Transportation, Accessibility, and Accommodation in Rural Communities

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Overview

Transportation symbolizes mobility and the ability to have access to services, health care, work, school, shopping, and entertainment and social venues. In rural, frontier, and territory (RFT) communities, as well as in small urban towns, transportation consists primarily of personal vehicles because these areas do not have the transportation infrastructure as larger areas (American Public Transportation Association, 2012). However, nearly 6% of rural households and more than 6% of small urban households do not have access to private vehicles (U.S. Department of Transportation & Federal Highway Administration, 2011). A continual distinction of rural areas from small urban towns is that transportation expansion is still disproportionately unavailable for RFT communities. The need for transportation in RFT communities cannot be understated. This is particularly true for older residents, for as people age so too does the need to be able to access health care. Approximately 21% of Americans over the age of 65 do not drive; thus, access to transportation is critically important for older adults in RFT communities (Lynott & Figueiredo, 2011). Although the percentage of women drivers age 65 and older is increasing, older men continue to drive more than women of the same age, and, on average, men age 65+ drive twice as many miles as women (Lynott & Figueiredo, 2011). See Chap. 11 for further discussion on the elderly in RFT communities. In the USA, only 32% of all rural counties have full access to public transportation services, and 28% have limited access, leaving 40% of rural residents with no public transit options at all (Brown & Stommes, 2004). For rural residents living near or below the poverty level, limited transportation options isolate and restrict access to government services and programs designed to assist them (Criden, 2008; Shoup & Home, 2010).

Access to transportation in rural communities in general, and public transportation, in particular, offers residents numerous benefits, including (a) lower household expenses due to freeing up of income for other uses, (b) reduced social and economic inequalities through enhanced mobility for residents, (c) improved economic efficiency by allowing unemployed individuals to have a means to find and keep a job, and (d) preservation of rural communities and sustaining of their character (Criden, 2008). Although these benefits apply to all residents in RFT communities, for those with disabilities, these benefits can often mean the difference in independence and self-determination.

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Learning Objectives
By the end of the chapter, the reader should be able to:

1. Identify transportation challenges in rural communities.
2. Distinguish the extent of transportation challenges for various types of rural regions.
3. Understand federal transportation policy and programs regarding transportation accessibility and accommodation for persons with disabilities.
4. Compare and contrast models of rural transportation.

Introduction

Rural, frontier, and territory areas are defined primarily by population density, geographic characteristics, and distance between residents. The Dye Management Group (2001) describes three types of rural areas. First, *basic rural* areas are dispersed counties or regions with few or no major population centers of 5000 or more that are mainly characterized by agricultural and natural resource-based economies, stable or declining populations, and "farm-to-market" localized transportation patterns. Second, *developed rural* areas are dispersed counties or regions with one or more population centers of 5000 or more, economies tend to be mixed industrial and service based in the cities and agricultural and natural resource based in the rural areas, with populations that are stable and growing, and more diverse transportation (i.e., commuting, intercity travel/freight). Third, *urban boundary rural* areas are counties or regions that border metropolitan areas and are highly developed, and economic growth, population growth, and transportation are tied to the urban center. Clearly, basic rural areas experience greater transportation challenges.

The rural transportation system is characterized by disparate parts, substantial decentralization, and different levels of government (city, county, state, federal) funding maintenance of roads, and the operation of rural public transit is primarily the responsibility of local government (Dye Management Group, 2001). The primary focus of this chapter is on the transportation issues and concerns for persons with disabilities in basic RFT communities. Accessibility refers not only to being able to use public transportation but also to transportation as the "connection between the community and its needs, and livability, the characteristics that make the community a desirable place to live" (Shoup & Home, 2010, p. 6). As persons with disabilities in RFT areas are faced with fewer services and available jobs and training locally, transportation becomes critical for successfully accessing many of the services that can assist them in various facets of their lives.

Transportation is considered to be a basic but essential need for ongoing health care (Syed, Gerber, & Sharp, 2013) and additional professional services one might require. Yet, residents with disabilities and service providers in RFT communities often report lack of transportation as one of the most significant and persistent barriers to accessibility (National Council on Disability, 2005a). Moreover, adults with disabilities are twice as likely as those without disabilities to have inadequate transportation (Centers for Disease Control, 2005; National Council on Disability, 2005a, b). Transportation and mobility play key roles toward equal community access for persons with disabilities (PWDs) because affordable, reliable, and accessible transportation allows access to important opportunities that include, but are not limited to, education, employment, health care, housing, and social involvement. For PWDs in RFT areas, the need is especially great (American Association of People with Disabilities [AAPD], 2016). Of the over 2 million PWDs who never leave their homes, lack of transportation is the reported reason for 560,000 (US Department of Transportation, 2003). Transportation has historically been labeled as one of the greatest barriers to PWD (Saunders, Leahy, McGlynn, & Estrada-Hernandez, 2006), and in light of the report from the US Census Bureau (2011) indicating that roughly 8.6 million PWDs live in rural areas, transportation inadequacies may result in even

more significant hardships for these residents. Furthermore, the Bureau of Labor Statistics (2013) report the second highest cause for unemployment among PWDs is lack of transportation (11.7%). Considering RFT communities have greater percentages of PWDs, ensuring available and accessible transportation is critical.

Barriers to Rural Transportation

Transportation barriers have a significant impact on PWD's opportunities to fully participate in their community (see Table 3.1). Adequate, accessible transportation is necessary to facilitate social and vocational involvement (Christensen, 2014; Crudden, Sansing, & Butler, 2005; Iezzoni, Killeen, & O'Day, 2006; National Council on Disability, 2005a, b). In RFT communities, residents often experience greater traveling distance for everyday needs (i.e., grocery shopping, paying bills, doctor visits, socialization, etc.). Therefore, families with access to transportation are much better positioned to engage in activities that facilitate well-being. People with disabilities travel less frequently and are more likely to rely on public transportation than the general population (Penfold, CLeghorn, Creegan, Neil, & Webster, 2008). Often, geographic distance, extreme weather (see Chap. 33), and challenging roads (i.e., unsafe and underdeveloped roads) limit residents from accessing services. Even if individuals are able to overcome these challenges, choice of transportation other than a personal automobile is often limited or nonexistent (Pucher & Renne, 2005). Transportation barriers in RFT communities include (1) households distributed over large geographic areas, (2) low population density resulting in decreased demand, and (3) unpredictable level of demand (Valega, Nelson, Wright, & Farrington, 2014). The lack of transportation has been identified as a critical problem for individuals living in rural communities (Arnold & Seekins, 1998; Research and Training Center on Disability in Rural Communities [RTC], 1995; Rojewski, 1992), and, as the result of unavailable, inaccessible, and unresponsive transportation, individuals' ability to access necessary services is significantly affected (Rojewski, 1992; RTC Rural, 1995).

Table 3.1 Barriers to rural transportation

Barrier	Example
Availability	No public options exist
Accessibility	Older buses without lifts and infrastructure barriers
Lack of appropriate infrastructure	Curb cuts, sidewalks, paved roads, street lights, covered and accessible bus stops
Limited bus schedules	Operates from 6:00 am to 9:00 pm (results in challenges for those working atypical shifts)
Long commute distances and travel times	Frequently more than 30 miles
Limited number of bus stops	PWDs may have difficulty getting to the nearest stop
Lack of information for bus schedules, fares, and routes	Limited access to main bus terminal to acquire necessary information

Although transportation may be available, if it is not available to *everyone*, then it is not accessible (RTC Rural, 2012). Accessible transportation includes all aspects of transportation (e.g., public transit systems, vehicles, routes, stops, infrastructure), which should meet or exceed the minimum requirements set forth in the Americans with Disabilities Act (National Council on Disability, 2015).

Considering accessibility, thorough assessment of the barriers precluding PWDs from full utilization of transit options is warranted. Assessment variables include traveling distance to a bus stop and whether the route has a clear and accessible path (e.g., sidewalk, even pavement, curb cuts), clearly demarcated bus stops, and accessible seating. In urban areas, bus stops are commonplace, but in rural communities, even if a bus is available, the stop may be a significant distance from one's home. Moreover, if a bus stop exists, it is frequently uncovered and lacks accessible seating. Rittner and Kirk (1995) reported that public transit services were not only inconsistent, but bus stops were of poor quality and perceived to be unsafe. Operational challenges exist for available bus services, including significantly limited bus schedules, and although schedules

may accommodate shopping and appointment needs, they are not suited, due to the variation of hours worked, to transporting individuals to places of employment (RTC Rural, 2012).

Infrastructure

Infrastructure is operationalized as physical barriers to effective transportation in rural communities – the environmental features required to support accessible transportation for PWDs. A developed infrastructure is critical to economic opportunity, quality of life, and inclusion (Council of Economic Advisors, n.d.). As one considers the landscape of a typical urban or suburban environment, a number of commonalities can be found: accessible sidewalks, crosswalks with signals (frequently with both visual and auditory alerts), curb cuts, bus stops with appropriate signage, paved roads, and numerous sheltered bus stops. Accordingly, safe and accessible rights-of-way are critical elements of community life and are essential to viable transportation for PWDs (AAPD, 2016). Although most rights-of-way are built and maintained by local governments and often comply with ADA standards, communities are not mandated to provide infrastructural changes if they do not already exist (Rosenbloom, 2007). These environmental factors, although not commonly considered, allow PWDs to be mobile and have access to the various transportation modalities.

RFT communities, on the other hand, exhibit considerable variation with regard to the existence and quality of such features and, as the result of declining population, have been presented with new challenges in the preservation and management of infrastructure. In rural communities, it is not uncommon to have paved roads with open ditches on the sides, which results in pedestrians having to walk along the side of the road, which is often comprised of loose material (Easter Seals Project Action, 2011). The absence of sidewalks makes accessing a bus stop and boarding the bus challenging. Individuals who use wheelchairs require curb ramps to cross streets to reach a bus stop, yet certain types of curb ramps (e.g., diagonal) are unsafe for a person with a visual impairment (Thatcher et al., 2013). Therefore, even if rural communities currently have public transportation options, getting to the bus stop may be exceedingly difficult or impossible (Iezzoni, Killeen, & O'Day, 2006). For a community to plan to address the barriers for PWDs previously discussed, securing the necessary resources can present difficulties.

Transportation Funding

Compared to the federal resources allocated to urban areas, the allocation for rural transportation is inequitable (NCD, 2015). As of 2010, over 25% of the US population resides in rural communities, yet only 6% of federal transit funding is allocated to serve them (Association of Programs for Rural Independent Living, 2010). Rural areas often fall through the cracks of federal transportation policy, which focuses on statewide priorities for building new highways and often lacks consideration for local needs and preferences. Federal funding is allocated to most rural areas through state departments of transportation (DOTs), while small metropolitan planning agencies (MPOs) and rural planning organizations (RPOs) have limited decision-making authority and control over funding. The decisions that affect local transportation initiatives are often made with little attention to local needs and concerns of the community (Transportation for America, n.d.).

This lack of available funding, both at the state and federal level, can prevent local government agencies and transportation providers from meeting the needs of all consumers. Moreover, according to the Dye Management Group (2001), funding for such projects in many rural areas can prove daunting as the result of insufficient funding provided by the state and a limited financial base from which to levy taxes to generate project income. Unfortunately, the transportation infrastructure is principally maintained by local property taxes, and federal assistance for local rural infrastructure is largely nonexistent (Hossain, Romanoschi, & Emig, 2003).

As a result of increased automobile use, public transportation, which relies heavily on passenger fares, has become increasingly reliant on public subsidies and limited funds from the federal government (American Association of Retired Persons, 2012). Although the funding dilemma persists, there are a number of options available to rural communities, which will be discussed in detail in the following pages.

Geographic Challenges

Although sufficient funding undoubtedly resolves some of the transportation barriers, many rural areas continue to face challenges that are specific to topography and geography. Urban communities differ significantly from their rural counterparts in many ways, and the environmental landscape is one of the main obstacles to address. Although there are accessible routes leading to and from most rural communities, the distance one is required to travel to necessary destinations (e.g., health care, employment, shopping) presents challenges. The low population densities of rural communities, and the resultant distances and travel times between needed services, make it significantly more difficult for rural residents to reach necessary targets (Pucher & Renne, 2005). This concept has been demonstrated in a number of studies addressing barriers for individuals receiving health care (Guidry, Aday, & Zhang, 1997; McCray, 2000; Okoro, Strine, Young, & Balluz, 2005). The long distances between rural residences, employment opportunities, and necessary services create significant unmet need for transportation options in rural communities. Additional features found in rural areas include steep grades, mountain passes, and often poorly maintained roads, which makes providing public transportation in rural areas especially complex and expensive (Kihl, Knox, & Sanchez, 1997). Furthermore, extreme weather conditions may result in difficulties keeping roadways and rights-of-way clear for vehicle and pedestrian use. For a more detailed description of climate and geographic challenges in rural communities, see Chap. 33.

Federal Transportation Policy and Programs for Persons with Disabilities

Equity in transportation for persons with disabilities is mandated in various bills and legislation. Yet, with reauthorization of those mandates, funding amounts and policy needs continue to be hotly debated. On one hand, the debate is focused on political ideology and resources. On the other hand, the debate is fueled by arguments on inclusion, empowerment, and social justice. Because persons with disabilities are disproportionately reliant on public transportation, any change in resources available to support public transportation disproportionately affects them (Gaylord, Abeson, Bosk, Timmons, & Lazarus, 2005). In this section we discuss relevant legislation and programs that address transportation for persons with disabilities.

The Rehabilitation Act of 1973 Although the Rehabilitation Act of 1973 is considered by many to be the seminal legislative means through which transportation for PWDs was brought to the forefront of public discourse, federal assistance for transportation for PWDs began in 1944 with the Social Security Act (Poister, 1982). Effective legislation, however, wasn't established until 1970 when the Urban Mass Transportation Assistance (UMTA) Act of 1964 was amended with section 16, which established a national policy for the elderly and PWDs to "have equal status with other persons in being able to utilize mass transit facilities and services" (Poister, 1982, p. 7). Ultimately, legislative policy regarding transportation services for PWDs was solidified with the passage of the Rehabilitation Act of 1973. Section 504 of the Rehabilitation Act of 1973, commonly known as the civil rights bill for PWDs (Dempsey, 1990–1991), provides that:

> No otherwise qualified person with handicaps in the United States…shall, solely by reason of her or his handicap, be excluded from participating in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. (Rehabilitation Act of 1973a)

Therefore, programs receiving federal funds (e.g., rural communities and transit systems) may not discriminate against those with disabilities based on their disability status, which translates to ensuring available and accessible transportation options.

The 1973 act as amended provides discrimination protection to persons with disabilities and includes issues relating to discrimination (e.g., transportation). One of the challenges with the various legislative pieces lies in assessing and demanding compliance, similarly found with the implementation of the Americans with Disabilities Act toward employment. Besides ensuring PWDs are not discriminated against regarding those entities receiving federal funding, Section 508 of the Rehabilitation Act of 1973 stipulates that all electronic and information technology must be made accessible to PWDs. This would include transit schedules necessary for transportation planning.

> Individuals with disabilities who are members of the public seeking information or services from a federal department or agency to have access to and use of information and data that is comparable to the access to and use of information and data by such members of the public who are not individuals with disabilities. (Rehabilitation Act of 1973b)

Unfortunately, the exact service requirements for transit system operators were not identified. Although there have been numerous legislative mandates since the passage of Section 504 of the Rehabilitation Act of 1973, this act serves as the foundational legislative act for accessible and equitable transportation for PWDs.

The Americans with Disabilities Act The Americans with Disabilities Act (ADA), passed in July 1990, was designed to eliminate discrimination against persons with disabilities in areas such as employment, public services, telecommunications, and transportation. The ADA is recognized as the landmark civil rights law that addresses the rights of persons with disabilities. Moreover, Subtitle B of Title II further solidifies transportation requirements set forth in Section 504 of the Rehabilitation Act of 1973 (Rubin & Roessler, 2008). Title II also extends the requirements beyond those transportation systems receiving federal funding to include public transportation systems not receiving funding (U. S. Department of Justice, 1992). The ADA significantly expanded transportation options for PWDs by mandating public bus and rail operators to provide accommodations, such as lifts and ramps, to afford those who use wheelchairs equal access to services.

Title II of the ADA (http://www.ada.gov/pubs/adastatute08.htm) addresses accessibility and accommodation in public transportation (e.g., city buses and public rail) and prohibits discrimination by entities providing public transportation (Kaun, 1995). Under the ADA, discrimination on the basis of disability in public transportation is prohibited; all new vehicles used in public transit must be accessible; key existing rail stations and all new rail stations and facilities must be accessible; and transit operators must provide paratransit (on-demand, door-to-door) services for those who cannot use available mass transit (AAPD, 2016). The ADA spelled out what was necessary to make all transit options accessible to PWDs. In particular, Title II emphasized the minimum requirements for infrastructure design at transit stops (e.g., landing pads, shelter requirements, accessible paths, signage). Furthermore, as described by Koppa et al. (1998), paratransit is no longer considered a substitute for accessible fixed-route service – rather, both are required. The specific requirements of the ADA discuss that transit operators shall provide complementary paratransit services that are similar to the fixed-route system (Sec. 37.121). Qualified users of the paratransit would include those PWDs who are limited in their ability to travel from a point of origin to the nearest fixed-route stop or are unable to board the bus at the stop. Additionally, Title II includes that public agencies can only buy accessible vehicles for fixed-route services (Sec. 37.71) and for demand-responsive services (Sec. 37.77). For a more detailed discussion of the ADA and its impact on PWDs in rural communities, see Chap. 31.

Surface Transportation Legislation In 1991, a landmark piece of legislation, the Intermodal Surface Transportation Efficiency Act (ISTEA),

was passed, which resulted in increased funding (particularly to nonmetropolitan areas), increased local decision-making, and collaboration with the private sector. ISTEA was the seminal piece of legislation giving rise to a number of effective legislative bills. In 1998 and 2005, the Transportation Equity Act for the twenty-first century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A legacy for Users (SAFETEA-LU) were passed, respectively. TEA-21 gave states and localities increased flexibility in allocating funding: a portion of which was designated for rural communities (Stommes & Brown, 2002). Similarly, SAFETEA-LU authorized $286.5 billion to fund the nation's transportation network, including paratransit and grant programs related to transportation for persons with disabilities (AAPD, n.d.). This bill originally expired in 2009, but several short-term extensions extended provisions through 2012. In July of 2012, the Moving Ahead for Progress in the twenty-first century (MAP-21), a $105 billion surface transportation authorization, reauthorized the SAFETEA-LU and was signed into law. MAP-21 includes apportionment for Statewide and Nonmetropolitan Transportation Planning, which includes provisions to increase accessibility and mobility of people, improve quality of life, and increase the safety of the transportation system (North Central Texas Council of Governments, 2016a).

Signed into law in 2015, the Fixing America's Surface Transportation (FAST) Act (23 U.S.C. 135) is the most current legislation that directly applies to surface transportation and will continue through 2020. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. Additionally, the Statewide and Nonmetropolitan Transportation Planning mandates from MAP-21 were reauthorized and amended to direct planners to focus on intercity buses, bus facilities, and vanpool providers (North Central Texas Council of Governments, 2016b). Section 3006 addresses the enhancement and mobility of seniors and PWDs by improving coordination of services, Section 3007 provides formula grants for rural areas, and Section 3023 reemphasizes paratransit. Although the intent of these laws is admirable, little progress has been made with regard to transportation barriers in rural communities.

The federal government currently funds and administers several programs that provide resources to help improve transportation options for persons with disabilities. These programs include the 5310 Program (Elderly and Persons with Disabilities), the 5311 Program (Nonurbanized Area Formula Grants), 5316 Program (Job Access and Reverse Commute Program [JARC]), and 5317 Program (New Freedom Initiative Transportation Program).

The 5310 Program The 5310 Program (49 U.S.C. 5310) provides formula funding to nonprofit agencies to help increase transportation options that connect the elderly and PWDs directly with needed services by removing barriers and expanding options (Federal Transit Administration, 2016a). Funds are apportioned based on each state's share of the population for those two groups. This program is particularly important because it assists the elderly and PWDs in meeting transportation needs where services are unavailable, insufficient, or inappropriate (NCD, 2015). Nonprofit agencies do not receive funding directly; instead, states apply on behalf of non-private agencies. Funds are restricted for use only for capital projects (projects that help maintain or improve infrastructure) and almost all funding is used to purchase vehicles. States (20%) are required to match federal funds (80%). States' departments of transportation then make decisions about how funds are distributed to nonprofits (Gaylord et al., 2005).

The 5311 Program The 5311 Program (49 U.S.C. 5311 (b)(3)) are formula grants for rural areas that provide funds for capital, planning, and operating assistance to states to support rural transportation in areas with populations of less than 50,000 (Gaylord et al., 2005). Similar to the 5010 Program, an 80/20% match is required; however, a higher match for the local

portion is required when funds are used for operating assistance. Additionally, each state is required to spend at least 15% of its allocated amount for the development of intercity bus transportation (Federal Transit Administration, 2016b). The 5311 Program offers significant apportionment to assist rural communities in establishing or the improvement of existing public transit services.

The 5316 Program The Job Access and Reverse Commute (JARC) Program (49 U.S.C. 5316), established in 1998 as an amendment to TEA-21, is designed to address the unique transportation challenges of welfare recipients and other low-income individuals seeking employment (Federal Transit Administration, 2016c), who are largely located in suburban areas. The program was designed to aid both urban and rural areas, but the legislation highlighted the unique transportation needs of rural communities and how employment is negatively impacted (Stommes & Brown, 2005). The JARC program consists of two components: (1) access to employment through the establishment of improved transportation (e.g., shuttles, new bus routes) and (2) reverse commute by providing transportation to suburban employment from distant locales. Due to the fact that few jobs are located in low population density rural areas where public transportation is unlikely, residents have little choice but to travel long distances to work, which makes JARC highly necessary (Kaplan, 2005).

State and local governments, nonprofit organizations, and local transportation providers are eligible for these funds. Although this program is not designed to serve rural areas, 20% of funds are only made available for these communities with a population less than 50,000. Moreover, this program is also not specifically aimed at PWDs but is considered a resource connecting the large numbers of PWDs living in rural communities to employment. Recipients are required to provide a 50% match for operating and a 20% match for capital projects, and funds are distributed through a competitive grant process but historically have been earmarked for specific projects (Gaylord et al., 2005).

The 5317 Program New Freedom Initiative Transportation Program (49 U.S.C. 5317) was created by the 2005 SAFETEA-LU legislation and is designed to go beyond the ADA in finding new ways to provide transportation for PWDs (Seekins, Enders, Silvia, & Rural Institute, 2010). The New Freedom Program is a formula grant, which is apportioned to local transportation providers, and 20% must be allocated to rural areas. The funds may be used for providing rides, training, or capital purchases. The New Freedom Program affords rural communities the opportunity to fund transportation initiatives for PWDs.

The Easter Seals Project ACTION (Accessible Community Transportation in Our Nation) Project ACTION was initiated by Congress to foster collaboration between the disability and transit communities to promote accessible transportation. Easter Seals administers the project through a cooperative agreement with the US Department of Transportation, Federal Transit Administration. The project provides training, technical assistance, and a full catalog of resources to the disability and transportation communities (Gaylord et al., 2005). The overriding goal of Project ACTION is to promote equal access to transportation for PWDs.

Models of Rural Transportation for People with Disabilities

Approximately 41% of the rural population lives in counties with no public transportation (Rural Disability and Rehabilitation Research Progress Report, 2007). Public transportation systems serve the general public without restriction and are typically organized in one of three models: fixed-route services, demand-response services, or deviated fixed-route services (Seekins, 2007). Fixed-route service, typically a bus, consists of the service traveling on a consistent path on a regular schedule. For riders who cannot use the fixed-route service, demand-response may be a feasible option. With this service, riders can call in advance to arrange a time to be picked up and taken to his/her desired location. Deviated fixed-

route services operate as a hybrid between fixed-route and demand-response services where the vehicle operates on a fixed-route, but drivers can deviate based on prescheduled requests.

Although the lack of available and accessible transportation presents PWDs with significant challenges, various alternative programs and approaches such as ridesharing, transportation vouchers, accessible taxis, volunteer drivers from nonprofit organizations or local government agencies, and paratransit have been implemented to help rural resident with disabilities obtain transportation to work, school/training, and health care services. If transportation options are to be effective for those living in rural areas, the one-size-fits-all mentality must be abandoned and replaced with a creative and individualized approach (NCD, 2015).

As a result of funding challenges and increased consumer demand, rural communities are faced with finding alternative modes of transportation for PWDs. Voucher programs are one such alternative that have proven to be feasible options for providing transportation services which are nonexistent or inaccessible. Vouchers are tickets that eligible riders who are transportation disadvantaged can exchange for rides (Haarstad, 2008). Vouchers provide an effective solution for individuals who do not have access to transportation options and enable funding agencies (e.g., state offices of vocational rehabilitation, Chamber of Commerce, United Way) to pay public and private transit providers where services exist or to access community resources (e.g., volunteer drivers) where transit is unavailable. The voucher system affords individual increased independence and choice, which results in improved mobility for all users (NCD, 2015). Among the available options for the voucher program, service providers are volunteers and taxi services, which can be invaluable in filling the gaps in existing transportation services while allowing volunteers to receive reimbursement for trips and taxicabs to increase revenue. Also, volunteers and taxicabs can offer increased flexibility for riders when existing options (e.g., paratransit) are not convenient or available.

A rapidly developing business model that may prove beneficial to persons with disabilities with limited transportation options living in rural areas is transportation network companies (TNCs). TNCs serve as intermediaries between those seeking to pay for rides and potential drivers. Transportation experts have described this model as peer-to-peer ridesourcing (Rayle, Dai, Chan, Servero, & Shaheen, 2016). The TNC provides an online or mobile app to connect rider and driver and a fee upon the completion of the transaction (Geron, 2013). Drivers are private contractors working individualized schedules, with many drivers working for multiple TNCs (Rayle et al., 2016). Due to the prohibitive cost of implementing public transportation in rural areas, TNCs create flexible opportunities for services to be offered with minimal investment.

Although potential alternative transportation options exist for individuals living in rural areas, a reasonable solution has yet to be implemented. For those areas where public buses are available, the ADA stipulates that public transit systems provide complementary paratransit services for individuals who are unable to board even an accessible bus or do not have an accessible path to an accessible bus (Rosenbloom, 2007). Paratransit service is a mode of flexible passenger transportation that does not follow fixed routes or schedules and can offer door-to-door service. According to the ADA guidelines, paratransit must operate within a three-quarter mile radius of existing fixed routes and offer service commensurate with fixed-route hours of operation. Eligibility for paratransit service is based on functional considerations to determine which people can most benefit from availability. The vehicles often feature modified vans with lifts to accommodate passengers who use wheelchairs. Paratransit passengers must complete an application and be certified as eligible to use the service (see Table 3.2). Typically, riders can expect to pay up to double the cost of fixed-route fare for an ADA complementary trip, and trip times can be negotiated with the service provider. Additional challenges relate to denial of eligibility, untimely pickups, minimum 24-h lead time on reservations, and extended wait times (National Council on Disability, 2015). Although paratransit offers a valuable service to complement fixed-route bus service, for those living in a rural community without public bus service, paratransit is not considered a viable option.

Table 3.2 Paratransit eligibility requirements

Documentation	Examples
Category 1 – people who can't travel on an accessible bus due to a disability	1. People with cognitive disabilities who may not know when to get off of the bus to reach their final destination 2. People with visual impairments who may not be able to navigate to their destinations
Category 2 – individuals who require accessible buses	One who uses a wheelchair and is able to use an accessible bus but needs to travel to a destination not served by accessible options
Category 3 – people who have a specific disability-related condition that prevents them from getting to the boarding location	1. One who uses a wheelchair but cannot access the bus stop due to geographical or infrastructure barriers (e.g., steep grades, unpaved roads, no sidewalks) 2. A person who walks with a cane and must walk one mile to the nearest bus stop
Supporting documentation	1. Letter from disability service provider (e.g., VR counselor, independent living coordinator) 2. Letter from medical provider 3. Detailed listing of specific barriers (e.g., lack of sidewalks or curb cuts, terrain)
In-person interview with transit personnel	Functional assessment

Note: Adapted from Disability Rights Education and Defense Fund (DREDF)

Summary

Transportation is the critical medium affording PWDs access employment, education, health care, and independent living. Many communities in the USA provide their citizens with a range of transportation options, but the same cannot be said for most rural communities. In fact, the lack of transportation options has been cited as one of the most significant challenges faced by PWDs living in rural communities (Gonzales, Stombaugh, Seekins, & Kaznitz, 2006). Rural residents make up a significant percentage of the US population, but only a paucity of funding is allocated to serve their transportation needs. Although personal vehicles remain the primary means of transportation for individuals living in rural communities, PWDs may be unable to drive and not have access to a personal vehicle nor have supports to transport them to necessary destinations, which makes public transit crucial.

There have been a number of legislative mandates in the past few decades to address transportation barriers for PWDs, but, unfortunately, little impact has been realized in rural areas. Challenges persist for rural communities regarding finding effective and creative solutions to overcome the financial barriers affecting transportation. Improving infrastructure and increasing accessible and available transportation options take funding, but once the necessary advancements have been made, more residents will likely be able to access employment, thereby increasing local tax revenues resulting in a prudent investment. For communities to make progress, these efforts must be viewed as a long-term investment rather than a short-term expenditure.

Although several reasonable options have been presented in this chapter, many rural areas would likely benefit from collaborating with other communities who have made progress in addressing transportation barriers. Options certainly exist, but solutions take the concerted effort of all affected parties working together toward a common goal. No quick fixes are available to overcome inadequate rural transportation, and we certainly have not presented every potential option, but we hope to have offered potential strategies and generated discourse, which will ultimately lead to improvements.

Rural transportation offers a fertile area of research to determine realistic, fundable options to provide transportation for those most in need. Solutions to issues affecting the well-being of a disadvantaged group seldom occur quickly; a continuous, concerted, and persistent effort can result in the necessary solutions resulting in a more equitable transportation system for all commuters.

Discussion Box

Why are we talking about transportation in rural areas?

In the chapter, we learned that although available and accessible transportation is not something many of us consider in our daily lives, for those living in rural communities, it is critically important. There are a number of reasons for the lack of transportation in rural areas (e.g., funding, improper infrastructure, geographical and topographical difficulties), and, as a result, the daily lives of those residents are drastically affected. When we then consider the impact on individuals with disabilities, the significance of inadequate transportation options becomes more salient. Research is clear that the most common form of transportation in rural communities is the private vehicle, but frequently individuals with disabilities are unable to drive themselves. For those with disabilities, having access to transportation is necessary to get to and from medical appointments, employment, and shopping and to afford them the opportunities to fully participate in life. The ADA was passed to ensure that individuals with disabilities had equal access to all of the opportunities and services available to those without disabilities, and its affects have been tremendous. Unfortunately, even the most well-intentioned law will have loopholes, and rural transportation is one example. A paucity of research exists on transportation barriers in rural communities, but, as a result, opportunities for studying the intricacies abound. Rural living offers many benefits, but available transportation options are not one of them. If communities are willing to devote time and money to improving transportation options for residents, more people may consider relocating to rural areas positively affecting the tax base. Ultimately, transportation needs to be available to all individuals with disabilities regardless of where they live. Quality of life, participation, and general well-being are contingent upon it.

Case Study

Jim is a 42-year-old male who had a car accident 4 years ago resulting in a traumatic brain injury (TBI) and leaving him without the use of his legs. He uses a manual wheelchair and is quite proficient at getting around. He recently moved from the city to a rural community in the northeast because he inherited the home of his recently deceased mother. He doesn't own a car but has become accustomed to riding the bus to work and other locations around town. Prior to moving, he learned that there was a bus stop about 100 yards from his new home. He knew he could easily wheel himself that far, so he had no concerns about his transportation needs.

The day after he moved in he was preparing to head to the bus stop to go to work. He left his home and quickly realized that there were no sidewalks on his narrow road. He tried wheeling on the shoulder, but the gravel made it quite challenging. Although he eventually made it to the bus stop, once there, he saw that there were no curb cuts to allow him to get up to the landing pad. He was able to climb the curb in his wheelchair to wait for the bus. Upon the buses arrival, he waited for the life to be lowered, but he was told that it was nonfunctional. Two patrons exited to help Jim get into the bus. While lifting his chair, Jim's weight shifted and he hit his head on the railing of the bus, which resulted in a gash in his head.

1. Considering that Jim lives in the northeast, what are some additional barriers he is likely to encounter?
2. Although helping Jim board the bus was a kind act, what are the ramifications of this decision?
3. Does Jim have any other transportation options? Why or why not?

Resources

Consortium for Citizens with Disabilities Task Force: www.c-c-d.org/rubriques.php?rub=taskforce.php&id_task=15
Community Transportation Association: www.ctaa.org
Disability Gov's Guide to Transportation: www.disability.gov/resource/disability-govs-guide-transportation/
Federal Transit Administration: www.fta.dot.gov
National Rural Transit Assistance Program: www.nationalrtap.org
Project Action: www.projectaction.org
United We Ride: www.fta.dot.gov/CCAM/www/index.html
The American Public Transportation Association (APTA): www.apta.com
Transportation for America: www.t4america.org
U.S. Department of Transportation: www.dot.gov/accessibility

Learning Exercises

1. List and describe the three types of rural communities?
2. Discuss the differences between availability and accessibility.
3. Describe five (5) barriers to accessible transportation related to infrastructure.
4. Discuss some of the major challenges to the availability of rural transportation in rural communities.
5. Discuss the positive and negative issues relating to paratransit.

Field-Based Experiential Assignments

Multiple Choice Questions

1. What percentage of federal funding is allocated to rural communities?
   (a) 10%
   (b) 6%
   (c) 2%
   (d) 15%
2. Compared to those without disabilities, adults with disabilities are _____ times more likely to have inadequate transportation.
   (a) Five
   (b) Ten
   (c) Two
   (d) Eight
3. In the USA, what percentage of rural residents has no public transportation options?
   (a) 40%
   (b) 32%
   (c) 28%
   (d) 50%
4. Which of the following is **NOT** considered a benefit of public transportation?
   (a) Lower household expenses due to the freeing up of income for other uses
   (b) Allows communities to keep taxes low for all residents
   (c) Improved economic efficiency by providing access to employment
   (d) Improved mobility of residents
5. What was the first piece of legislation mandating federal assistance for transportation for people with disabilities?
   (a) Urban Mass Transportation Assistance Act
   (b) Social Security Act
   (c) Rehabilitation Act
   (d) Americans with Disabilities Act
6. Which title of the ADA mandates that private transportation systems must comply with accessibility requirements?
   (a) Title I
   (b) Title II
   (c) Title III
   (d) Title IV
7. Which piece of legislation resulted in increased funding of transportation in non-metropolitan areas, increased local decision-making, and improved collaboration with the private sector?
   (a) SAFETEA-LU
   (b) MAP-21
   (c) FAST
   (d) ISTEA
8. Which of the following programs is a formula grant for rural areas to provide capital,

planning, and operating assistance to support rural transportation with a population less than 50,000?
(a) 5310
(b) 5311
(c) 5316
(d) 5317

9. Which program was designed to address the unique transportation needs of rural communities relating to employment?
(a) MAP-21
(b) JARC
(c) New Freedom Initiative Transportation Program
(d) ACTION

10. A typical bus is an example of which one of the following models of transportation?
(a) Fixed-route
(b) Demand-responsive
(c) Point-of-Service
(d) Deviated Fixed-route

Key

1 – B
2 – C
3 – A
4 – B
5 – B
6 – B
7 – D
8 – B
9 – B
10 – A

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