2-8-2018

# Improving Transportation Access to Health Care Services

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# Improving Transportation Access to Health Care Services

Project Number

**NCTR #79062-20**

Prepared For

**National Center for Transit Research**

**USF Center for Urban Transportation Research**

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**June 2019**

**2019**

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Technical Report Documentation Page

| 1. Report No. | 2. Government Accession No. | 3. Recipient's Catalog No. |
|---|---|---|
| | | |

| 4. Title and Subtitle | 5. Report Date |
|---|---|
| Improving Transportation Access to Health Care Services | June 2019 |
| | 6. Performing Organization Code |
| | |

| 7. Author(s) | 8. Performing Organization Report No. |
|---|---|
| Kristine M. Williams and Nicole Tremblay | NCTR 79062-20 |

| 9. Performing Organization Name and Address | 10. Work Unit No. (TRAIS) |
|---|---|
| National Center for Transit Research<br>Center for Urban Transportation Research<br>University of South Florida<br>4202 E Fowler Avenue, CUT 100, Tampa, FL 33620-5375 | |
| | 11. Contract or Grant No. |

| 12. Sponsoring Agency Name and Address | 13. Type of Report and Period Covered |
|---|---|
| Research and Innovative Technology Administration<br>U.S. Department of Transportation, Mail Code RDT-30<br>1200 New Jersey Ave, SE, Room E33, Washington, DC 20590-0001 | Final Report<br>1/1/2018 – 6/30/2019 |
| | 14. Sponsoring Agency Code |

| 15. Supplementary Notes |
|---|
| |

16. Abstract

Limited access to health care affects tens of millions of Americans daily, most of whom are identified as transportation disadvantaged – that is, unable to transport themselves due to age, income, disability, or some other factor. This research aims to illuminate the problem of transportation access to health care, along with solutions for overcoming gaps and barriers to such access. National and statewide studies are first reviewed to create context for the problem. Documents from local transportation planning bodies and health departments are also analyzed to determine the state of health care access in the Tampa Bay Region, particularly Hillsborough County. Case studies providing potential solutions are detailed in the third section of the report. This research then culminates in a strategic plan framework, presenting six objectives, specific actions to reach these objectives, and brief guidance for sharing responsibility and locating funding opportunities. Each strategy is also accompanied by case studies and contact information where relevant. The framework is intended as a strategic planning resource for use by Hillsborough county planning and social service agencies in improving access to health care services for the transportation disadvantaged, as well as by other communities facing similar challenges.

| 17. Key Word | 18. Distribution Statement |
|---|---|
| Transportation disadvantaged, health care, accessibility | |

| 19. Security Classif. (of this report) | 20. Security Classif. (of this page) | 21. No. of Pages | 22. Price |
|---|---|---|---|
| Unclassified | Unclassified | 60 | |

## Acknowledgements

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# Executive Summary

Limited access to health care affects tens of millions of Americans daily. Most of the affected populations are identified as transportation disadvantaged, meaning persons who are unable to transport themselves or purchase transportation due to physical or mental disability, income status, or age. Unmet health-related needs for these vulnerable populations include lack of transportation to and from health education, mental health and substance abuse programs, dialysis centers, follow-up visits, medical testing, and other health care services.

Primary reasons for lack of healthcare access have been described as: limited availability of public transportation, lack of transportation options serving late-night or weekend needs, payment processing difficulties, high out-of-pocket costs for transportation, limited capacity of transit systems to handle wheelchairs and scooters, and inadequate pedestrian facilities and safety. A lack of transportation options, especially among elderly persons, also leads to social isolation and worsening health.

This study identifies national best practices in addessing health care access issues through mobility management, service coordination, and interagency partnerships. Chapter 1 introduces the topic of transportation access to health care. Chapter 2 outlines academic literature and national studies that address gaps and barriers to access. Some insights from the literature include strategies for enhancing non-emergency medical transportation (notably coordination and brokerages), as well as types of transportation gaps experienced by TD persons. These range from individual issues, like lack of knowledge of available resources, to institutional issues, such as lack of transit connectivity and interagency cooperation.

Chapter 2 also includes a review of transportation disadvantaged plans for Hillsborough County, the broader tri-county region (Hillsborough, Pasco, and Pinellas Counties) and the State of Florida, as well as local health care plans for Hillsborough and Pinellas Counties. Fragmentation and redundancy of services, along with coordination, appear as key themes throughout both national and local studies.

Chapter 3 presents case studies from around the United States, including what strategies were used, what populations were reached, and – where available – what the cost savings to service providers would be under each program. Traditional strategies, like volunteer drivers and flex routes on public transportation, are described along with more innovative strategies, such as transportation network companies (e.g. Uber and Lyft), smart cities, and mobile health units. The importance of improved transit service and accessible pathways to transit stops and stations is also discussed. Chapter 4 presents a strategic plan framework for applying these findings to the Hillsborough County context, and Chapter 5 provides a summary of findings from the national and local knowledge search along with conclusions.

# Chapter 1
## Introduction

Millions of people across the U.S. are unable to provide their own transportation due to age, disability or income constraints. Although the size of this transportation disadvantaged (TD) population is not fully known, the U.S. Government Accountability Office states that the population is large, with about 40 million people 65 and over, 46 million people in poverty, and 3.6 million veterans having a service-related disability (GAO, 2014). In Hillsborough County alone, planners forecast that nearly 600,000 people will be transportation disadvantaged by 2040 (Hillsborough MPO, 2018). This population includes older adults, persons with disabilities, persons of low income, and children at risk.

Transportation disadvantaged (TD) persons often experience challenges obtaining transportation to and from non-emergency health care services. In a recent Hillsborough MPO forum, half of the 30 health and social service providers in attendance said their TD clients expressed concerns with transportation *every day* (Hillsborough MPO, 2018). Unmet needs included lack of transportation to and from health education, mental health and substance abuse programs, dialysis centers, follow-up visits, medical testing and other health care services. Primary reasons cited by forum attendees for lack of such access were limited availability of public transportation, lack of transportation options serving late-night or weekend needs, payment processing difficulties, high out-of-pocket costs for transportation, limited capacity of transit systems to handle wheelchairs and scooters, and inadequate pedestrian facilities and safety (Hillsborough MPO, 2018). Residents of assisted living facilities expressed an increased sense of isolation due to limited transportation options.

Applied research is sorely needed to determine how to help service providers better connect the growing TD population to the health services they need. The impact of such research cannot be overstated given funding shortages for public transportation, pressures to reduce Medicaid spending, growing demand for TD services, and the potential explosion in public costs for late or missed health care treatments. At the same time, emerging technology and mobility on demand services are creating opportunities for cost-effective and innovative solutions.

The objective of this study is to identify and synthesize national best practices in mobility management, service coordination and interagency partnerships to improve health care access for the transportation disadvantaged. Findings are used to develop a strategic plan framework for improving transportation access to health services in Hillsborough County, Florida.

This is the final report of the study. It details the results of a review of the literature on transportation-related barriers to health care and strategies to overcome these barriers. National and Florida-specific TD plans and studies are reviewed, along with national programs and initiatives representing institutional and technological innovations for improved health care service delivery.  A strategic plan framework is included, along with conclusions from the knowledge search.

# Chapter 2
## Gaps and Barriers to Health Care Access

Transportation disadvantaged (TD) populations include those persons unable to transport themselves or purchase transportation due to physical or mental disability, income status, or age. As noted above, this population generally includes older adults, persons with disabilities, persons of low income and children at risk. In Florida, the Transportation Disadvantaged Program coordinated by the Florida Commission for the Transportation Disadvantaged helps this population achieve independence by providing medical, employment, education and other life-sustaining trips (CTD, 2018).

The focus of this report is on non-emergency medical transportation (NEMT) and patient-centered transportation for the TD population, including taxis, transit, and ride-sharing services not provided by Medicaid or Medicare funded programs. Two primary strategies exist for providing NEMT: coordination and brokerages.

- Coordination can occur among agencies of all types, including public and private. The goal is to find areas of overlap with populations served by different providers, and then share resources to prevent redundancy of services.
- Brokerages use a central pool of resources (including vehicles and staff), and may also be public or private. Forty states currently use some kind of brokerage model for NEMT (Myers, 2015).
    - Public brokerages are subject to rules that prohibit referrals and conflicts of interest, and must be funded separately even if they are created within an existing agency, like a transit agency (Myers, 2015). This separation can cause issues for coordination by complicating bidding and reporting processes.
    - Private brokerages are contracted by state governments, keeping the cost to the states fixed and encouraging efficiency on the brokering agency's part.

Other models for NEMT provision include fee-for-service, a mix of brokerage and fee-for-service (especially in highly urbanized regions), exclusive reliance on public transit, and managed care options. Managed care is a new model that places responsibility for transportation on Medicaid care or insurance providers. Figure 1 and Figure 2 show the distribution of these models by state according to a report for the National Conference of State Legislatures (Myers, 2015).

**LEGEND**
- Public Brokerage Model
- Private Brokerage Model
- Mix of Private, Nonprofit and Public Brokerage Models
- Mix of Brokerage and Fee for Service
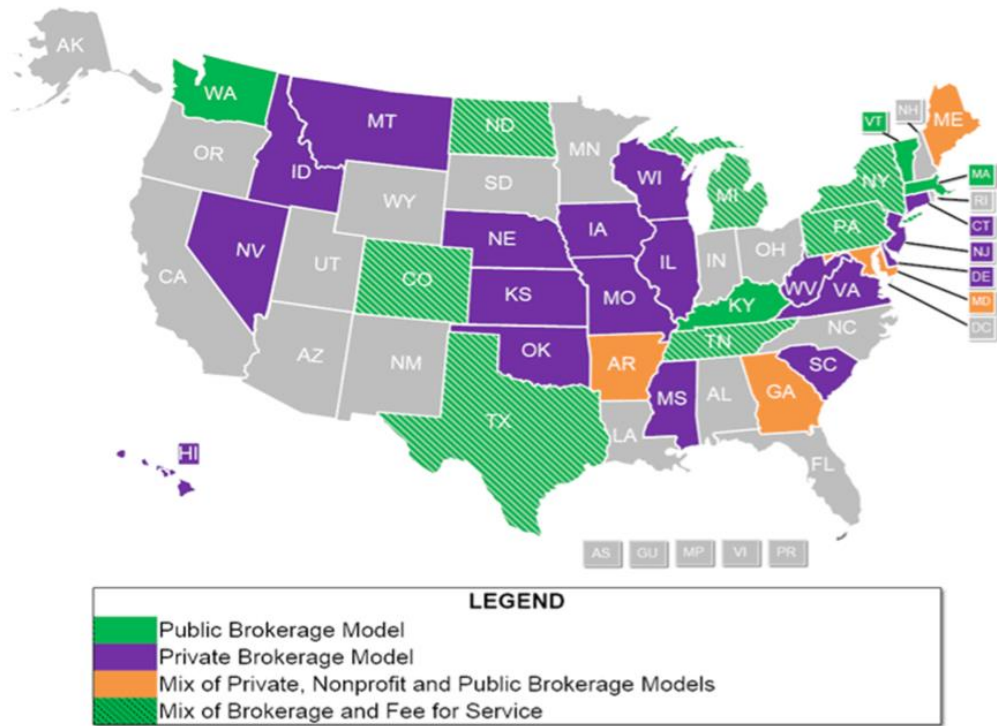
**Figure 1. Modes of service delivery**

Source: Myers, 2015



**LEGEND**
- Mix of Managed Care, Brokerage, and Fee for Service
- Managed Care Model
- Public Transit Model
- Fee For Service Model
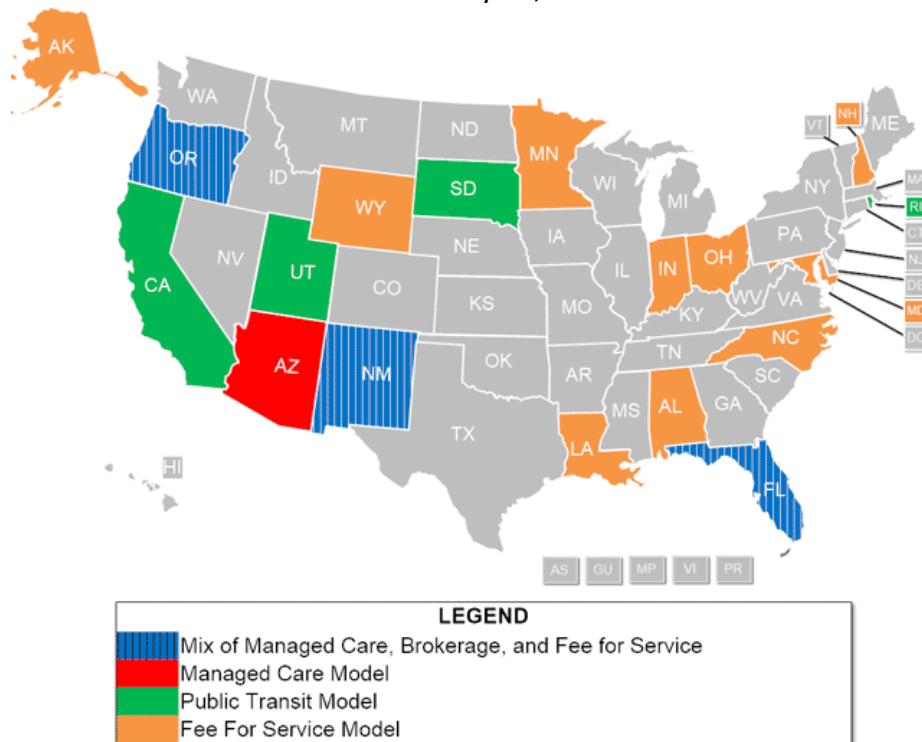
**Figure 2. Mix of other service models**

Source: Myers, 2015

Barriers to health care access can come from five main areas: infrastructure, cost, vehicle access, distance and time burden, and policy (Health Research and Educational Trust, 2017).

- Infrastructure relates to transit routes, availability, and user population, as well as safety on roads, trains and buses.
- Cost can refer to transit fares or the cost to maintain a personal vehicle.
- Vehicle access includes access to personal and shared vehicles.
- Distance and time burden can be considered relative to population density and type of transportation; for example, the time between buses along a fixed-route is a time burden, as is traffic volume and limited access to personal vehicles.
- Policy barriers noted include budget cuts for transportation projects, driver's license requirements, and lack of planning for transit options in low-income communities.

Common gaps include a lack of connectivity among transit options, lack of reliable personal transportation, and knowledge of available resources. Inadequate coordination among service providers, including health care, transit, and insurance providers, results in numerous service gaps and is perhaps the most noteworthy barrier to health care access from an organizational perspective. As the literature reveals, coordination can lower costs and increase efficiency of connecting TD populations to health care services, regardless of demographic and economic conditions in the populations served.

**Academic Literature**

Literature regarding access to health care considers the following types of transportation: walking, bicycling, personal or shared automobile, demand-response (rides in a vehicle from a community provider), and public transportation. Transportation as a barrier to access is measured by time, distance, and cost, as well as existing infrastructure and knowledge of available routes and methods for travel.

***Florida TD Programs Return on Investment Study***

The Marketing Institute at Florida State University's College of Business conducted an inquiry into the cost-effectiveness of TD investment by the State of Florida (Cronin, et al., 2008). Although TD investment does not produce any direct revenue, it does stimulate economic activity and avoid unnecessary costs. In this study, state funding was operationalized as grants provided through the Commission for Transportation Disadvantaged. Benefits were measured using the mean benefit provided by State-funded transportation providers across eight diverse counties.

Health care costs to be avoided by TD investment include those related to nursing homes ($5,000 per month), hospital stays (averaging $7,900 each), and adult day care ($25-100 a day). Funding medical trips generally leads to better preventive care, which can delay or preclude the need for nursing homes or hospital stays (Cronin, et al., 2008). Prenatal care is also improved by TD investment, as it has been found that pregnant women who cannot access their appointments due to cost or transportation typically do not receive care at all. This can lead to significantly increased costs during and after delivery – and throughout the child's life.

Using a conservative estimate for preventing hospital stays and other costs, Cronin et al. (2008) calculated that for every dollar spent on TD services, the state receives an $11.08 return on its investment. Hillsborough County has an estimated return of $8.05, while Pinellas County receives $13.04 and Pasco County sees a return of $12.29 (Cronin, et al., 2008).

### *Traveling Towards Disease Study*

A meta-analysis of 61 studies on transportation barriers to health care access found that the percentage of affected populations in an area varies between 3% and 67% (Syed, et al., 2013). Such a wide range in the findings prompted an evaluation of measurements, demographic differences, and impacts.

Distance was found to be highly subjective in determining travel burdens to health care, while income and existing health conditions were more reliable in identifying transportation as a barrier. The potential for public policy to address interventions to improve access to health care is not a well-studied topic (Syed, et al., 2013).

Demographic analysis revealed that lower socioeconomic status led to more transportation barriers, which adversely impacted prescriptions filled and cooperation with treatment plans. These barriers are shown to delay or prevent care that could help patients avoid chronic conditions, complications of chronic conditions, and emergency room visits. Elderly populations were less likely to list transportation as a barrier overall, but the meta-analysis notes that lower-income elderly were not widely included and there was little to no discussion of safety and disability concerns in these 61 studies (Syed, et al., 2013).

Access to a vehicle was demonstrated to increase access to health care, regardless of socioeconomic status. Syed, et al. (2013) suggest modeling a health care program after existing interventions that provide access to vehicles for employment purposes, such as the Job Access and Reverse Commute grants awarded by FTA. Reimbursement for trips on public transportation or in private shuttles and taxis was also recommended as a way to potentially reduce fragmented care. Medicaid typically gives clients rides through their own contracted transportation providers, whose routes and schedules may overlap or cause service gaps; allowing clients to be repaid for trips on a non-Medicaid provider's service can be more convenient. Reimbursement for public transportation was also shown to increase the use of community clinics over urgent care centers or emergency departments, which can save costs for both patients and health care providers.

### National Studies

The Government Accountability Office and the Health Research and Education Trust have conducted reviews of the state of TD service, listing nationwide barriers to access for these groups.

***Government Accountability Office Report on TD Populations***

A 2003 report from the Government Accountability Office (GAO) aimed to characterize the federal programs that provide for TD services, identify coordination efforts among these programs, and assess any barriers to coordination that may exist. GAO found that sixty-two such programs existed, although their funding amounts for transportation were not always reported separately and therefore unknown.

At the time of this study, coordination activities were carried out by the Coordinating Council on Access and Mobility (CCAM) with representatives from the Department of Transportation (DOT) and the Department of Health and Human Services (DHHS). Although the Departments of Labor and Education provide funding and programming for TD services, these agencies were not represented on the Council. Other notable issues with the current state of the CCAM included a strategic plan that was not linked to its action plan (and a lack of measurable goals in both documents) and few references to coordination in the planning documents of its member agencies, DOT and DHHS (GAO, 2003).

The GAO provided a few examples of coordination activities in this report: coordinated planning, brokerage, and shared vehicle use.

- Coordinated planning tends to occur in a statewide or regional consortium. In a brokerage system, a central agency or transportation provider will arrange rides and manage clients for several different programs at both State and Federal levels (GAO, 2003).
- Shared vehicle use can work across multiple programs in an area; the report highlights this using a vocational rehab center in Arizona, where vans also pick up Jobs Administration clients and the two agencies split the cost of transporting clients for related purposes (GAO, 2003).

Benefits of these activities were noted as well. To illustrate potential for cost reduction, the authors cited Aberdeen, South Dakota, where the local transit agency has saved 20% per trip since consolidating, and three counties in New York that saved $92,000 in 2001 by entering into a brokering service and moving more clients in buses than taxis (GAO, 2003). Better customer service could be seen in programs like one in central Florida, where dispatch and scheduling services were consolidated. This allowed clients to find out the status of their rides with one call and resulted in better feedback about the quality of service (GAO, 2003). A third key benefit of coordination noted by the GAO was the reduction of stigma associated with specialized transport; when all clients used the same services and felt they were treated equally, this social burden was eased.

Obstacles to coordination listed in the report were numerous, including redundancy, inconsistency, and a lack of leadership. **Redundancy**, for example, might be a case where a for-profit provider runs two types of vehicles (e.g. for medical trips and paratransit) along the same routes at similar times. This happens because State-imposed fee structures or reporting requirements make interagency coordination of different riders too complex. **Fragmented**

**services** present another redundancy issue that runs across agencies. For example, passengers may be left stranded when they try to cross county lines or other service area boundaries. Fragmented services also require clients to understand multiple transportation systems, government programs, and eligibility requirements. These clients may find that the agents assigned to help them are unaware of how the whole complement of systems operates. On the provider side, rides may be limited by program funding source or type of ride, and by requirements demanding separate dispatch and reservation systems (GAO, 2003).

**Inconsistent requirements** presented a major barrier to coordination across three areas: service, reporting, and funding.

1. Service requirements might vary on dimensions of citizenship (which is required by the U.S. Department of Labor (DOL), but not the DOT), vehicle safety requirements (e.g., type of seatbelt or roof strength), or liability insurance policies.

2. Reporting inconsistencies can be enormous, as was shown in Florida's budget statements when new requirements for TD spending reporting were put into place. A statewide coordination program had shown $8 million in state and local expenditures, but the new reporting standards revealed a total of $224.9 million being spent across Florida on TD services (GAO, 2003).

3. Funding streams and cycles can also be inconsistent across Federal departments. For example, DOT funding flows from states to counties or cities, whereas DOL funding goes from states to local designees, and programs like Head Start can bypass states completely to fund local agencies directly (GAO, 2003).

**Lack of leadership** was a third major barrier to coordination, and could be seen at all levels of administration. Agencies administering DOT or DHHS programs were often not aware of the CCAM, partly because of the lack of references to it in their planning documents, but also due to the Council's limited visibility overall. Half of states had no coordinating body for TD services at the time of the GAO report, and in states that did have such a body there was little evidence of guidance for local implementation (GAO, 2003). Local program administrators also lacked critical data, particularly about eligibility and service overlap or redundancy, and it was shown in this report that local program leaders lacked commitment to coordinating activities (especially communication with other local leaders). Program administrators also shared concerns that coordination with other programs would cause their own clients to lose resources (GAO, 2003).

This report concludes with three recommendations to Congress to overcome these barriers and realize the benefits of coordination (*see also next section for updates*):

1) provide more consistent federal standards,

2) create a clearinghouse or website for guidance and communication, and

3) explore financial incentives or institutional mandates to coordinate.

***GAO Report on Non-Emergency Medical Transportation***

This report to Congressional Committees was completed in 2014, covering forty-two programs across six federal departments: the Departments of Agriculture, Education, Health and Human Services, Housing and Urban Development, Transportation, and Veterans' Affairs. Half of the programs studied were administered by the Department of Health and Human Services at the time of writing, and these programs provided funding primarily in the forms of capital investments (e.g. bus purchases) and reimbursements (e.g. bus passes).

As an update to the 2003 report, the GAO noted that eight new members had been added to the Coordinating Council on Access and Mobility (CCAM) as recommended. These included the National Council on Disability, the Attorney General, and the Departments of Agriculture, Education, the Interior, Labor, Housing and Urban Development, and Veterans' Affairs (VA). However, the CCAM had not met since 2008, nor had its members issued any guidance documents for states and localities, rewritten its expired action plan, or finalized a cost-sharing policy to be implemented by transit providers (GAO, 2014).

The report further noted that states tend to coordinate transportation services through designated coordinating bodies at both state and regional levels, including metropolitan planning organizations (MPOs) and local transit agencies. The Moving Ahead for Progress in the 21$^{st}$ Century Act (MAP-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) require that public transit-human services transportation plans coordinate services with other federal departments and agencies, particularly in order to receive federal funding. The report cited Florida's Commission for the Transportation Disadvantaged (CTD) as an example of a functioning state-level coordination body; the only other example listed was Maryland's inactive State Coordinating Committee (GAO, 2014). Medicaid and non-emergency medical transportation for VA clients typically do not participate in these coordination efforts or planning processes in any state.

Some of the strategies adopted by the member agencies of the CCAM included one-call/one-click centers for mobility management and inclusive planning efforts to involve TD populations in designs and plans for transportation systems. These efforts were developed as programs at the federal level, with funding and other support made available to state and local bodies for implementation (GAO, 2014). GAO (2014) findings note that fragmentation, overlap, and duplication issues exist at all levels of NEMT service programs and providers because of a lack of reporting standards and the variety in abilities of the populations served. Some agencies – most notably the VA – reported major restrictions to their coordination ability due to funding and management "silos."

This report concluded with three key recommendations for the CCAM to proceed, especially through activity by the Council's Health, Wellness, and Transportation Working Group (GAO, 2014):
- develop a new or updated strategic plan to address federal coordination of NEMT service;

- finalize cost-sharing policies and describe how to use them; and
- identify challenges related to coordinating Medicaid and VA NEMT with other federal programs, then develop recommendations sensitive to program integrity and fraud prevention concerns.

In response to requirements of the Fixing America's Surface Transportation (FAST) Act, Section 3006(c), three workgroups were created by CCAM in 2017 to address three areas: cost allocation, vehicle sharing policy, and interagency collaboration. The cost sharing workgroup discussed five barriers (FTA, 2017):
- eligibility requirements;
- matching requirements (CCAM agencies not designating funds as agencies for local match);
- program flexibility (recipients are not incentivized to share costs);
- lack of data; and
- lack of coordination.

The vehicle sharing workgroup determined four barriers (FTA, 2017):
- administrative burden;
- program restrictions;
- lack of information technology infrastructure (e.g. tracking software for vehicles); and
- lack of awareness of existing policies.

**Transportation Disadvantaged Service Plans**

Transportation Disadvantaged Service Plans (TDSPs) are developed every five years under CTD policy, and should be completed by each service area's Community Transportation Coordinator (CTC) and Planning Agency with approval by the Local Coordinating Board. Each TSDP includes a consistency review of other plans, a public participation component, a service area profile with forecasts, and an assessment of needs and barriers to coordination. TDSPs must also have a section related to goals, objectives, and strategies, as well as a specific service plan and description of cost/revenue allocation. These plans are updated annually to maintain concurrence with community needs and agency resources.

***Hillsborough County***

The Hillsborough County Transportation Disadvantaged Service Plan 2016-2021 (Hillsborough MPO, 2016) is enacted by the Community Transportation Coordinator (CTC) through the Hillsborough MPO and the County's Transportation Disadvantaged Coordinating Board. This plan as well as the 2018-2023 plan, published in June 2018, are reviewed in this section.

Available services in Hillsborough County include two services for the general public, HART and Sunshine Line, and other services for special populations. HART is the public transit operator in Hillsborough County and offers fixed-route local and express bus service, door-to-door paratransit service (HARTPlus), and flex-route neighborhood connector service (HARTFlex) across 35 local routes (Hillsborough MPO, 2018).

Sunshine Line is the CTC provider and operates as a partial brokerage, operating 60 vehicles. Sunshine Line is responsible for (Hillsborough MPO, 2018):

- providing pre-scheduled transportation services to the TD community through door-to-door rides;
- distributing bus passes purchased from HART (public transit) to low-income riders who are physically able to use HART services;
- referring members of the public to transportation programs for which they may be eligible; and
- promoting coordination among transportation services funded through federal, state, and local sources for the TD community.

As a partial brokerage CTC, Sunshine Line maintains a coordination contract with agencies receiving funds to serve TD populations. This contract allows information to be shared with the public and covers requirements such as safety, reporting, and insurance. The list of agencies currently contracted with Sunshine Line along with the services they provide can be found in Table 2.

The 2016-2021 TDSP contributed data for the current plan, and features the first public involvement forum effort ever conducted by the County, along with a survey of over 400 TD service providers and their clients (Hillsborough MPO, 2016). This effort brought to light a few key concerns:

- medical needs are unmet for over half of the county's TD population;
- rural areas remain the most underserved;
- safe and affordable housing near public transportation is lacking; and
- planning for bicycle and pedestrian infrastructure must consider TD populations, as 80% of TD persons and 60% ride a bike at some point in their trip.

Other insights from breakout groups in the forum revealed that lack of understanding of health care needs and options was an additional barrier preventing access to care. Suggested educational measures included information about availability of bicycle parking, ability of buses to accommodate wheelchairs, and resource officers to advise about safety and affordable housing (Hillsborough MPO, 2018). These are specific needs, intended to supplement education for users on how to navigate TD services, as well as education for providers regarding the needs of TD riders and clients.

Paratransit was another issue for TD persons; while they reported that their needs were usually met through the Hillsborough Area Regional Transit Authority's HARTPlus service and existing Medicaid programs, intercounty travel was not available for paratransit riders. This left 60% of clients without access to health care, according to survey responses from providers (Hillsborough MPO, 2018). Furthermore, it was noted that health care providers in Pinellas and Hillsborough counties are both at capacity for Medicaid recipients, so intercounty travel to Pasco would be necessary for anyone still needing treatment (Hillsborough MPO, 2018).

Figure 3 displays provider responses from the 2016-2021 TDSP showing the transportation options currently used by their clients, and Figure 4 demonstrates a consistent need for fixed-route service throughout the day. Figure 5 from the 2016-2021 TDSP shows a breakdown of clients by various categories of TD needs. Children-at-risk, a category displayed in Figure 5, are defined in Chapter 411.202, Florida Statutes, and include considerations such as drug exposure, abuse and neglect, developmental disabilities, having been born to minor parents, and being part of a family of migrant farmworkers. For all three of the question sets in the figures below, multiple answers could be chosen. For example, in Figure 3, a provider might have noted that patients typically walk to a fixed-route bus stop, thus using two of the given transportation options in one trip.
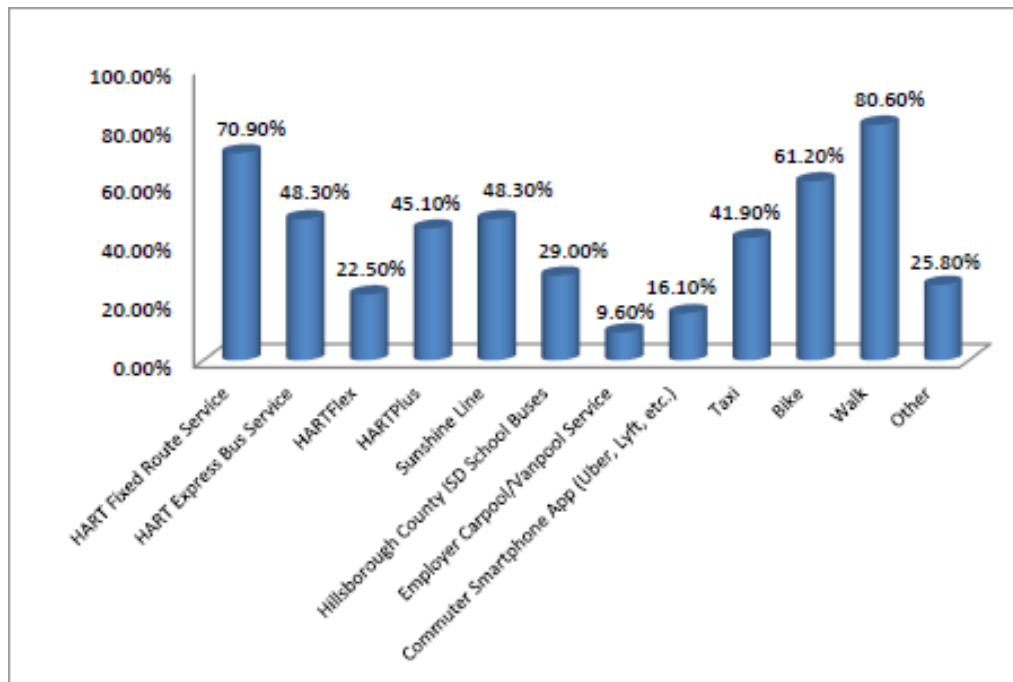


**Figure 3. Transportation options used by Hillsborough County TD populations**

Source: Hillsborough MPO, 2016
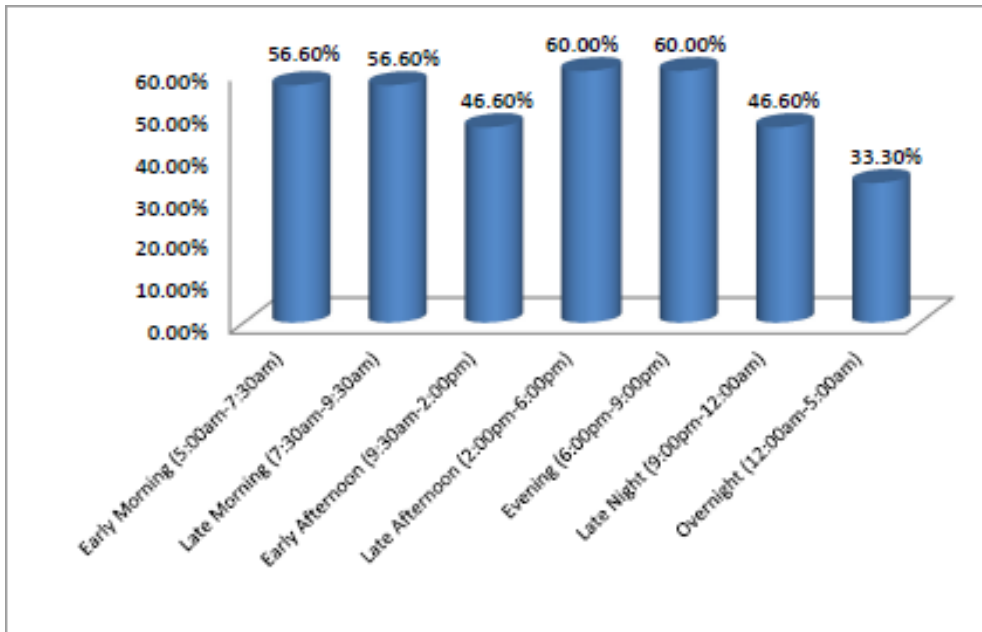
**Figure 4. Requests for TD services by time of day in Hillsborough County**

Source: Hillsborough MPO, 2016
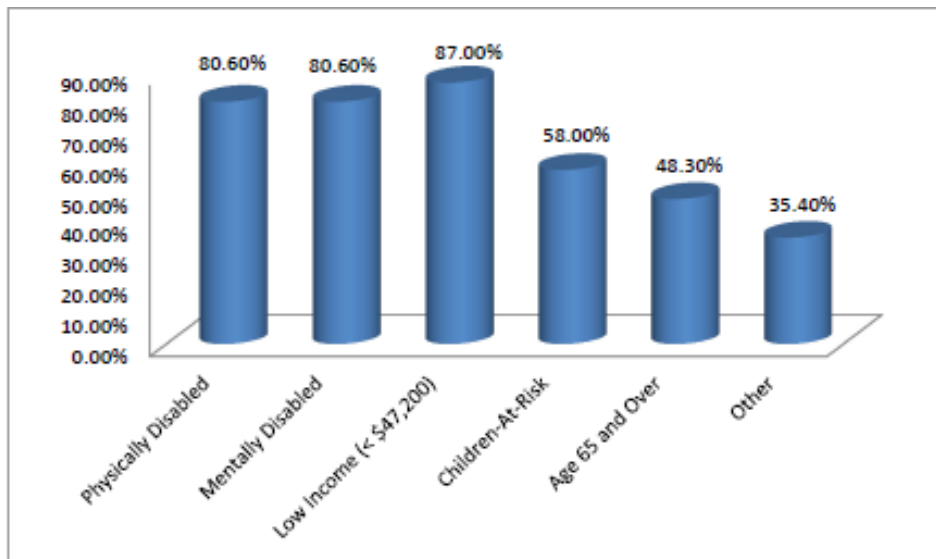


**Figure 5. Distribution of Hillsborough County TD populations by need**

Source: Hillsborough MPO, 2016

Specific barriers to coordination and access in Hillsborough County are listed in the needs assessment portion of the TDSP. Limited fixed-use bus service, gaps in bicycle and pedestrian facilities, and funding for Medicaid and other services stand out among these needs. Land use issues are also listed, citing a low-density development pattern, extensive water features, and a spatial mismatch between housing and jobs/services as the most important land use barriers

(Hillsborough MPO, 2016). Some focus group results highlighted mismatch in schedules for South County public transportation, making transfers difficult, and issues with access to dialysis care – for example, treatments begin at 5:45 am and transportation service is limited at this time (Hillsbrough MPO, 2018). Penalties for missing Sunshine Line or HARTPlus rides were also noted as too harsh on those experiencing illness and unavoidable conflicts (e.g. hospital stays). Grant funding previously available to Hillsborough's Sunshine Line service for TD clients has been reduced, affecting access to health care as well as employment and other necessary services (Hillsborough MPO, 2018).

The current general TD population accounts for 32.4% of Hillsborough County residents, a figure projected to grow at an approximate rate of 0.19% annually, or almost 1% every five years (Hillsborough MPO, 2016). These populations are served by the Sunshine Line and Hillsborough Area Regional Transit Authority (HART), which also operates a door-to-door paratransit service called HARTPlus, and a connector service with flexible routes known as HARTFlex. Forty-one percent of Sunshine Line trips serve medical purposes, with an additional 36% serving nutritional and other life-sustaining purposes (Hillsborough MPO, 2018).

The goals, objectives, and strategies section of the 2016-2021 Hillsborough TDSP includes two relevant objectives: "promote an efficient system" and "promote a reliable system." Strategies under the "promote an efficient system" objective include an annual meeting of social service providers to develop projects that could streamline TD trips and reduce fragmentation and duplication of services. The "promote a reliable system" objective is supported by strategies to identify capacity for the TD coordinated system to expand service and fund more trips, including trips on weekends, late nights, and early mornings. In the 2018-2023 TDSP, Hillsborough MPO created a Grievance Subcommittee to hear complaints, develop quality control procedures, and provide recommendations.

The most recent update of the TDSP includes results from an April 2018 Coordinated Contractors meeting. These stakeholders listed several concerns, primarily the expense of bus passes, distance of services from clients, lack of public transportation in suburban areas, and a need for more conversations with the public as well as among coordinated contractors. HART does offer a travel training program, but rider education about all services is needed, according to the results of the discussion. This is the first of such workshops ever hosted by the MPO.

### *Pinellas County*
The Pinellas County Transportation Disdvantaged Service Plan 2017-2022 is prepared by the county's MPO, Forward Pinellas, with cooperation from the Pinellas Suncoast Transit Authority (Forward Pinellas, 2018). This plan was most recently updated in May 2018 and addresses the county's development plan, service plan, and quality assurance procedures for TD service. According to demographic research from the University of South Florida, approximately 40% of Pinellas County's population is considered transportation disadvantaged, with a projected annual growth of 0.43% among TD populations (Forward Pinellas, 2018).

Since 2012, TD services in Pinellas County have been integrated with the Dial a Ride Transit (DART, a) program under the umbrella of the Pinellas Suncoast Transit Authority (PSTA), a move that streamlined eligibility and application processes for clients and providers (Forward Pinellas, 2018). Trip scheduling and reporting were also deemed more effective after this coordination began, and the County's bus pass program was able to be administered more easily. PSTA replaced a separate transportation management agency and currently operates contracts with taxi and van services for passengers who cannot ride by bus (Forward Pinellas, 2017). As for bus connectivity, PSTA has an inter-county agreement with HART and Pasco County Transit Authority (PCPT).

As the County CTC, Pinellas's MPO coordinates with fourteen additional service providers and transportation purchasing agencies (including the school system and Pinellas County Social Services). The full organizational structure, complete with a list of outside coordinators and operators, is shown in Figure 6. These outside contractors have largely taken over responsibility for Medicaid non-emergency transportation needs since funding decreases were implemented by the State in 2011 (Forward Pinellas, 20178. The CTC/MPO also provides 10- and 31-day unlimited bus passes to eligible clients under the "Go Cards" program. Other functions of the Pinellas CTC include authorizing the use of buses for certain youth outreach programs and performing annual monitoring and evaluation activities (Forward Pinellas, 2018).
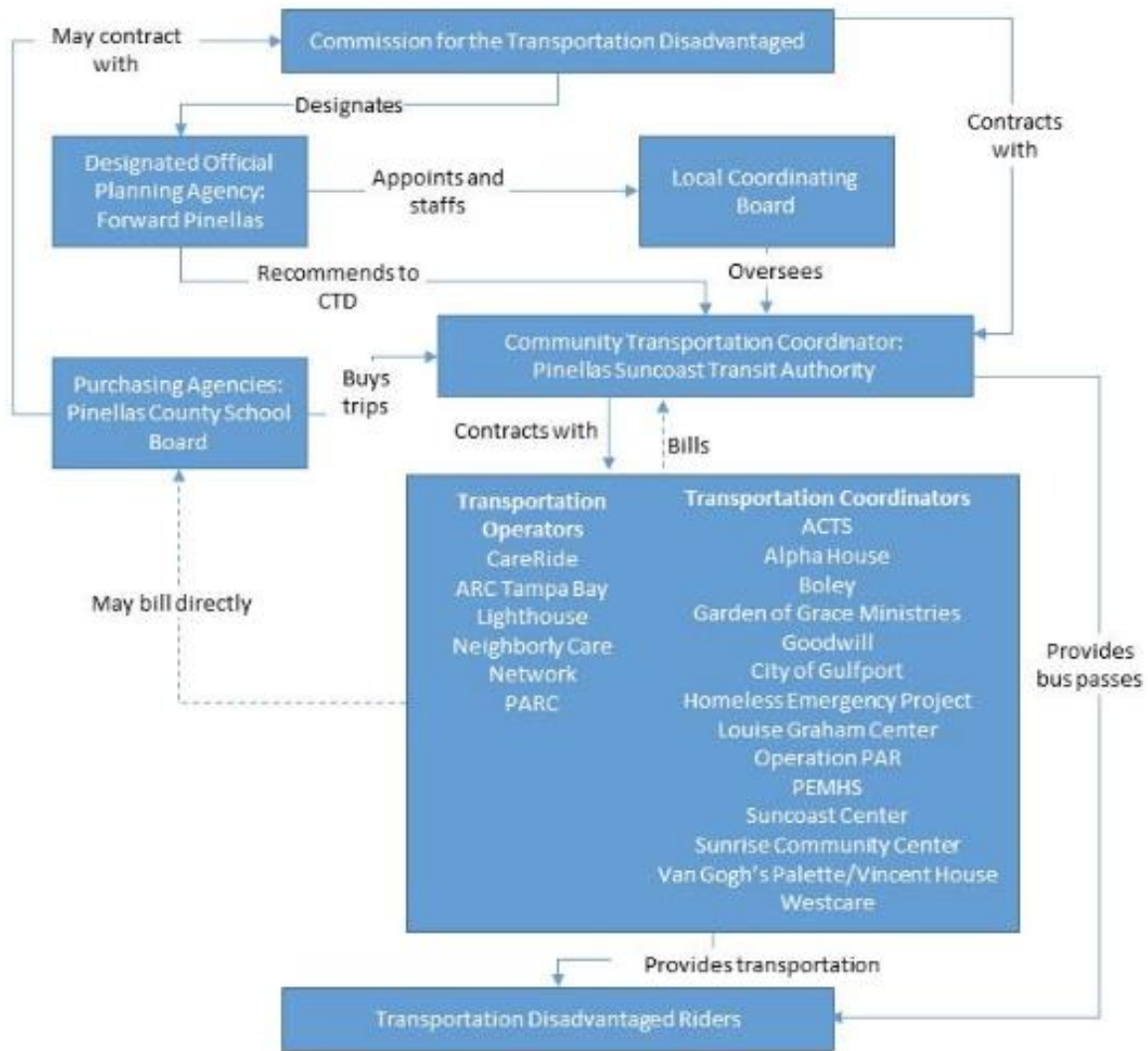
**Figure 6. Pinellas County's Community Transportation System organizational structure**

Source: Forward Pinellas, 2018

### *Tri-County Area Regional Mobility Needs Assessment*

The Tri-County Area Regional Mobility Needs Assessment is enacted by the three MPOs covering Hillsborough, Pinellas, and Pasco counties, in partnership with FDOT (Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014). This assessment was written in 2014 to prepare for an update to the 2009 Tri-County Access Plan. The report includes funding status, demographic profiles, a list of underserved facilities, and a review of existing plans.

Funding and provider status form the first chapter of the assessment. New Freedom program funding is allocated by the FTA for TD needs outside the scope of the Americans with Disabilities Act (ADA), and is intended to be flexible enough to allow coordination with DHHS or Department of Agriculture programs (Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014).

Some of the key programs in the tri-county area funded by this FTA program include the following:

- HART (Hillsborough):
  - ADA-compliant bus pads have been installed,
  - Sidewalk improvements have been made at select sites with high ridership and a presence of employment destinations, and
  - Bilingual trainers have been added to the travel training program for TD persons to learn about using fixed-route and paratransit services.
- PSTA (Pinellas):
  - A Mobility Manager position has been funded to coordinate TD and paratransit services;
  - A "one-stop" center has been developed to inform about travel training, trip planning, available providers and funders, and more personalized services for travelers with disabilities; and
  - A connector service offering door-to-door and route deviation opportunities has been funded for Dunedin and Palm Harbor.
- Neighborly Care Network (Pinellas):
  - EZride has been expanded to continue pre-paid, volunteer driver service for elderly and disabled clients to attend community activities.
- Faith in Action (Pinellas):
  - Northern Pinellas service to elderly and disabled for medical and business appointments has been expanded through the Independent Living Program.
- Center for Independence (Pasco):
  - On-demand TD service has been expanded through extended availability during all time slots, on-demand links to existing transportation options, and maintenance of a call center and outreach coordinator.
- Harbor Behavioral Health Care Institute (Pasco):
  - A Transportation Awareness Program has been implemented to encourage fixed-route transit ridership among TD populations.

Similar to the New Freedom program, the Job Access and Reverse Commute (JARC) funding was provided by the FTA to allow TD clients more access to employment and any job-related activities. Such programs were not specifically related to health care access, but their ability to help TD populations stay employed could directly impact these individuals' health and wellness.

Tampa Bay Area Regional Transportation Authority (TBARTA) keeps a provider inventory, including public service, for-profit providers, and non-profit social services agencies. TBARTA also maintains a service called myRIDE, similar to the "one-stop" center at PTSA, to aggregate resources for its seven-county service area. myRIDE can be accessed on the agency's website and through a call center operated by the Crisis Center of Tampa Bay (Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014). Clients can search online by eligibility, vehicle type, location,

and/or service provider name. Once an appropriate provider is identified, users of the website can view details about coverage, cost, hours, and more.

This assessment also includes a demographics section, featuring maps of mobility needs in each county by population category. Appendix A provides an example of these maps for Hillsborough County, showing elderly, low income, and limited English proficiency (LEP) groups.

Many long-term care facilities throughout the tri-county area were found to be in need of transportation service. In Hillsborough, however, there were also thirteen medical facilities without service, which were even unreached by HARTFlex. These are listed in Table 1. In Pinellas, only CMHC of Hudson, Inc. in Tarpon Springs lacked transportation service. In Pasco, the assessment identified this issue only for Florida Hospital at Connerton Long Term Acute Care in Land O'Lakes (Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014).

**Table 1. Hillsborough County Medical Facilities Not Reached by Transit Service.**

| Continucare Medical Center, Plant City | Sunlake Medical Associates, Lutz |
|---|---|
| Integrity Therapy Solutions, Inc., Tampa | St. Joseph's Hospital North, Lutz |
| Anista Westchase, LLC., Tampa | Neurorestorative Florida, Lutz |
| Sleep Testing Center at Westchase, LLC., Tampa | Specialist Doctors' Group, Plant City |
| Gulf-to-Bay Anesthesiology Associates, LLC., Lutz | Urgent Care USA, LLC., Plant City |
| Minute Clinic, LLC., Seffner | South Florida Baptist Hospital, Plant City |

Source: Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014.

In the review of plans and policies related to TD service, and in the public outreach effort, coordination was identified as a continued weakness across all counties. Some of the coordination needs differ; for example, Hillsborough would like to reduce the need for door-to-door trips, while Pasco aims to add more (and more personalized) door-to-door services. Educational and infrastructure improvements were cited by each of the public workshop summaries (Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014). Some examples of educational or customer service based improvements include real-time bus updates in Pasco County, travel training days in Hillsborough County, and expanded demand response service for all counties. Physical improvements highlighted include additional bicycle racks on buses, benches and braille at bus stops, and after-hours emergency vehicles that accommodate wheelchairs. All three counties' focus groups cited a need for local service expansion, but Pasco County also noted a special need to get riders to pain management clinics in Pinellas County by expanding regional service (Hillsborough MPO; Pinellas MPO; Pasco MPO; 2014).

***Transportation Disadvantaged State-Wide Service Analysis***

The Transportation Disadvantaged State-Wide Service Analysis (Gregg, et al., 2017) was prepared in 2017 by the Center for Urban Transportation Research. This report, prepared for the Florida Agency for Persons with Disabilities (APD), identified best practices and innovative examples of options for mobility, including opportunities to serve individuals with intellectual and developmental disabilities (Gregg, et al., 2017) . Current mobility options in the state of

Florida include: fixed-route services, demand response, taxi services, flex routes and route deviations, ride-sourcing applications, coordinated systems, voucher systems, and volunteer services.

Current best practices identified in Florida include APD waiver transportation, provided through a five-step process. This process is as follows (Gregg, et al., 2017):
1) "Customers receive individualized budgets based on an allocation formula or algorithm.
2) Customers choose transportation and other service providers based on their health and safety needs.
3) Waiver transportation providers must have valid service authorization prior to beginning services and billing via the Medicaid fiscal agent.
4) Transportation providers are reimbursed by month, mile or trip.
5) All transportation rates are negotiated."

These waiver services are provided regionally to over 34,000 customers, with another 20,000 on a waiting list due to funding limitations and the prioritization of children and people in crisis (Gregg, et al., 2017). Medicaid restrictions also limit access to these services, as rates must be negotiated with local providers and no standard process exists. Eligible waiver service providers include a wide range, from group homes and adult day programs to private for-profit and not-for-profit entities. Limited transportation providers are also eligible for waivers, including friends, relatives, and neighbors who are not for hire but do give rides to people they know (Gregg, et al., 2017). In the assessment of issues associated with waiver services, Gregg, et al. (2017), fare coordination, intercity travel, and fragmented and redundant services stood out.

Some national innovative practices identified for coordinating fares include regional identification cards and SmartCard paratransit payment systems. These reduce the need for individuals to be certified as eligible separately by each provider in their region, and encourage partnership among agencies. HART and PSTA have a similar pass option, called Flamingo Fares, available through a mobile app. Currently, the program is available for PSTA, HART, the TECO line streetcar, Jolley Trolley, and Looper Trolley; HARTPlus and DART are excluded from the Flamingo Fares payment system (HART Flamingo, 2018; Gregg, et al., 2017).

Intercity and first/last mile travel is sometimes addressed through private sector Transportation Network Companies (TNCs), including Uber and Lyft. TNCs allow the public sector to move from a service provider role into a "mobility manager" role, resolving issues of connectivity across city or county systems (Gregg, et al., 2017). This can alleviate the need for TD persons to navigate multiple transfers along their intended route. As public options, Greyhound and Ride Solutions are federally funded and intended to connect rural and urban areas; as the authors note, these providers are gradually reorganizing their services to match the private TNCs strategies by expanding service on express lines between more densely populated areas (Gregg, et al., 2017).

To address issues of fragmentation and redundancy, an APD Transportation Task Force met four times and discussed relevant concerns. These were shared with the report's authors and categorized into three areas of focus for coordinating with CTCs, Local Coordinating Boards, and Designated Official Planning Agencies (Gregg, et al., 2017).

Prioritized recommendations from this report focus on intellectually and developmentally disabled populations, but could be transferred to TD populations overall. One such recommendation calls for the development of a single point mobility information center (Gregg, et al., 2017). This type of center would provide customized trip planning and education about program eligibility, utilizing a range of technology to increase use and efficiency of various mobility options. Further benefits of these centers would include simplifying fare payment and easing customer transitions to different operational environments within the transportation system. Gregg, et al. (2017) estimate a budget of $500,000 each for two pilot projects to design, develop, and implement this option, based upon existing CTC capacity.

A second recommendation relevant to all TD populations addresses sensitivity training and a travel training program for transportation operators and all transportation personnel. These have been implemented in parts of the state already, but the authors suggest that a statewide curriculum be developed, specifically focusing on customer care and etiquette. This measure is expected to cost $150,000 to develop (a one-time cost), with additional resources required to complete delivery across various training modalities (Gregg, et al., 2017).

**Local Health Care Plans**

The Florida Department of Health completes a five-year plan known as the State Health Improvement Plan (SHIP) with the help of partner agencies and a SHIP steering committee. Each county in Florida undertakes a similar process, completing a Community Health Assessment (CHA) and then drafting a Community Health Improvement Plan (CHIP) based on findings from the Assessment. The CHA covers Community Health Status, Community Strengths and Themes, Forces of Change, and the Local Public Health System, drawing from existing primary and secondary data sources as well as original data collected from public input (FDOH-Hillsborough, "Community Health Assessment and Improvement Planning," n.d.).

***Hillsborough County CHA and CHIP***
The Florida Department of Health – Hillsborough County Community Health Assessment 2015/2016 (FDOH-Hillsborough, 2016) was conducted by a collaborative known as Healthy Hillsborough, formed in 2015 from a team of local hospitals and health centers along with DOH-Hillsborough. In the course of the assessment, 33.3% of respondents in focus groups reported access to insurance and/or transportation as the "most important health issue" in the community (FDOH-Hillsborough, 2016). Further data showed agency silos to be a major weakness, with significant duplication of services and a failure to develop parallel or collaborative plans. In the Forces of Change assessment of the CHA, coordination, collaboration, and access to care were prominent themes, with a lack of functional and reliable transportation listed as a key barrier to success in these areas (FDOH-Hillsborough, 2016).

The Florida Department of Health – Hillsborough County Community Health Improvement Plan 2016-2020 (FDOH-Hillsborough, 2018), revised in 2018, follows four priority areas: Access to Care, Behavioral Health, Obesity, and Health Literacy. One goal of the Access to Care priority area has been defined as "understand[ing] transportation-related issues," but the workgroup for this area decided not to pursue a transportation action plan in a 2017 Healthy Hillsborough Steering Committee meeting. This workgroup focused on developing videos helping clients with navigating health care systems, including topics such as where to get treatment beyond emergency departments and what to do after making a healthcare appointment (FDOH-Hillsborough, 2018). These have potential to impact use of NEMT and existing ride programs by increasing public knowledge about different care options.

### *Hillsborough County Community Transportation Coordinator Evaluation*

The Hillsborough County Community Transportation Coordinator Evaluation 2017 was prepared by the Hillsborough MPO to report on TD services in the county (Hillsborough MPO, 2017). Florida's Commission for the Transportation Disadvantaged (CTD) is a statewide program that aims to coordinate TD services across Florida. Local governments have their own TD programs, which are overseen by the CTD and a local Community Transportation Coordinator (CTC). Figure 7 demonstrates how this CTC is organized in Hillsborough County.

Of the two programs that serve TD populations in the county, Sunshine Line (specifically for the CTC) and HART (public transit), only the Sunshine Line was analyzed in this report. Measures used to evaluate its performance related to reliability, effectiveness, efficiency, availability, and safety (Hillsborough MPO, 2017).

Most reliability standards were met, including on-time performance and travel time, although "road calls" (maintenance calls that interrupt transportation while a vehicle is in service did not) (Hillsborough MPO, 2017). This points to a lack of functional vehicles, a concern noted in the FDOH-Hillsborough CHA (2016). All other targets were met in this 2017 report, including annual trips per capita, trips per revenue hour, accidents per 100k miles, vehicles per 100k persons, percentage of denials, and user input (complaints). Client surveys revealed a 97% approval rating of the Sunshine Line in a door-to-door survey, showing modest increases on criteria such as vehicle cleanliness, safe driving, and responses to complaints (Hillsborough MPO, 2017).

Recommendations from this evaluation include:
- increasing fleet reliability (35% of vehicles should be new as of 2017/18);
- implementing a new bus pass trip-counting procedure (shown to yield 40% fewer trips);
- expanding service to prevent increase in ride request denials (TD population projections forecast a 20% increase in trip demand); and
- training HART drivers to better assist elderly riders and persons with disabilities (Hillsborough MPO, 2017).
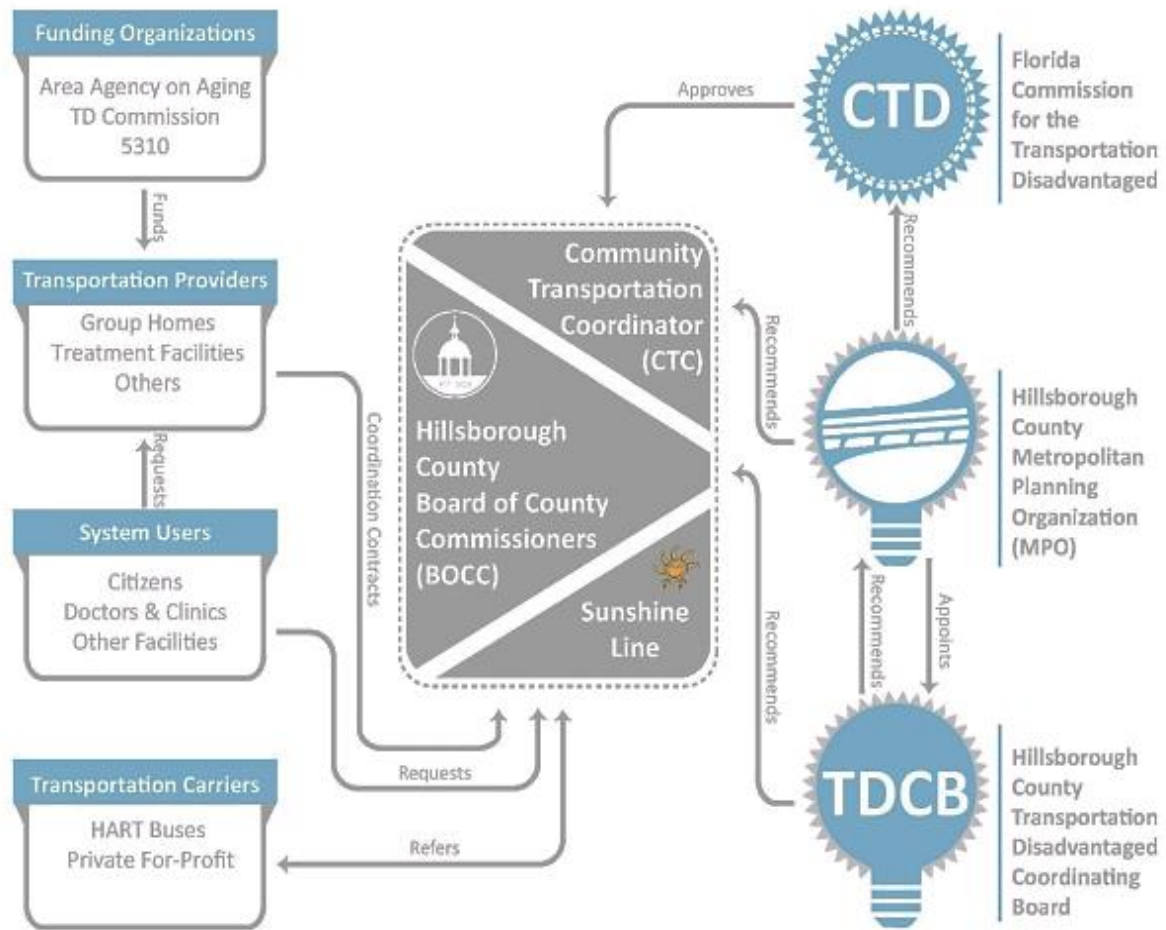
**Figure 7. Hillsborough County Transportation Disadvantaged Program organization**

Source: Hillsborough MPO, 2016

Sunshine Line also has contracts with some agencies receiving New Freedom funds that are able to provide their own transportation more efficiently and effectively than the CTC (Hillsborough MPO, 2017). These contracts cover reporting, insurance, safety, and more. This streamlines service provision, though Sunshine Line does not directly ask the agencies to provide rides. Coordination Contractors for Hillsborough County are listed in Table 2.

**Table 2. Hillsborough County Coordination Contractors, 2017.**

| Coordination Contractors | Transportation Services Provided |
|---|---|
| Agency for Community Treatment Services (ACTS) | Transportation to VA treatment, job interviews, schools, medical appointments, AA meetings, legal obligations, and social functions for ACTS disabled clients |
| Angels Unaware, Inc. | Transportation provided for eight group homes operated by the agency. Residents are transported to sheltered workshops and job sites; adult day care; medical appointments; social, educational, and religious activities; and for personal business such as shopping, banking, or other appointments |
| Brandon Sports & Aquatics Center | Transportation to the Center's after school, summer camp, and special needs sports and swim programs |
| Drug Abuse Comprehensive Coordinating Office | Transportation to treatment services and for residential treatment programs |
| Garden of Grace Ministries | Transportation within and around Hillsborough County, transporting the disabled and infirm mainly to medical appointments |
| HART ADA Complimentary Paratransit (Interlocal Agreement) | ADA paratransit |
| Human Development Center | Transportation for medical, training, education, life sustaining activities, employment, nutrition, and social trips |
| MacDonald Training Center, Inc. | Transportation to/from training centers |
| Mental Health Care, Inc. | Transportation for in-patient, residential, and homeless clients to medical, life skills, court appointments and any other necessary service to provide help |
| McClain, Inc. | Transportation for grocery trips, employment, medical, and educational needs |
| Northside Mental Health Hospital | Transportation for community support programs that provide a transitional network of social, residential, educational, and vocational activities to develop or refine skills necessary to function in the community. Transportation for clients to medication clinics, recreational activities, scheduled appointments, etc. |
| Quality of Life Community Services, Inc. | Quality of life trips where or when not otherwise available |
| Quest, Inc. | Transportation to/from residential facilities, including trips for employment, employment training, and community outings |

Source: Hillsborough MPO, 2017.

***Pinellas County CHA and CHIP***

The Pinellas County Community Health Improvement Plan 2013-2017 (FDOH-Pinellas, 2017) features four Priority Areas drawn from its most recent CHA: Access to Care, Behavioral Health, Health Promotion & Disease Prevention, and Healthy Communities & Environments. Under the Access to Care area, the goals include providing equal access to services and providers, as well as using health information technology to increase coordination and effectiveness and reducing infant mortality and morbidity (FDOH-Pinellas, 2017).

These goals are supported by an action plan, including activities, measures, and partners. The full action plan for this Priority Area is displayed in Appendix C. Some of the key features of Access to Care activities outlined by the Pinellas CHIP include using Uber for late shift TD services and implementing a mobile resource bus connection through the St. Petersburg Police Department (FDOH-Pinellas, 2017). These are aimed at increasing the use of health care services among all types of underserved communities, and will be measured by the number of adults receiving checkups during the year. Another key strategy and activity under this priority is the development and implementation of a Community Health Worker training program (FDOH-Pinellas, 2017). This type of program brings health care resources directly to TD populations and other underserved areas of the community, and a standardized training program can ensure better collaboration and cohesion within the health care system overall.

## Summary

This chapter reviewed studies on the following topics: Florida TD programs' return on investment, a meta-analysis of transportation barriers to health care, the Government Accountability Office's (GAO) assessment of TD issues at the federal level, and a second assessment by the GAO covering non-emergency medical transport. Local plans included in this chapter are: Transportation Disadvantaged Service Plans from Hillsborough County and Pinellas Couny, Tri-County Area Regional Mobility Needs Assessment, TD State-Wide Service Analysis, Community Health Assessments and Community Health Improvement Plans from Hillsborough and Pinellas Counties, and the Hillsborough County Community Transportation Coordinator Evaluation. Findings from this chapter inform the strategies outlined in Chapter 3 and the objectives presented in Chapter 4.

# Chapter 3
# Strategies for Improvement

Nationally, a variety of organizations and programs have targeted the needs of the transportation disadvantaged for improved health care access. This chapter inventories these efforts for insight into strategies for application in the strategic planning framework.

**Health Outreach Partners**

Health Outreach Partners (HOP), a capacity-building nonprofit in California, analyzed patient-centered transportation practices at community health centers and community-based organizations across the United States as part of their three-year "Transportation Models that Work" program funded by the Kresge Foundation (HOP, 2014). Six case studies were featured in this work, chosen for diversity across a number of dimensions including geography, models used, and populations served.

The following list details the name, location, and model approach of each case study:
- Helping Our Women
  - Setting: Rural; Provincetown, MA
  - Target population: Women with serious conditions
  - Model: Volunteer drivers (focus on understanding liability and training); Collaboration (CCRTA, Cape Air)
- Seniors First
  - Setting: Suburban/Rural; Placer County, CA
  - Target population: Seniors (along with disabled and low-income riders as a means of last resort)
  - Model: Door-to-door rides (volunteers); Health Express (professional drivers, collaboration with health centers)
- Finger Lakes Community Health
  - Setting: Rural; Penn Yan, NY
  - Target population: Migrant and seasonal farmworkers
  - Model: Basic transport to farmworkers ($5 co-pay case management program); mobile in-camp services (screening, education, appointments and referrals); school-based dental services; telehealth
- Morton Comprehensive Health Services
  - Setting: Urban; Tulsa, OK
  - Target populations: Homeless, elderly, and general populations
  - Model: Curb-to-curb program (home pickups, 24-hour advance notice); fixed social service route (free shuttle geared towards homeless); contracted transportation services (partner agencies, schools, shelters, etc.)
- El Rio Community Health Center
  - Setting: Urban; Tucson, AZ
  - Target populations: Low-income, uninsured, and homeless patients of El Rio

- Model: Door-to-door van service (patients and pharmacy delivery, prioritizes those without transportation or access to free/subsidized transportation); Van of Hope mobile unit (mobile unit providing assessments, case management, referrals, medications, and some specialty care)
    - Other key features: Car-reliant, significant resettled refugee population in Tuscon; El Rio leverages partner resources via grant money and staff time
- Kokua Kalihi Valley Comprehensive Family Services
    - Setting: Urban; Kalihi Valley, HI
    - Target populations: Seniors, immigrants, residents of public housing, and Kalihi Valley residents living at or below 200% of the poverty rate
    - Model: Shuttle services (to appointments and sanctioned activities related to wellness); free for public housing residents and Elderly Service Program clients (HOP, 2014).

The report found that the success of all six organizations was built on a few common factors. These included a mix of strategies and funding streams (rather than reliance on a single source), customized approaches, and commitment from the organization and its staff and/or volunteers. All of the organizations detailed here have a lean staff of two to five employees and rely on trained, professional, and competent volunteers for much of their driving and other direct services (HOP, 2014).  From this research, HOP developed the following recommendations (HOP, 2014):

- Evaluation
    - Supplementing interviews and focus groups with data on health outcomes, emergency care use, and preventive/primary service use is helpful in justifying transportation as a top priority.
- Funding
    - Use a diversity of funding sources, especially because most funding is limited to specific program types or populations.
    - Prepare for costs to include large initial outlays and maintenance costs, along with liability insurance and training (plus staff salaries, etc.).
- Coordination
    - Improve coordination to avoid redundancy and service gaps.
    - Address resistance to coordination rooted in protecting an organization's own clients; differing eligibility requirements; and lack of leadership, commitment, and information.
- Leadership
    - Encourage organizations to include either a user or a provider of NEMT/patient-centered transportation services on their decision-making board, or a representative of stakeholder groups relevant to TD populations.
- Bridging the Insurance Gap

- o Consider that those receiving insurance through the Marketplace still may not have resources to access care, and there may be as many 6.4 million who remain uninsured.
  - o Provide transportation solutions for the uninsured like volunteer drivers, hospital networks, and telehealth.
- Leverage Non-Profit Hospitals' Charity Care Requirements
  - o Participate in non-profit hopsitals' ACA-mandated community health needs assessments every 3 years.
  - o Request funds from non-profit hospitals by making a case for savings and increased quality of care through transportation.

Health Outreach Partners also published a follow-up resource booklet in 2016, titled "Transportation and Health Access: Where Are We Now and Where Can We Go?" This booklet summarizes findings from HOP's biannual needs assessment of community health centers, giving a primer on transportation as a barrier to health care access nationally (HOP, 2016). Figure 8 condenses the strategies developed from this updated resource.



**Figure 8. Strategies for improving health care access**
Source: HOP, 2016

**Rides to Wellness Community Scan Project**

This 2017 Federal Transit Administration project, also conducted by HOP, used two methods of study to understand and address barriers to health care access: 1) a national survey, and 2) community profiles.

The first goal of the project was to assess the magnitude of the problem in terms of cost and time. While the authors found no studies that isolated costs of missed appointments due to transportation barriers specifically, some research from the 2000s demonstrated costs of missed appointments overall. One survey estimated that an average of 62 missed appointments per day in one health system led to $3 million in avoidable costs. Another demonstrated that in a large family practice, missed appointments can result in a 3-14% annual revenue shortfall (HOP, 2017).

This initial research guided a cross-sectional, mixed-methods study to reinforce data about the frequency and cost of missed appointments and to determine strategies to address transportation barriers (HOP, 2017). The study used a 25-question survey with a mix of short answer, Likert scale, and ranked response question types. Results demonstrate that 87.1% of respondents found missed appointments a "moderate to serious" problem (with urban care providers more likely to report the problem as "serious"), and no health center surveyed reported that missed appointments were not a problem. Eighty-six percent of respondents indicated that transportation barriers were a serious issue for their clients, particularly in suburban areas (HOP, 2017).

Data gathering by care providers was limited, with 40% of providers responding that they tracked reasons for missed appointments and only 23% tracking the cost of these absences. Providers that did track missed appointment costs reported an average of $175 per appointment in lost revenue (HOP, 2017). High risk and TD populations had the highest incidences of missed appointments; the groups most likely to miss were elderly, homeless, chronically ill, pregnant women, disabled persons, and residents of public housing. Clinical outcomes reported included less utilization of medical services, lack of preventive care, lack of specialty care, delayed care, more emergency department visits, and a failure to fill prescriptions. Of the 78% of providers who said they had strategies to address missed appointments, 17% used transportation-related interventions (e.g. providing rides or engaging referral services) (HOP, 2017).

This research led HOP to produce a Transportation and Health Access Quality Improvement Toolkit, called "Cost Methodology of Missed Appointments and the Financial Impact to Health Centers;" which can be found in Appendix B (HOP, 2017). Community profiles from this study evaluated six programs on the theme of financial sustainability. The hypothesis was that a large initial investment will be recovered by a health system through savings from fewer missed appointments, reduced dependence on emergency services, and increased ability to use continuing care services.

The six communities profiled were (HOP, 2017):

- Buffalo, NY
  - Program: Go Buffalo Mom
  - Problem: High rate of premature births
  - Additional Context: Buffalo is the third poorest city in US; transportation options are not keeping pace with population growth
  - Approach: United Way and the Erie County government used a Healthy Start Coalition, comprised of 50 local social service organizations, to establish a Design Transportation Team. This team discovered a need to address information gaps in a personalized way.
  - Solutions: Transportation Navigators meet with moms at their first prenatal appointment to assess their needs and develop plans, with extra emphasis on a delivery plan. A Ride and Save program supplements the Transportation Navigators by providing a financial coach and relevant education, along with a free bus pass as long as the mothers are active in the education program. Go Buffalo Moms' goal is to continue participation after the children are born.
  - Results: Only 1% of clients need to deliver at full term, rather than prematurely, to recoup the initial program investment. Success with 10 out of 500 births would save health systems $600,000 – over twice the initial outlay for Go Buffalo Moms.

- King County, WA
  - Program: *Hope Link*
  - Problem: Lack of transportation for seniors
  - Approach: Hope Link established Care Mobility Rewards, a program aimed at high- and rising-risk discharge patients (patients who are unable to follow recommend course of treatment and follow-ups).
  - Solutions: Using a central, focused program eliminates miscommunications between care teams as well as confusion or transportation complications for patients. Care Mobility Rewards hires and trains new transportation navigators, staffs a central phone line, and ensures that all employees are well-versed in available agencies. Travel credits are earned through registration and participation in healthy behavior programs, and can be redeemed for free rides through transportation navigators or partner agencies.
  - Results: If 1% of readmissions are prevented (14 people), potential savings for the King County health system are $160,032.

- Portland, OR
  - Program: Ride Connection
  - Problem: Limited access to dialysis treatment
  - Additional Context: Dialysis patients often need treatment three times per week, and these treatments are generally administered at private clinics. Patients are not able to drive themselves immediately after treatment, though 25% do because they lack other reliable modes of transportation.

- o Approach: Ride Connection was established by a citizen committee of Portland's local transportation authority, TriMet. The program focuses on rider education and has trained over 2,000 riders on using public transportation, as well as serving about 570,000 riders in 2015-2016 with over 700 drivers – one-third of whom were volunteers.
  - o Solutions: The Ride Connection pilot program used participatory planning, driver training and patient outreach, and on-site implementation of free rides from paid and volunteer drivers. The program has policies to excuse missed rides or cancellations due to health conditions and to guarantee return trips, easing rider stress.
  - o Results: Ride Connection estimates that their model creates $240 million in savings on hospitalizations.

- • South-Central MO
  - o Program: HealthTran
  - o Problem: Lack of public transportation in rural Missouri
  - o Additional Context: Missouri ranks 44th in the nation in public transportation funding
  - o Approach: HealthTran funded by Missouri Foundation for Health under special projects funding, administered by Missouri Rural Health Association
  - o Strategies: Serving 10 counties, HealthTran fills gaps for people who are ineligible for other programs; most of their clients are seniors, low-income persons, or disabled. Program coordinators are both medical care coordinators and transportation mobility managers. These coordinators perform pre-assessments, appointment scheduling, and post-assessment services to address individual needs.
  - o Results: HealthTran charges a membership fee to health centers, but providers receive $10 health care service reimbursement for every $1 spent on transportation.
    - ▪ Example: From September 2014 to May 2016, $139,000 spent on rides from resulted in $1,300,000 reimbursement from Medicare for one facility.
    - ▪ Example: A man provided with $6,000 worth of transportation services was able to avoid a leg amputation, the average lifetime cost of which would have been $1.4 million. Further, his quality of life was preserved.

- • Southern IL
  - o Program: Rural Medical Transportation Network
  - o Problem: Lack of NEMT for rural residents
  - o Approach: Rural Medical Transportation Network was developed to implement efforts to increase EMS capacity and form partnerships. The network also launched a research initiative to find gaps and develop solutions.

- Strategies: A Patient Navigator program uses nurses employed by EMS consortiums to understand the misuse of emergency services and guide patients to more effective treatment plans.
- Results: Since 2012, there has been a 50% reduction in calls from frequent 911 callers at two pilot sites. Total yearly savings were $111,804 and $348,440 at each site.

- Worcester, MA
  - Program: Smart Transit for Healthcare
  - Problem: Missed appointments among low-income populations
  - Approach: Smart Transit used surveys and focus groups, finding that 45% take the bus, only 18% drive themselves, and 50% had no planning method in place to reach their appointments.
  - Strategies: The program developed a web-based software for appointment scheduling. The software reduced clients' need to make two separate calls (one for a ride and one for a medical appointment). Optimization tools built into Smart Transit software consider least travel times for walking, driving, and transit; patient-specific needs; and preferred appointment times.
  - Results: The Smart Transit model saves Worcester's Family Health Center an estimated $739,200 per year. Rides to Wellness grants have been awarded to agencies in Florida and Pennsylvania to implement Smart Transit models.

**National Center for Mobility Management**

*Health Care Access Design Challenge*

This grant program from the Federal Transit Administration runs on a two-year cycle, though it is not guaranteed to recur on a regular basis. In 2015, the grants were part of the Rides to Wellness initiative described above. Sixteen communities were led through a design thinking process to define their transportation problems, conduct research, and create innovative solutions for health care access (NCMM, 2015).

The Health Care Access Design Challenge grants awarded in 2017 are divided into four categories of health care access issues: access to behavioral care, access to chronic disease care, access to treatment for acute care, and access to ongoing treatment for post-hospitalization recovery/avoidance of re-hospitalization. Grant recipients have gone through a prototyping process, which includes determining a hypothesis for each proposed mobility solution and thorough testing of the assumptions that underlie these hypotheses. The current proposed solutions are as follows:

- El Paso County, Colorado
  - Telehealth and home delivery of medications.
  - Car sharing service based in residential neighborhoods; free for Medicaid clients.
  - Trained and paid drivers deployed from hubs distributed throughout El Paso County for patient transportation to behavioral health and wellness services.

- Shiawassee County, Michigan
  - Mobility managers or other volunteers serve as drug court navigators, finding opportunities for transportation and scheduling appointments.
  - Volunteer matching program fills transportation gaps through on-demand rides; matching can be done through technology (Google calendars) or in person.
  - Between appointments, drug court participants can wait in a "safe holding space," a local church facility where other relevant services can be accessed.

- Tarrant County, Texas
  - Perk packages are offered to clients who reach case worker and medical appointments on time; packages include credits, discounts, and coupons (e.g. free Lyft rides and bus passes).

- Oklahoma
  - "My Buddy and Me" dialysis patient matching provides educational support, coordination assistance, and part-time volunteer driving.
  - A Rides and Rewards app allows real-time GPS tracking, and users may create customized profiles; like Uber and Lyft, rating systems are available for both riders and drivers, and good ratings are incentivized.

- Pioneer Valley, Massachusetts
  - Designated transportation coordinators will take over for community health workers who currently help with transportation, as they are overcommitted with other patient needs.
  - An on-demand shuttle service, dispatched from a central center, takes patients between bus stops and their homes; each shuttle has its own dedicated driver.
  - A matchmaking database sets up families with space in their vehicles for carpooling to health care providers near their own family members' appointments.

- Coahama & Quitman Counties, Mississippi (b)
  - "Trendy Transit," a visually friendly service funded through partnerships, gives vouchers to patients for rides after a hospital discharge and rides to follow-up appointments within one year of a hospital stay.
  - Customer profiles and appointment integration with transit routing software improve communication among health care workers, customers, and the counties' regional call center.
  - A community coalition educates the public about transit needs and investment potential.

- Rockingham County, Virginia
    - A discharge planner or social worker registers patients with transportation providers at the same time that follow-up appointment scheduling and other paperwork are completed.
    - An open-ended interview guide (shown in Figure 9) for care coordinators allows patients to think through barriers to care; patients and coordinators then make a plan together.



**Figure 9. Rockingham County, VA Communications tool**

Source: NCMM, 2018

These grants underwent a limited launch in August 2018 and were completed by mid-November of 2018. Design thinking, performance measurement, and assumption testing define this round of funding for the Health Care Access Design Challenge, a program that encourages innovative and economically sustainable solutions to transportation barriers to health care.

**Health Research and Educational Trust Guide**

The American Hospital Association produced a "Social Determinants of Health Series" through the Health Research and Educational Trust, which featured a 2017 issue called "Transportation and the Role of Hospitals." This report describes the Triple Aim of hospitals – improved health, improved care, and lower costs – and makes a business case for hospitals directly addressing transportation needs in their patient communities (HRET, 2017). Hospitals can play a role in screening for these needs, providing transportation services, and supporting policies that increase accessibility.

Four cases of hospitals addressing a lack of transportation access illustrate ways that hospitals and health systems can handle these issues (HRET, 2017). Two in particular use innovative strategies. CalvertHealth, a health system in southern Maryland, used a community health needs assessment and real-time data to demonstrate a need for their 40-foot Mobile Health Center (HRET, 2017). This truck is staffed by a registered nurse and features two rooms, one for medical and dental treatment and one waiting or transitional room.

The nurse's role is to provide screenings and care, as well as guidance for patients who need help navigating or locating resources, understanding their treatment plans, and identifying health risks. For hospital patients in the CalvertHealth system, taxi vouchers are used when a needs assessment reveals transportation barriers. This assessment is usually begun if a patient reports missing an appointment due to a lack of transportation. If it is discovered that these patients are not filling prescriptions, a pharmacist will visit them to deliver medication and help educate them about their treatment (HRET, 2017).

Denver Health Medical Center has taken a partnership approach to providing patient transportation; in addition to free bus and cab rides and a volunteer-driven vehicle, Denver Health partners with Lyft to transport patients after they are discharged from the hospital. After pilot testing with emergency room patients, the service has been expanded to hospital inpatients and four outpatient centers (HRET, 2017).

Initial program concerns revolved around the speed of Lyft's service – nurses would call before discharge and the patients would miss their driver – and matching the correct patient with the correct driver. However, these concerns were resolved by clearly designating personnel who will call the ride when the patient is ready and will ensure that they know the driver's name and vehicle description. Patient advocates for Denver Health who take patient complaints have seen their transportation-related calls drop from multiple daily reports to zero reports total since the partnership with Lyft began (HRET, 2017).

**Coordinating Council on Access and Mobility (CCAM)**
The Coordinating Council on Access and Mobility (CCAM) Authorization of the Fixing America's Surface Transportation (FAST) Act, Section 3006(c), required CCAM to publish a strategic plan within 1 year. The strategic plan is to outline the roles and responsibilities of each Federal agency with respect to local transportation coordination, including NEMT, and shall identify a strategy to strengthen interagency collaboration (FTA, 2019). In response to FAST Act requirements, representatives of CCAM member agencies met in 2016 to develop the following goals and objectives for the Draft CCAM Strategic Plan. These include (FTA, 2017):

- Goal 1: Improve Access to the Community through Transportation
  - Objective 1: Reduce federal policy barriers to coordinated transportation
  - Objective 2: Increase state and local transportation coordination
  - Objective 3: Promote public awareness of available transportation options
  - Objective 4: Incorporate the use of innovative technologies in coordinated transportation

- Goal 2: Enhance Cost-Effectiveness of Coordinated Transportation
  - Objective 1: Enable equitable cost sharing among state and local stakeholders
  - Objective 2: Develop framework for transportation cost reporting
  - Objective 3: Promote the adoption of cost sharing

- Goal 3: Strengthen Interagency Partnerships and Collaboration with State, Local, and Industry Groups
  - Objective 1: Refresh the CCAM Operating Model
  - Objective 2: Coordinate transportation initiatives for targeted populations
  - Objective 3: Expand opportunities for external input

- Goal 4: Demonstrate Future Models for Coordinated Transportation
  - Objective 1: Implement and evaluate CCAM pilot programs

**Other Strategies**

***Fixed-route Service Improvements***

Fixed-route transit service already exists to help transportation disadvantaged persons reach their destinations, but data from TD plans illustrate the shortcomings of this mode. Service is often inadequate in terms of scheduling and geographic coverage, preventing riders from using bus transit in certain situations, such as early morning chronic care appointments, working late to make up time missed and/or costs incurred from health care needs, and going to a health care specialist in locations not served by transit.

Given the high cost of TD transportation services, therefore, one of the first priorities for improving transportation access to health care is more efficient transit service. Existing transit systems can provide a starting point for data collection surrounding the needs of riders before, during, and after their transit trip (DiPetrillo, et al., 2016).Ensuring pathways to existing transit stops and stations are continuous and properly maintained is also necessary. Advocacy groups – such as bicycle and pedestrian safety coalitions – have a presence in many urban areas and can be leveraged to identify areas where pathways to transit are in need of improvement. Interagency coordination is critical. Sidewalks, for example, are under the control of local governments or state transportation agencies within state highway right-of-way. Transit agencies can take an active role in ensuring the safety and connectivity to pathways serving transit stops through partnering and interlocal agreements with other agencies (DiPetrillo, et al., 2016).

Types of improvements that can be made to fixed-route transit service include more frequent service, larger coverage, more efficient routes, and extended services times. Other improvements include infrastructure improvements to sidewalks, transit stops and stations, and any additional ADA-compliant design features. Creating a transit system that allows seamless navigation by persons with disabilities will ensure a better experience for all users of

the system, not only TD or disabled persons (DiPetrillo, et al., 2016). Connections to destinations and services can also be improved; for example, making it easier and safer to reach a medical facility from a transit stop is a valuable investment in the overall fixed-route system because it allows riders to use that route and to arrive at their appointments without issue. This can save on costs for paratransit and other ride voucher services as well.

Specific strategies for improving pathways to transit include (DiPetrillo, et al., 2016):
- Evaluating accessibility to transit stops, especially in areas with high proportions of TD populations;
- Leveraging DOT resources to make improvements to transit shelters, landing pads and sidewalks during roadway reconstruction and resurfacing;
- Taking inventory of transit stops and prioritizing infrastructure needs for each stop, including its overall accessibility from the surrounding area;
- Engaging existing advocacy groups to determine needs and generate community support;
- Using cost-effective and, when possible, recycled materials to make improvements like durable bus landing pads and glass shields;
- Improving signage design and visibility to allow easier navigation of the transit system; and
- Considering land uses adjacent to the transit network and planning for users of the transit system to safely access land uses or destinations.

### Accountable Care Organizations
Accountable Care Organizations (ACOs) are designed to increase coordination of medical services. They are sponsored by the Centers for Medicare and Medicaid Services (CMS) as part of an innovation model portfolio, testing strategies for cost sharing and coordination of care (CMS, 2016). ACOs are not always transportation-focused, and some do not offer transportation at all, but their ability to streamline care and assess individual needs can reduce the need for transportation to health care services among TD persons. Institutional support from CMS is key for addressing access to care, as Medicare and Medicaid historically presented major barriers to coordination through stringent requirements and organizational silos.

### Camden Coalition of Healthcare Providers
One notable ACO, New Jersey's Camden Coalition of Healthcare Providers (CCHP), piloted a process called "hotspotting" to analyze health care use patterns and prepare targeted interventions that respond to patient needs. After finding that 10% of hospital patients account for almost two-thirds of all hospital spending, CCHP committed to increasing care quality while decreasing costs (CCHP, 2018). Their hotspotting process draws real-time data about hospital utilization and seeks to target inpatient and emergency room visitor groups that would be ideal for better, less expensive solutions. They call this a Health Information Exchange (HIE), an agreement which ensures patient privacy and maintains relationships among various types of providers (CCHP, 2018).

The agency has expanded this operation to include an integrative database that draws from administrative data across hospital, housing, and criminal justice systems (CCHP, 2018). The same process can be used to include transportation utilization, provided that the data is gathered in a timely manner and there is cooperation among all service providers and data collectors.

### *Transportation Network Companies*

Following the Denver Health program described earlier in the report, in which Lyft is used for patient discharges, other health systems have enacted programs to use transportation network companies (TNCs) to supplement patient transportation options. MedStar Health in Maryland and Washington D.C. now features a "Ride with Uber" program through which clients can set up rides in advance. This program will also show fees and wait times, as well as allowing clients to set reminders (O'Connor, 2016). MedStar's partnership with Uber avoids some of the pitfalls seen in Denver Health's program; the usual immediacy of a regular TNC ride request can be put off and clients can plan their rides well in advance. The MedStar Health system is also working on a pilot program to subsidize these rides for low-income clients (O'Connor, 2016).

Lyft has set up NEMT partnerships in other cities, as well, including Las Vegas and New York City. Las Vegas Fire and Rescue is using the TNC to avoid misuse of 911 calls and emergency services (O'Connor, 2016). 911 operators have received training in how to triage calls and potentially transfer a caller to a registered nurse; the nurses then have the option to get callers a ride through Lyft if their main concern is lack of transportation to a health care center. This call assessment program is supported by a robust protocol software to ensure that patients are directed to the appropriate service or transportation option (O'Connor, 2016). In New York City, the National MedTrans Network is running a test program in which operators can book Lyft rides for their clients through a dedicated web-based portal (Ganuza & Davis, 2017).

Uber and Lyft are finding that their drivers receive calls for both emergency and non-emergency health services across the nation (Ganuza & Davis, 2017). One Uber rider cited a desire to choose a particular hospital, which is generally not allowed by ambulances, as her reason for using the TNC instead of 911 (Steele, 2016). TNCs can be more cost-effective than ambulances for riders but using them for health care transportation presents liability for the drivers, so the kinds of structured programs in place in Denver, Las Vegas, and New York may serve as a safer and more appropriate model for using TNCs to reach health services. In March 2018, Uber launched UberHealth, a specific NEMT program that focuses on simplified billing and reporting, advance ride scheduling, text/call features for patients without smartphones, and HIPAA compliance (Weber, 2018).

### *Community Health Workers*

Community, or "lay," health workers (CHWs) are a growing employment category in the United States aimed at providing public health services outside of traditional clinical settings. Screening and assessment programs administered by CHWs can help reduce the need for longer trips (Minnesota Community Health Worker Alliance, 2018). Although these providers are not usually licensed as doctors or nurses, they are trained to implement medical and "healthy

behavior" programs and assess community health needs. Patient support and data collection are both part of a CHW's typical responsibilities (Lehmann & Sanders, 2007). Cardiovascular disease prevention, cancer screening, and diabetes prevention and management are some of the key areas of focus for CHW programs in the United States (Minnesota Community Health Worker Alliance, 2018). According to the Bureau of Labor Statistics, there are about 54,760 CHWs nationwide; this employment sector has major potential for growth if support is provided from health departments, hospital systems, and insurance companies (BLS, 2018).

The Centers for Medicare and Medicaid sponsor innovation under requirements of the Social Security Act and the Affordable Care Act. One innovative program through the University of Alabama at Birmingham, called the Deep South Cancer Navigation Network (DSCNN), created a network of CHWs across a five state region (CMS, n.d.). The program was designed specifically for advanced-stage cancer patients with psychosocial barriers to care, including transportation and distance to medical facilities. DSCNN received $15,007,263 in initial funding from CMS Innovation Centers, and the network's three-year savings are estimated at $49,815,239 (CMS, n.d.). In addition to a 332% return on investment, DSCNN is expected to increase adherence to treatment, reduce emergency visits, promote timely acceptance of palliative care, and improve quality of life for its patients (CMS, n.d.).

Florida DOH-Hillsborough employs Family Support Workers (FSW) who provide educational support in communities for programs. Currently, FSWs help to lead the get into fitness today (GIFT) program, and provide peer support to WIC breastfeeding moms. These programs provide an avenue to control and prevent chronic disease without the need for health care trips (FDOH-Hillsborough, 2018).

### Telehealth

A general definition from the Health Resources and Services Administration (an agency of DHHS) states that telehealth is "[t]he use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration" (HealthIT, 2016). Specific definitions of telehealth/telemedicine and subsequent policies around the topic vary by state. Federal regulations also govern definitions of telehealth; access to telehealth treatment for veterans, home dialysis patients, women, behavioral health patients, and more; and issues of parity and support for individuals receiving care through telehealth or telemonitoring. Several grant funding opportunities are available through the Health Resources and Services Administration for qualifying telehealth programs (HealthIT, 2016).

There are four primary telehealth service types: live video, store-and-forward, remote patient monitoring, and mHealth (telehealth through mobile devices) (CCHP, 2018). Live video is used for diagnosis and treatment, and this service type is most similar to an in-person appointment. Store-and-forward uses a secure connection to send videos, x-rays, and other images for evaluation or other services; this is typically used to access specialists that are geographically distant. Remote patient monitoring aims to avoid readmissions through transmission of data after a patient goes home from treatment. mHealth, or mobile health, refers to the use of

notifications and applications to administer public health care and education. This type of telehealth is often used to promote healthy behaviors or send widespread messages about disease outbreak or other community concerns (CCHP, 2018).

An explanation of telehealth by the Mayo Clinic notes that telehealth is cost effective compared to face-to-face appointments. Some examples of common telehealth activities include (Mayo Clinic, 2017):

- Uploading medications, food diaries, and blood sugar levels for review by a nurse;
- Watching a video on carbohydrate counting and downloading a corresponding app to track carbohydrate intake;
- Using an app to estimate, based on diet and activity level, how much insulin a diabetic patient will need;
- Using an online patient portal to see test results, schedule appointments, request prescription refills or email a doctor;
- Ordering testing supplies and medications online;
- Using a mobile device to get a retinal photoscreening at a general practitioner's office rather than at a separate specialist appointment; and
- Getting email, text, or app reminders when it is time for a flu shot, foot exam, or other preventive care.

These and other services can reduce trips for TD populations, using technology rather than transit to overcome barriers to care. Telehealth is particularly useful for chronic care needs, like diabetes and kidney treatment, as well as for patients in rural areas. In addition to the more common forms of telehealth described above, virtual appointments using a patient-led questionnaire protocol can provide diagnostic services, and nursing call centers can be used to get treatment advice for home care (CCHP, 2018).

### Smart Cities

"Smart" cities are cities that use ambient and mobile sensors to support decisions about infrastructure and services. These sensors, commonly referred to as information and communications technologies (ICTs), collect continuous data. Cook, et al. (2018) suggest that data from ICTs could be used to reduce health care costs and improve service delivery from health care providers. mHealth, described in the telehealth section above, already uses "body area networks" (wireless networks of wearable devices, like fitness trackers and implanted sensors) and personal mobile devices to allow users the ability to track their own health data and receive notifications about potential prevention or treatment options. Some body area network devices, like sensors to automatically inject insulin as needed, are in limited use already, while others are still conceptual.

Smart cities can also employ aHealth (ambient intelligent environments) to evaluate health status while eliminating the potential user errors introduced by wearable devices (Cook, et al., 2018). City-level ICTs (cHealth) can be used to determine relationships among health providers, city services, and residents by analyzing transportation network data, provider locations, and

more. Multiple sensor types and platforms can be used in combination to record data, and machine learning can be used to calibrate responses to these data (Cook, et al., 2018).

One example of an effective smart cities health intervention comes from Jefferson County, Kentucky: researchers distributed sensor-enabled inhalers that triggered an air quality sensor on the participants' mobile devices when used. The data revealed an asthma hotspot, and the County was able to plant trees between this hotspot and adjacent roadways, decreasing particulate matter in the air by 60% (Cook, et al., 2018). Other potential uses at a personal level include monitoring of cardiovascular health, kidney disease, and dementia. For example, an ambient recording device in the home can detect changes in residents' gait, time spent on typical activities, and travel patterns throughout the home (Cook, et al., 2018). These changes can signify the onset or worsening of cognitive impairments (such as depression or dementia), which can then be relayed to the residents and their health care providers.

Some types of smart cities technology may be considered too invasive by some users, particularly home-based monitoring, but these embedded technologies can benefit the aging U.S. population considerably in the coming years. Using ICTs to guide patients through at-home physical therapy or cognitive strengthening can supplant repeated trips to a health care facility. Using notifications to remind older adults to take medication or complete a treatment protocol can prevent unnecessary readmissions and overuse of emergency transport.

Privacy and security will undoubtedly be challenges for smart cities interventions in health care and other fields, but data encryption techniques continue to evolve. It will be crucial to maintain anonymity as data is transferred among services. Accessibility is another challenge of health care through ICTs; although an established network of smart city monitoring will save money, the initial investment required might prevent adoption of these technologies (Cook, et al., 2018). Existing city-based ICTs (like air quality sensors embedded in streetlamps) can be integrated into public health planning without the same privacy concerns as in-home devices, using some creativity regarding the environmental factors that affect chronic disease.

**Summary**

This review demonstrates that a lack of transportation access remains a social and economic burden, both for TD populations and health care-related industries. It further reveals that a variety of strategies are available for improving health care access and doing so can result in a substantial return on investment. The survey of existing literature and programs designed to address transportation gaps and barriers to health access has revealed a few key themes:

- Federal programs set the stage for state and local coordination. The Coordinating Council on Access and Mobility, National Centers for Mobility Management, and Centers for Medicaid and Medicare Services set guidelines and provide grant funding to encourage coordination. States choose their own schemes for TD coordination, and some choose a mix of service types. Local coordination requires both political support and on-the-ground responsibility for sharing resources.

- Coalitions are key to success. Support across organizations can remove barriers to coordination such as funding silos, varying institutional reporting requirements, and protective attitudes toward individual program clients.

- Cost savings for coordination are significant for all schemes reviewed. Brokerages, transit voucher or reimbursement programs, Transportation Network Company arrangements, and Accountable Care Organizations all reduce costs and were shown to produce significant returns where coordination programs required an initial capital investment.

- Technology can be used to reduce trips and increase compliance with treatment protocols. Smart cities and telehealth refer to a variety of strategies for reminding, guiding, and educating patients without a need for office visits. These technologies can also avoid unnecessary hospitalizations, particularly among elderly persons.

- Intermediary roles, like transportation navigators and community health workers, can lead to better health outcomes. Community programs that provide preventive care, education, and basic treatments reduce the burden of travel on TD populations and provide social support not available through typical health care appointments.

- Better land use and transportation plans are also critical to improving access to health care services. Placing transit compatible land uses, such as health care facilities, on transit routes, efficient transit service, extended services times and infrastructure improvements to sidewalks, transit stops and stations, with attention to ADA-compliant design features will increase opportunities to access health care services and destinations. A transit system with seamless navigation by persons with disabilities will ensure a better experience for all users of the system and can save on costs for paratransit and other ride voucher services as well.

# Chapter 4
## Strategic Plan Framework

This chapter draws from the literature and planning documents reviewed to create recommendations for improving non-emergency medical transportation and access to health care in Hillsborough County. The recommendations are organized into a strategic plan framework, which is designed to address specific issues relative to health care access for TD populations within Hillsborough County, while providing objectives that can be adapted to other geographical contexts. The plan consists of the following objectives:

1) Improve fixed-route transit service delivery;
2) Provide seamless connections for patients following major medical treatments;
3) Provide options for receiving health care in place;
4) Enable riders to navigate non-emergency medical transportation systems;
5) Decrease costs to providers and the public by reducing missed appointments; and
6) Develop a coordinated regional NEMT network across Hillsborough, Pinellas, and Pasco counties.

**Objective 1: Improve fixed-route transit service delivery.**

Background: *One of the most important and cost-effective methods for increasing access to health care is to improve existing fixed-route transit service. This is a system-wide improvement that can avoid or reduce the need for supplementary services.*

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| **Expand fixed-route service** | Provide service on HART lines early in the morning, late at night, on weekends, and in more residential areas | HART | County government; Plan Hillsborough MPO; FDOT; FTA | Grants for Buses and Bus Facilities Program (FTA); Federal, State, and Local funding available | Plans are ongoing to expand transit service in the County | |
| **Improve access to transit stops and nearby services for pedestrians and cyclists** | Collect data on how passengers use the fixed-route system, including where sidewalk, crossing, or transit stop inadequacies exist, and implement an improvement plan to improve bike/ped connections | Hart/County government | Plan Hillsborough MPO; FDOT; Cities; bicycle and pedestrian safety groups | Grants for Buses and Bus Facilities Program (FTA); Federal, State, and Local funding available | Plans are ongoing to expand transit service in the County | |
| **Enhance first/last mile connections** | Partner with TNCs for low cost connections to transit, provide better information about available first- and last-mile connection options (e.g., circulators); | HART | TNCs, FDOT, Plan Hillsborough MPO; businesses and institutions such as universities, hospitals, | Grants for Buses and Bus Facilities Program (FTA); Federal, State, and Local funding available | Plans are ongoing to expand first/last mile access to transit in the County; see University Area "Uptowner" proposal from HART | |

| | | | | | |
|---|---|---|---|---|---|
| improve signage and wayfinding | | sports stadiums, etc. | | | |

**Notes:** Fixed-route transit service delivery not only needs improvements to scheduling, frequency, and geographical coverage, but also to the infrastructure used by riders before and after boarding transit. This includes sidewalk connectivity, accessible and safe transit stops, and connectivity to the services or destinations used by riders on fixed-route service. Considering long-term cost savings, including savings from the use of green building materials and preventing costs related to legal actions, can help justify the expense of fixed-route infrastructure improvements. Coordination with local bicycle and pedestrian groups and other multimodal advocates can aid in identifying opportunities and building community consensus.

| Objective 2: Provide seamless connections for patients following major medical treatments. |
|---|

Background: *Many patients will drive themselves after treatments like dialysis and chemotherapy, against medical advice, because they have no other cost-effective mode of travel.*

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| **Partner with TNCs to increase service options (e.g., Uber, Lyft) (supplement existing service)** | Designate ride coordinator and/or liaison (nurse or administrative staff) | Healthcare facility | UberHealth, Lyft Concierge or similar program | Innovative Coordinated Access and Mobility Pilot Program (FTA) | Denver Health partnership with Lyft CO; UberHealth pilot at BayCare Tampa, FL; UZURV | Amy Friedman, Chief Experience Officer - Denver Health and Hospital Authority, 303-602-2925, amy.friedman@dhha.org |
| **Coordinate volunteer drivers** | Engage nonprofits with allied interests to become door-to-door providers | CTC | American Cancer Society; Other non-profits and volunteer networks | Enhanced Mobility of Seniors & Individuals with Disabilities - Section 5310; Human Services Coordination | Ride Connection (Portland, OR) | Julie Wilcke, Chief Operating Officer, jwilcke@rideconnection.org |

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| | | | Research (HSCR) grants | | | |
| **Co-locate health care and social service facilities** | Plan for future land use and development to include health centers | Healthcare providers | Local governments, including planning and economic development organizations; social service providers (e.g. Tampa Families, DACCO Behavioral Health) | Human Services Coordination Research (HSCR) grants (FTA) | | |

**Notes**: Patients need timely rides home after dialysis, chemotherapy, hospital discharges, etc. Health-focused TNC's mobile applications allow clients to see fees, wait times, and set reminders. Ride coordinator ensures that the TNC is not called until a patient is fully discharged and that patient knows the driver's name and vehicle description.

The Ride Connection pilot program used participatory planning, driver training and patient outreach, and on-site implementation of free rides from paid and volunteer drivers. Ride Connection estimates that their model creates $240 million in savings on hospitalizations.

Volunteers can be difficult to recruit. This is a cost-effective strategy where it is possible, but some areas do not have a large enough pool of volunteers to sustain a program like Ride Connection. The American Cancer Society has experience with this issue in the Tampa area.


| | |
|---|---|
| **Objective 3: Provide options for receiving health care in place.** | |
| Background: *Healthcare in place strategies rely on technology, staff capacity, and data analysis. These strategies can provide accurate information about a person's health and allow them to receive advice and treatment without making a trip to any medical facilities.* | |

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **Promote telehealth** | Develop or adopt a platform for health professionals to communicate with patients remotely; educate healthcare recipients about using telehealth | Healthcare providers | Outreach workers | Innovative Coordinated Access and Mobility Pilot Program (FTA) | Finger Lakes Community Health (Penn Yan, NY) | http://flchealth.org/ |
| **Equip mobile care units** | Staff mobile units with nurses and dental assistants who are trained to assess patient needs; plan for the capacity to deliver prescriptions | Healthcare providers | Metropolitan Ministries; children's care organizations; other social service providers | Centers for Medicare and Medicaid Services | CalvertHealth Mobile Health Center (MD) | Mobile Health Center Information and Schedule: 410-535-8233 |
| **Implement community health worker programs** | Expand the role of Florida Health's Family Support Workers program to include diabetes and cancer support; increase staff for this program | DOH-Hillsborough | Head Start; chronic care providers for diabetes, cancer, dialysis | Centers for Medicare and Medicaid Services; Behavioral Health Workforce Education and Training (BHWET) Program (Health Resources and Services Administration) | Deep South Cancer Navigation Network (University of Alabama at Birmingham) | Terri L. Salter, Director of Business Operations UAB Health Systems, terrisalter@uabmc.edu |

**Notes:** The Mobile Health Unit is staffed by a registered nurse and features two rooms, one for medical and dental treatment and one waiting or transitional room. The nurse's role is to provide screenings and care, as well as guidance for patients who need help navigating or locating resources, understanding their treatment plans, and identifying health risks. If it is discovered that these patients are not filling prescriptions, a pharmacist will visit them to deliver medication and help educate them about their treatment.

Deep South Cancer Navigation Network (DSCNN) received $15,007,263 in initial funding from CMS Innovation Centers, and the network's three-year savings are estimated at $49,815,239. In addition to a 332% return on investment, DSCNN is expected to increase adherence to treatment, reduce emergency visits, promote timely acceptance of palliative care, and improve quality of life for its patients.

| Objective 4: Enable riders to navigate non-emergency medical transportation systems. |
|---|

**Background:** *Managing multiple eligibility processes, modes of travel, and schedules can be difficult for riders. Riders experiencing acute or chronic health conditions may find managing all these things impossible, but there are strategies to reduce this burden and guide riders through a complex system. Focusing on reducing the complexity of the transportation system is another way to empower riders.*

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| **Maintain one-stop centers for ride planning across services** | Expand TBARTA's myRIDE service to include ride planning tools that consider mode types, rider needs, and eligibility criteria | TBARTA | Smart Transit software developers, transportation providers | Enhanced Mobility of Seniors & Individuals with Disabilities - Section 5310 (FTA) | Smart Transit for Healthcare (Worcester, MA) | Moumita Dasgupta, Principal Investigator, mdasgupta@amherst.edu |
| **Employ transportation navigators to guide all TD riders** | Hire and/or train staff members to act as case workers for transportation disadvantaged riders | Healthcare providers | CTC; nonprofits; transit providers | Enhanced Mobility of Seniors & Individuals with Disabilities - Section 5310 (FTA) | Go Buffalo Moms (Buffalo, NY), Hope Link (King County, WA) | Mary K. Comtois, Program Director of Health Initiatives, mary_k.comtois@uwbec.org (Go Buffalo Moms); Francois Larrivee, Transportation Director, francois.larrivee@hope-link.org (Hope Link) |

**Notes:** Optimization tools built into Smart Transit software consider least travel times for walking, driving, and transit; patient-specific needs; and preferred appointment times. The Jacksonville Transportation Authority received a Rides to Wellness grant to test Smart Transit in 2016; details can be found here: https://www.jtafla.com/business-center/grants/rides-to-wellness/.

Transportation navigators help riders determine their eligibility for various programs; decide on what modes and services to use; and schedule, cancel, and reschedule rides.

## Objective 5: Decrease costs to providers and the public by reducing missed appointments.

Background: *Missed appointments lead to avoidable hospitalizations and other adverse health outcomes, and patients may require more subsidized rides to complete an extended treatment or receive social services. Programs around the country have demonstrated the savings available to healthcare providers and transportation providers when patients do not miss their appointments.*

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| **Implement voucher and reimbursement programs** | Establish procedures to provide vouchers for patients taking taxis and mileage reimbursements for patients who can find private (not-for-hire) drivers, e.g. friends and neighbors; use cost savings methodology for missed appointments | Healthcare provider; transit provider | Taxi companies; TNCs | Centers for Medicare and Medicaid Services; Healthcare providers; Section 5310 (FTA); FDOT; Developmental Disabilities Council; social service providers | Calvert Health (Southern Maryland); Trendy Transit (Coahama and Quitman Counties, Mississippi) | Antionette G. Brown, agray@aehchc.org; Dartenya Davis, dadavis@aehchc.org (Trendy Transit) |

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| **Institute travel rewards and incentives programs** | Develop a program for riders to earn credits through registration and participation in healthy behavior programs; these credits should be redeemable for free rides with partnering agencies | CTC or DOH | Volunteers and nonprofits | Centers for Medicare and Medicaid Services; Healthcare providers | Hope Link (King County, WA); My Health, My Resources (Tarrant County, TX) | Francois Larrivee, Transportation Director, francois.larrivee@hope-link.org (Hope Link); For assistance with program evaluation contact Camille Patterson, PhD Camille.Patterson@mhmrtc.org (MHMR) |

**Notes:** Early morning fixed-route service would give dialysis patients, whose treatments start at 5:45 am, a low-cost and safe option for traveling to these appointments.
Hope Link found that if 1% of hospital readmissions (14 people) are prevented through their travel rewards program, potential savings for the King County health system would be $160,032.

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## Objective 6: Develop a coordinated regional NEMT network across Hillsborough, Pinellas, and Pasco counties.

Background: *Some people, especially those receiving Medicare, must travel across county lines to reach their healthcare providers. This can be difficult because of differing eligibility requirements and schedules, but staff capacity and technology can bridge the gap for riders.*

| Strategy | Action | Lead Responsibility | Partners | Funding | Examples | Contacts for Further Information |
|---|---|---|---|---|---|---|
| **Establish a regional network for NEMT** | Create a database of specific service gaps and form partnerships to provide NEMT across jurisdictional boundaries | CTC | Florida EMS Advisory Council | | Rural Transportation Medical Network (Southern IL) | Dennis Presley, Project Coordinator, dpresley@siumed.edu |

| | | | | | |
|---|---|---|---|---|---|
| **Establish mobility manager positions for the tri-county region** | Develop a job description and training protocol for mobility managers; hire new and/or retrain existing staff | CTC | Transportation providers | Enhanced Mobility of Seniors & Individuals with Disabilities - Section 5310 (FTA) | HealthTran (South Central MO) | Suzanne Alewine, Executive Director, suzanne@cabllc.com; Doris Boeckman, Principal, Community Asset Builders, LLC, doris@cabllc.com, Mary Gordon, HealthTran Project Manager, Mgordon@cabllc.com |
| **Use technology to determine specific gaps in service and identify at-risk populations** | Develop and maintain GIS data showing where missed rides occur and what populations are most vulnerable in a specific area | ACOs | Healthcare providers; DOH-Hillsborough; CTC; HART, TBARTA, and other transportation providers with GIS data; Plan Hillsborough MPO | Human Services Coordination Research (HSCR) grants (FTA); Innovative Coordinated Access and Mobility Pilot Program (FTA) | Camden Coalition of Health Care Providers' hotspotting technique (Camden, NJ) | Camden Coalition of Health Care Providers, 856-365-9510 |

**Notes:** Camden Coalition of Healthcare Providers found that 10% of hospital patients account for 2/3 of all hospital spending. Their integrative database draws from hospital, housing, and criminal justice systems to find out more about these populations and target efforts to reduce preventable hospital stays.

HealthTran charges a membership fee to health centers, but providers receive $10 health care service reimbursement for every $1 spent on transportation. From September 2014 to May 2016, $139,000 spent on rides from resulted in $1,300,000 reimbursement from Medicare for one facility. Their mobility managers perform pre-assessments, appointment scheduling, and post-assessment services to address individual needs for TD persons who are ineligible for other programs.

Rural Transportation Medical Network uses a Patient Navigator program, in which nurses employed by EMS consortiums teach about the misuse of emergency services and guide patients to more effective treatment plans. Since 2012, there has been a 50% reduction in calls from frequent 911 callers at two pilot sites. Total yearly savings were $111,804 and $348,440 at each site.

# Chapter 5
## Conclusions

This report has discussed gaps and barriers to accessing health care, particularly in the context of Hillsborough County, Florida and surrounding areas. Already using a mix of private, nonprofit, and public models for transportation service delivery, Florida is suited to implement many of the strategies and innovative technologies described in the report. These strategies not only improve the health of the population but can in some cases result in significant cost savings for health and transportation providers by reducing missed appointments and unnecessary hospitalizations. A statewide analysis in 2008 demonstrated that each dollar spent on TD services in Hillsborough County results in an $11.08 return on investment, a clear incentive to use TD funding effectively (Cronin, et al., 2008). The framework presented in Chapter 4 provides a starting point for agencies interested in achieving these and other objectives.

Recurring themes around the nation and locally included the following gaps and barriers to health care access: fragmentation, redundancy of services, inconsistent requirements in transportation service and funding, lack of leadership, and difficulties with interagency coordination. Issues specifically noted in Hillsborough County included lack of knowledge of available transportation options among riders, land use decisions that prevent connectivity, inadequate transit service coverage, barriers to walkability in the built environment, and an overloading of Medicaid provider capacity. Complexity of the transportation system was another evident barrier across all types of literature surveyed in this report.

Common factors found in successful NEMT programs included a mix of funding streams and strategies, a dedicated staff, and organizational commitment. These effective programs were able to justify transportation as a top priority and navigate the challenge of coordinating, while protecting the organization's own clients. Further, the programs detailed here included TD representation on decision-making boards and bridged insurance gaps with technological approaches like telehealth. Other proven strategies, such as smartcards for paratransit and one-stop mobility centers, already exist in the Hillsborough County area, but could be improved through increased funding and leadership. Greater investment in a quality transit system, safe bicycle and pedestrian facilities, and improved land use planning for a more walkable built environment are also critical parts of the solution.

Finally, continuing increases in income inequality and chronic disease rates in the United States are likely to strain existing NEMT or patient-centered transportation programs. According to the Centers for Disease Control and Prevention, chronic conditions will affect 50% of Americans in 2019, and one in four Americans has two or more chronic diseases (CDC, 2018a). CDC also notes that the United States spends $2.7 trillion on health care annually, and that chronic and mental conditions account for 86% of this spending. Heart disease and stroke alone are estimated to cost $126 billion in lost productivity; costs to the health care system, consumers, and employers exceed $1 trillion each year, demonstrating a clear need to address the

determinants of health (CDC, 2018b). These costs will only exacerbate the challenges facing transportation disadvantaged populations in the U.S. Adapting to the existing and future need for TD access to health care will require attention to the themes discussed here, particularly coordination and community level-support.

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# Appendix A: TDSP Regional Mobility Needs by Population
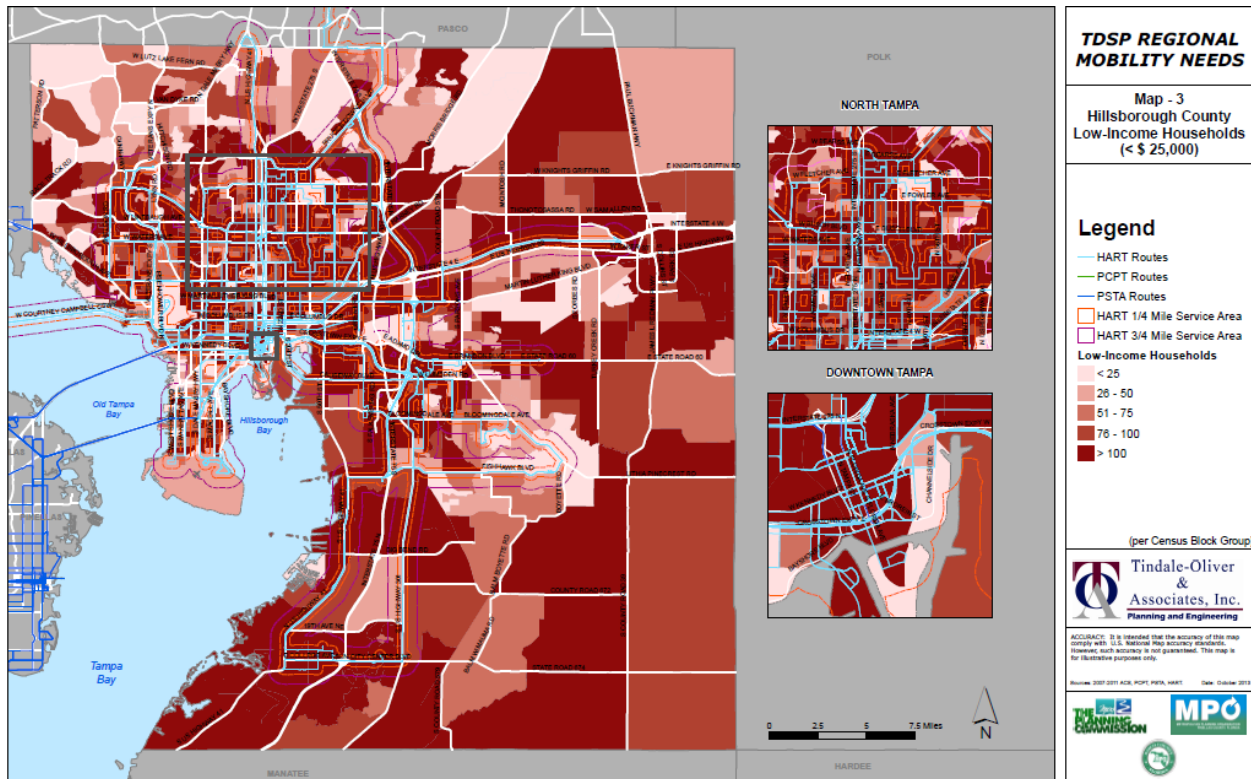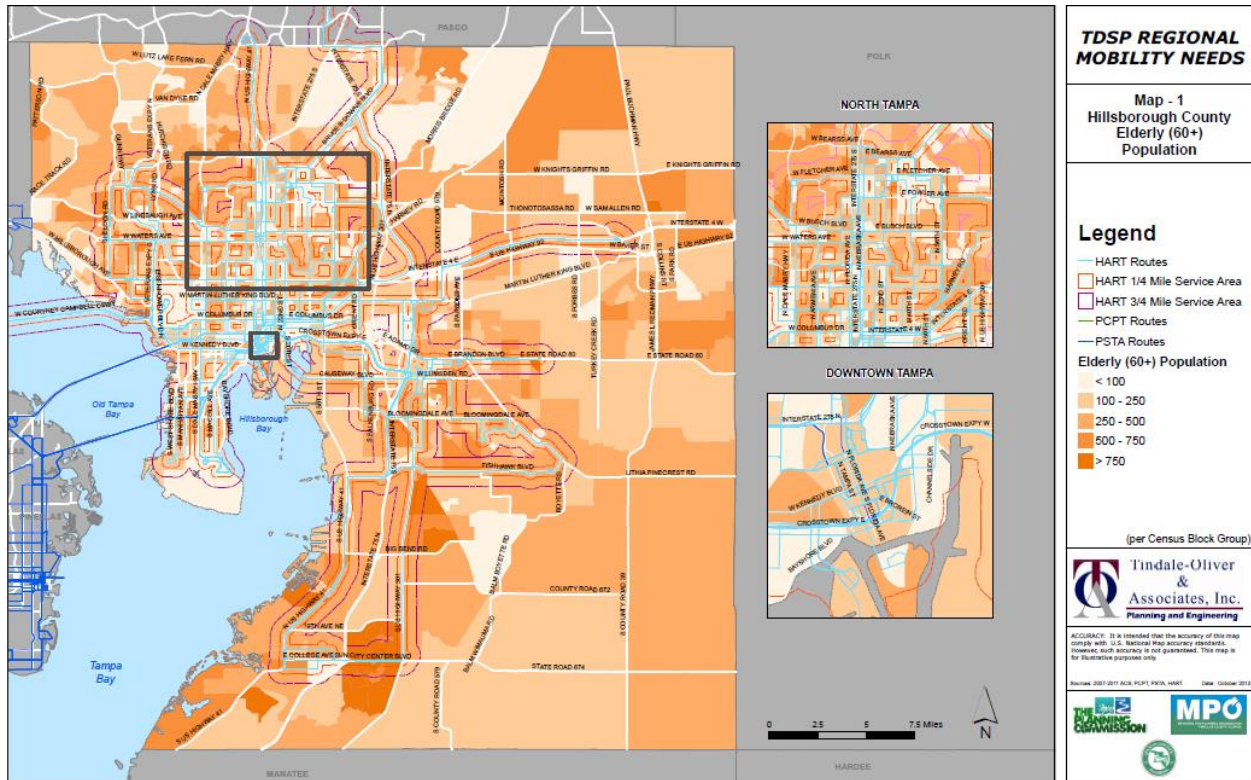
**Appendix A: TDSP Regional Mobility Needs by Population (cont.)**
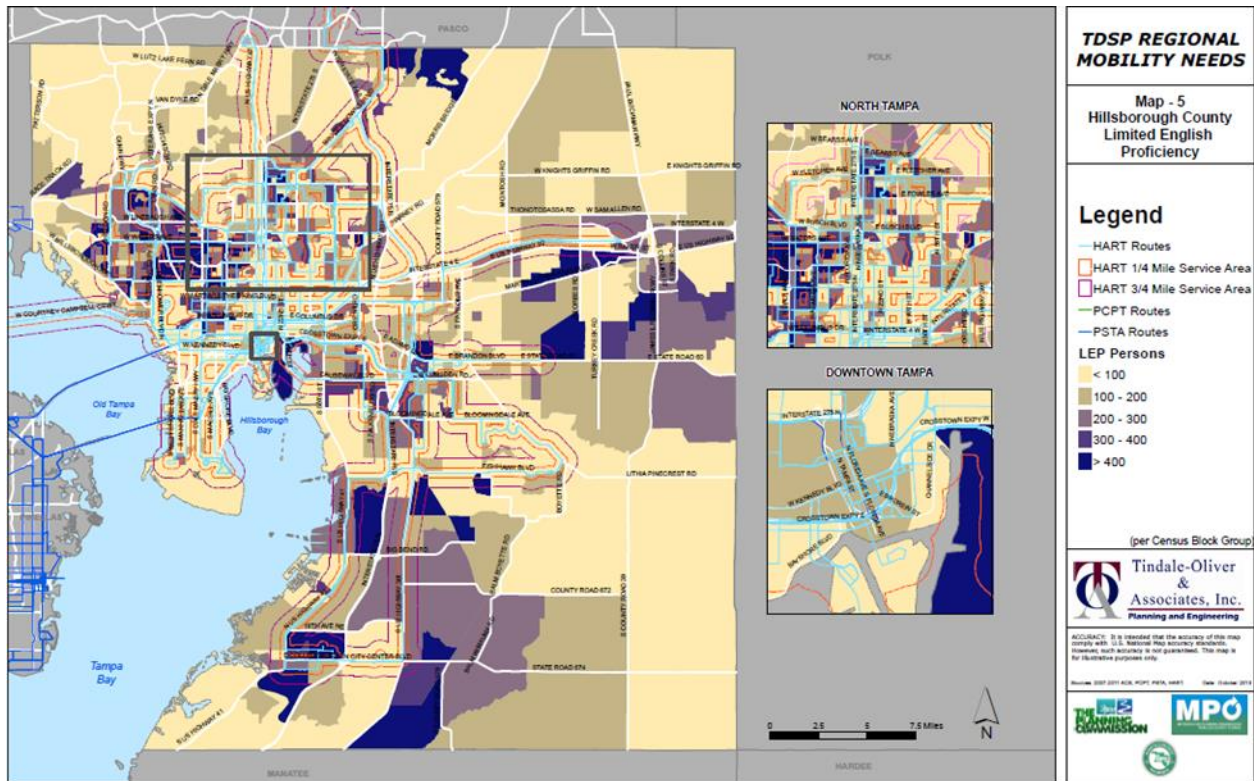


Source: Pasco County MPO; Hillsborough County MPO; Pinellas County MPO, 2014.

# Appendix B: Financial Analysis of Missed Appointments

## TOOL #3: Cost Methodology of Missed Appointments and the Financial Impact to Health Centers

To determine the average cost of an unused appointment, the following simple methodology can be used.

**Step 1:** Determine the total annual cost to operate the health center site.
**Step 2:** Determine the maximum number of scheduled appointments annually.
**Step 3:** Divide the total annual cost by the maximum number of scheduled appointments.

*Example:*

| Cost of Health Center | Number of Scheduled Appointments | Average Cost of Scheduled Appointments |
|---|---|---|
| $5,000,000 | 38,000 | $131.58 |

After determining the average cost of scheduled appointments, you can determine the annual cost of missed appointments.

**Step 4:** Determine the annual number of missed appointments that are not filled by other patients.

*Example:* It is determined that 20% of all scheduled appointments are missed and not filled by other patients. The calculation is 38,000 x 0.20 = 7,600. Thus, there were 7,600 missed appointments that were not refilled.

**Step 5:** Calculate the annual cost to the health center of these missed appointments.

*Example:* The calculation is 7,600 x $131.58 = $1,000,008.

**Step 6:** Calculate the number of missed appointments due to transportation issues.

*Example:* If you determine that 40% of all missed appointments are due to transportation barriers, then the calculation is 7,600 x 0.40 = 3,040. Thus, there were 3,040 missed appointments.

**Step 7:** Calculate the cost of missed appointments due to transportation issues.

*Example:* The calculation is 3,040 x $131.58 = $400,003.20

**Step 8:** Establish a goal for reducing missed appointments due to transportation barriers.

*Example:* Set a goal of reducing missed appointments to due to transportation barriers by half (1,520) with identified strategies. Calculate the potential savings: 1,520 x $131.58 = $200,001.60. Your health center will recoup $200,001.60 in costs if you are successfully able to reduce missed appointments.

**Step 9:** Estimating costs includes calculating the Return on Investment (ROI) for different strategies.

*Example:* Your strategy to reduce missed appointment due to transportation barriers is to offer a shuttle service for patients who live more than 20 miles from the health center, at a cost of $100,000 annually. Subtract the $100,000 from the total amount you recouped to determine your ROI. In this example: $200,001.60 - $100,000 = $100,001.60.

Even with the costs associated with providing a shuttle service, your health center would still recoup significant costs if it is able to reduce missed appointment due to transportation barriers by half.

Source: Health Outreach Partners, 2017

# Appendix C: FDOH-Pinellas CHIP Strategic Action Plan.

## Appendix 1: Action Plans

**Pinellas County CHIP: 2016-17**
**Access to Care**

| Goal | Strategy | Objective | Activity 2016-17 | Process Measure 2016-17 | Coordinating Agency | Partner Agencies | Outcome Measure(s) |
|---|---|---|---|---|---|---|---|
| **AC 1: Provide equal access to appropriate health care services and providers** | 1.1: Address barriers in accessing existing health care services and consumer utilization in underserved communities | 1.1.1: By Dec 31, 2017, decrease the percentage of Pinellas adults who are unable to access a health care provider due to cost from 16% (2010) to 14.4%. | 1. Promote Direct Connect Partnership between PSTA and Uber to community partners (including TD late shift). 2. Implement St. Petersburg Police Dept. Mobile Resource Bus Connection. | 1. Promote program and PSTA events to a minimum of one community group per quarter. 2. Publicize mobile resource bus to community partners each month. Track and increase number of residents connected to resources during the August 2016-July 2017 CHIP period. | 1. PSTA 2. Healthy St. Pete | 1. Uber, DOH-Pinellas 2. Foundation for a Healthy St. Pete, DOH-Pinellas, SPPD | Adults who had a medical checkup in the past year |
| | 1.2: Develop and implement a standardized training program for Community Health Workers. | 1.2.1: By Dec 31, 2017, increase the number of trained Community Health Workers (CHWs) in Pinellas by 25% over baseline. | Strategy met: http://flcertificationboard.org/certifications/certified-community-health-worker-cchw/ | | | | 15% of identified CHWs have enrolled in or completed a standardized training |
| | 1.3: Promote the completion of a cultural and linguistic competence organizational self-assessment to improve access to culturally competent care. | 1.3.1: By Dec 31, 2016, decrease the percentage of Pinellas adults who believe they would receive better medical care if they belonged to a different race/ethnic group from 7% (2010) to 6.3%. | 1. Implement Cultural & Linguistic Competency Initiative | 1. 4 organizations complete CLC program led by TBHC. | Tampa Bay Healthcare Collaborative | Collaborative Labs USF Public Health | CLC cohort completed |

Source: FDOH-Pinellas, 2017