Often
  - h. Always
10. In the past 12 months, have you ever missed an appointment at the Saban Community Clinic because of transportation problems?
- i. No
  - j. Yes
  - k. **IF Yes** (Text entry)
    - i. Describe the transportation problems that you faced that caused to miss an appointment at Saban in the past 12 months  
\_\_\_\_\_
11. In the past 12 months, how often did you miss an appointment at the Saban Community Clinic because of transportation problems?
- l. Never

- m. Rarely
- n. Sometimes
- o. Often
- p. Always

POTENTIAL SOLUTIONS/WHAT ARE THE SPECIFIC PROBLEMS

12. (If yes to they have taken Bus/Metro). Based on your experiences in the past 12 months, which of the following would have improved your experience with public transportation for your trip to healthcare at the Saban Community Clinic the most? (Please rank up to three options)
- a. Cheaper fares
  - b. A Metro/Bus stop that is closer to my home
  - c. A more direct Metro Bus or Train line without transfers
  - d. Adding benches, shade, or lighting at the bus stop
  - e. Ensuring the bus stops are next to the curve
  - f. Increasing safety at the bus stop
  - g. Increasing safety on the bus
  - h. More frequent bus service
  - i. Fixing sidewalks
  - j. A shorter bus ride
  - k. Other\_\_\_\_\_ (Please specify)
13. (If yes to they have taken Door-to-door/Medical Van). Based on your experiences in the past 12 months, In the past 12 months, which of the following would have improved your experience with paratransit services (door-to-door services such as Access Services/CityRide or other medical transport vans) for your trip to healthcare at the Saban Community Clinic the most? (Please rank up to three options)
- a. Getting to pay for the service with my tap card
  - b. Having support paying for my ride
  - c. Being able to schedule my ride the same day of my appointment
  - d. Being able to ride with a family member/friend/caregiver so they can accompany me to my appointment
  - e. Having Saban book my ride
  - f. Booking my ride online
  - g. Less wait time when getting picked up by the service
  - h. Getting a text or call notification when my ride is nearby
  - i. Not having to pre-schedule, a ride home
  - j. Other\_\_\_\_\_ (please specify)
14. (If yes to they have taken Ride-hail/Taxi). Based on your experiences in the past 12 months, which of the following would have improved your experience with ride-hail (i.e., Uber, Lyft) or taxi for your trip to healthcare at the Saban Community Clinic the most? (Please rank up to three options)
- a. Having money to pay for the ride
  - b. Getting to pay with cash for my ride



- c. Getting to pay with a pre-paid debit card for my ride
  - d. Having a fixed price to pay for my ride
  - e. Having Saban book the ride-hail service for me
  - f. Having someone help collapse my walking device into the vehicle
  - g. Having someone help me get in and out of the vehicle
  - h. Knowing my driver
  - i. Other \_\_\_\_\_ (please specify)
15. (If yes to they have taken Driving/BeingDriven). Based on your experiences in the past 12 months, which of the following would have improved your experience with driving or being driven for your trip to healthcare at the Saban Community Clinic the most? (Please rank up to three options)
- a. Getting help paying for gas
  - b. Getting help for repairing my car
  - c. Having a vehicle available when I need it
  - d. Having someone who can drive me available
  - e. Being able to compensate someone for driving me
  - f. Having a parking spot available when I get to the clinic
  - g. Other \_\_\_\_\_
16. (If yes to walking) Please describe that would help improve your experience walking to get to the Saban Community Clinic.
17. (If yes to biking) Please describe what would help improve your experience biking to get to the Saban Community Clinic.
18. Some community clinics are using vans to deliver mobile healthcare to their patients closer to where they live. How comfortable would you be receiving healthcare from a mobile van in your neighborhood?
- a. Very Comfortable
  - b. Comfortable
  - c. Neutral
  - d. Uncomfortable
  - e. Very uncomfortable
  - f. Depends on the type of care being provided
19. In your own words, what would you like for the Saban Community Clinic to do to help make your transportation to the clinic easier? (Text entry)
- \_\_\_\_\_

## SOCIODEMOGRAPHICS

We'd like to know more about you.

20. How many motor vehicles are available for regular use by people in your household?  
(Numeric entry)
- a. (Write 0 if none) \_\_\_\_\_ vehicles
21. Do you have a valid driver's license? (N/Y, Factor 0-1)
- b. No
  - c. Yes

22. Not including you, how many other adults live in your household? (Numeric entry)  
 d. (Write 0 if none) \_\_\_\_\_ adults
23. How many children under the age of 18 live in your household? (Numeric entry)  
 e. (Write 0 if none) \_\_\_\_\_ children
24. What is your age? (Numeric entry)  
 f. \_\_\_\_\_ years
25. What is your gender? (Multiple choice, single answer, factor 0-3)  
 g. Female  
 h. Male  
 i. Transgender Female  
 j. Transgender Male  
 k. Other \_\_\_\_\_
26. Are you Hispanic or Latino/a?  
 l. No  
 m. Yes
27. What race do you consider yourself? (Check all that apply)  
 n. White  
 o. Black or African American  
 p. American Indian and Alaska Native  
 q. Asian  
 r. Native Hawaiian and Other Pacific Islander  
 s. Some other race
28. Have you experienced homelessness or housing insecurity in the past year? (N/Y, factor 0-2)  
 t. No  
 u. Yes
29. In the past 12 months, have you been involved in the following systems?(N/Y, factor 0-2)  
 v. Jail  
 w. Prison  
 x. Probation/Parole  
 y. None of the above
30. Do you have a physical or mental disability or a chronic condition that limits your daily activities? (N/Y, factor 0-2)  
 z. No  
 aa. Yes
31. **IF Yes** How much difficulty do you have doing the following activities? (Grid, multiple-choice, single answer per row)

	No difficulty	Some difficulty	A lot of difficulty	Cannot do it at all
Seeing, even if wearing glasses?				
Hearing, even if using a hearing aid?				
Walking or climbing steps?				
Remembering or concentrating?				

Communicating with your usual language (for example understanding or being understood by others)?				
Self-care, such as washing all over or dressing?				
Traveling outside of your home?				

32. How would you generally rate your health? (Multiple choice, single answer, factor 0-4)

- a. Very poor
- b. Poor
- c. Fair
- d. Good
- e. Excellent

33. What type of health insurance do you have? (Check all that apply) (Multiple choice, multiple answer, factor 0-5)

- a. No insurance
- b. MediCal
- c. Medicare
- d. Private insurance (e.g., Blue Cross Blue Shield, Aetna, United Healthcare, NC State Health Plan, or similar)
- e. TRICARE
- f. Other (please specify) \_\_\_\_\_

34. What is your ZIP code? (Numeric entry, 5 digits) \_\_\_\_\_

## Appendix B: Characteristic of Lyft Trips by Origin and Destination

Table 13 provides information regarding the cost, duration, and distance of trips based on pick-up and drop-off locations. Overall, total rides from each origin/destination ranged from 2 trips (to/from Social Services) to 1537 (SCC to/from Other), with a corresponding total cost range of \$38 to \$35,124. The average trip cost ranged from \$14 (SCC to/from Social Services) to \$28 (Other to Other). In contrast, the cost per mile range was smaller, starting at \$4 (SCC to/from Social Services and Outside Medical Services to/from Social Services), and going up to \$6 (Social Services to/from Other). Trip distance ranged from 13 miles (to/from Outside Medical Services) to 29 miles (Social Services to/from Other and Other to Other). The duration of trips ranged from an average of 4 minutes (see table for list of trips) to an average of 15 minutes (Social Services to/from Other).

**Table 13.** Characteristic of Lyft Trips by Origin and Destination

	Total Rides	Total Cost	Trip Cost	Cost Per Mile	Trip Duration (Minutes)	Trip Distance (Miles)
	N (%)	Sum (%)	Avg (SD)	Avg (SD)	Avg (SD)	Avg (SD)
SCC to/from Other	1537 (78.7%)	\$35,124 (79.9%)	\$23 (\$16)	\$5 (\$5)	7 (6)	23 (14)
SCC to/from Outside Medical Services	45 (2.3%)	\$813 (1.8%)	\$18 (\$9)	\$5 (\$4)	5 (3)	19 (9)
SCC to/From SCC	57 (2.9%)	\$941 (2.1%)	\$17 (\$9)	\$5 (\$2)	4 (4)	16 (9)
SCC to/from Social Services	9 (0.5%)	\$124 (0.3%)	\$14 (\$4)	\$4 (\$2)	4 (2)	16 (7)
Outside Medical Services to/from Other	250 (12.8%)	\$5,553 (12.6%)	\$22 (\$11)	\$5 (\$3)	7 (7)	24 (23)
Outside Medical Services to/from Outside Medical Services	3 (0.2%)	\$47 (0.1%)	\$16 (\$14)	\$5 (\$3)	4 (5)	13 (8)
Outside Medical Services to/from Social Services	6 (0.03%)	\$154 (0.4%)	\$26 (\$13)	\$4 (\$1)	8 (3)	24 (7)
Social Services to/from Other	14 (0.7%)	\$296	\$21 (\$15)	\$6 (\$5)	15 (29)	29 (32)
Social Services to/from Social Services	2 (0.6%)	\$38	\$19 (\$1)	\$5 (\$2)	4 (2)	20 (5)
Other to Other	30 (1.5%)	\$851	\$28 (\$13)	\$5 (\$5)	9 (5)	29 (13)