Provider perspectives on six strategies to overcome the barriers to older adult use of alternative transportation services: Evidence from seven communities

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1. Introduction

America is aging. Individuals aged 65 and older comprise roughly 14.1 percent of the population and they are projected to account for 21 percent of the population by 2040 (Administration on Aging, 2013; U.S. Census Bureau, 2016). This growing older adult population requires reliable and convenient transportation to maintain social connections, access goods and services, and fulfill other household needs. Given that 19 percent of older adults live outside metropolitan areas and lack easy access to public transportation services (Administration on Aging, 2013), there is a particular need to understand how to effectively meet the transportation needs of older adults residing in suburban, small community, and rural environments.

While many older adults will continue to rely on the private automobile as their primary means of transportation, alternative transportation services that go beyond traditional fixed transit or paratransit services could also play important roles by providing mobility to older adults who lack access to automobiles or to those who might choose to use these services if they were more reliable, convenient, and affordable. For these services to play such roles, transportation providers must work to overcome the barriers that prevent older adults from using them. Transportation providers have implemented several strategies to address these barriers, including the use of volunteer drivers, service coordination, mobility management, travel training, time banking, and door-through-door service. Given the importance of transportation access for older adult wellbeing, there is a need for information about each strategy's ability to overcome the barriers to older adult use and meet their mobility needs.

This paper uses insights derived from case studies of several service providers, including traditional transit operators, public health agencies, and non-profit organizations, to identify important lessons about a series of planning strategies that have been implemented to encourage older adult use of alternative transportation services. The case studies highlight important challenges confronting providers, as well as the efforts they have undertaken to address them. The case studies also indicate that while the strategies show some promise for implementation in a diversity of settings, better data is needed to more carefully assess their effectiveness at increasing older adult use in a cost-effective manner.

2. Barriers to older adult use of alternative transportation services

Most older adults rely primarily on the private automobile or walking to meet their travel needs (Alsnih and Hensher, 2003; Hess, 2012). There are several explanations for these choices, including individual preference and perception, service accessibility and quality, an individual's mobility disability, or an individual's cognitive impairment. For alternative transportation services to become a realistic travel option for larger numbers of older adult users, providers must devise strategies that eliminate, reduce, or mitigate these barriers. By alternative transportation services, we mean to say transportation services other than the private automobile.

First, individual preference for the automobile arises from a lifetime of automobile use, a desire to maintain independence, and negative perceptions of the safety, comfort, or reliability of other transportation options (Hess, 2012; Kerschner and Rousseau, 2008). Baby Boomers, who are entering retirement age, have relied predominantly on cars to meet their transportation needs throughout their lives and their preference for the automobile will likely persist into retirement (Rosenbloom, 2004). The automobile has proven a convenient mode for aging Baby Boomers because it best fits the auto-oriented, suburban developments in which many work and live, and it provides them with control over their mobility. Older adults may resist using other forms of transportation if they perceive these modes as reducing their independence. They are frequently discouraged from using alternative transportation services due to a perception of inconvenient stop locations, poor stop designs, and unsafe walking environments (Peck, 2010), a negative experience that results from interaction with drivers or other users (Kerschner, 2006), anxiety that out-of-vehicle mobility needs that arise due to their frailty or disability might not be met (Kerschner and Rousseau, 2008), and negative perceptions of service reliability, wait time, or travel time to reach a destination (Hess, 2012).

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Second, alternative transportation services may be unavailable or inaccessible to older adults, due to their absence from a given geographic area, the distance of stops to homes, the locations of routes, the distance of goods and services to homes, and/or the hours of service operation (Hess, 2012; Rosenbloom, 2009). This is a particularly difficult issue in small suburban communities and rural areas. Because non-urban environments usually possess fewer resources, services in these locations tend to be characterized by sparser networks with infrequent service and/or demand-responsive services, where scheduling constraints or eligibility requirements sometimes serve as barriers to older adult use. Also, if stops are located at distances or in locations that are difficult for older adults to easily reach by walking, service becomes inaccessible for these individuals (Hess, 2012). The amount of service provided, the time of day it is available, and the inability of providers to adjust schedules and/or reduce wait times can lead to frustration on the part of older adults who may then decide not to use the service (Kerschner and Rousseau, 2008).

Third, individual mobility impairments that restrict one's ability to carry out their daily activities may act as barriers to using alternative transportation services (Rosenberg et al., 2011). When mobility is impaired, an individual might have difficulty getting to stops and/or boarding vehicles. The individual's circumstances become more challenging when they also have a secondary conditions, such as arthritis, cardiovascular disease, stroke, loss of muscle mass, and high body fat that further impair their mobility (Centers for Disease Control, 2013; Newman and Brach, 2001; Rosenberg et al., 2011; Satariano et al., 2012).

And finally, individual cognitive impairment may act as a barrier to using alternative transportation services. This impairment might cause an individual to get lost or confused on the way to a stop, forget their intended destination, have difficulty managing fare transactions, or have difficulty coping with unexpected situations that might emerge during a trip (Centers for Disease Control, 2013; Florida Department of Elder Affairs, 2016). Older adults are at increased risk of cognitive impairment (McKnight, 2003; Peel et al., 2005).

3. Strategies to overcome the barriers to older adult use

The literature also highlights several strategies that might be employed to overcome the aforementioned barriers. General strategies to increase user access to alternative transportation services include the provision of flexible route services that deviate to serve on-demand passengers (Alshalalfah and Shalaby, 2011; Broome et al., 2012) or traditional demand responsive services provided at a passenger's request using passenger car, van, or small bus that operates door-to-door or curb-to-curb (National Center for Senior Transportation, 2012). Specialized marketing and outreach to increase older adult knowledge of such services include speaker presentations at senior centers, mailing brochures to clients of older adult-serving organizations, use of websites, news releases and publications, and social marketing to the older adult population (Cevallos et al., 2010).

The authors obtained additional insights about strategies being used to attract older adult users from the results of a national, web-based survey of service providers (Brown et al., 2016). The survey sought to highlight strategies that appeared particularly promising for increasing older adult use of alternative transportation services in suburban, small community, and rural environments that lack many of the resources available in urban areas, and also have land use patterns and population densities that make it more difficult to operate traditional fixed-route transit services. The survey participants included local transit agencies, non-profit organizations, councils on aging, and social service agencies who were selected by the authors in partnership with the Florida Department of Transportation, which funded the survey, to provide a geographically diverse set of respondents. The survey results highlighted several different types of transportation services offered by agencies in these settings for older adults, including fixed-route

services, deviated or flex-route services, special destination services, demand response services (including door-to-door, door-through-door, and curb-to-curb services), and volunteer driver programs, among others.

Based on a careful consideration of these survey results and insights obtained earlier from literature review, the authors selected six strategies as being worthy of more detailed investigation. These strategies are described below.

1) *Volunteer drivers* programs rely on volunteers who use their own vehicles to transport qualifying individuals from place to place, and thus allow providers to offer flexible and personalized service at a substantially reduced cost compared with using paid staff (National Volunteer Transportation Center, 2016). The use of volunteers allows agencies to provide more service, and potentially over a wider area, than would otherwise be financially feasible. In many cases, volunteer drivers receive a mileage or fuel reimbursement as compensation.

2) *Time banking* programs allow volunteer drivers to accumulate time credits that can be donated or exchanged for future rides should they someday need assistance with transportation (Collom et al., 2016). By providing an individualized transportation option for participants, time banking permits rides to be organized based on the user's schedule and specific origin(s) and destination(s), ensuring easy and accessible transportation tailored to meet their needs. Because it relies entirely on volunteered time and skills, time banking is effectively a no-money-cost strategy for members.

3) *Travel training* programs uses experienced individuals with knowledge of a transportation service to teach new riders how to use it, allowing them to become more comfortable and confident users (Hardin, 2005; National Center for Senior Transportation, 2012). Travel training can help reduce misconceptions that older adults might have about using alternative transportation services, while also alleviating their concerns about the complexities of timetables, route structures, fares, and other attributes of the service. For older adults with mobility or cognitive impairments, travel training can help them become more at ease using wheelchair ramps, accessible seating, and large-font labels for the visually-impaired, as well as availing themselves of the assistance of drivers and dispatchers.

4) *Door-through-door services* provide companion service that involves a greater degree of rider-driver interaction than curb-to-curb paratransit service and can be particularly beneficial to older adults with a mobility disability and/or cognitive impairment (Grantmakers in Aging, 2016). Drivers function as full-service companions for each client, assisting them with pre-trip and post-trip activities as needed and thus providing a greater degree of one-on-one interaction between client and driver than traditional paratransit service. Older adults may see it as providing a companion relationship over time, and this companion relationship is key to the strategy's appeal among older adults who are frail or wary of accepting assistance from strangers.

5) *Service coordination* involves a central agency that coordinates transportation services across large areas based on individual clients' transportation needs. Service coordination is especially helpful for providers who wish to serve clients who may begin or end their trip beyond the service area or outside the service hours of any given network or program, as it allows the provider to partner with a peer agency in order to complete the trip to the client's satisfaction.

6) *Mobility management* involves the use of designated staff in an agency who work with individual clients to develop personalized transportation plans to meet their unique needs as passengers (National Center for Senior Transportation, 2012). The process of helping a client to formulate a personalized plan can empower the client to feel more confident and secure in using the transportation options that they integrate into their plan.