ADED

The Association for Driver Rehabilitation Specialists

Best Practice Guidelines for the Delivery of Driver Rehabilitation Services

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Introduction

The Association for Driver Rehabilitation Specialists (ADED), previously known as the Association of Driver Educators for the Disabled, was established in 1977. ADED is a non-profit organization established to support professionals working in the field of driver rehabilitation. Driver rehabilitation consists of evaluation, training, and vehicle modification recommendations for drivers and passengers with disabilities and age-related impairments as well as counseling and support in the pursuit of maintaining mobility within the community.

Increasingly recognized as the primary international resource for drivers and passengers with functional impairment, ADED established the *Best Practice Guidelines* to ensure the delivery of professional and comprehensive driver rehabilitation services.

These *Best Practice Guidelines* are intended to support ADED's mission to promote excellence in the field of driver rehabilitation, thought leadership, and advocacy in support of safe, independent community mobility. In writing the *ADED Best Practice Guidelines*, the authors had full knowledge that this document does not stand alone: it is to be used in conjunction with the ADED Code of Ethics. Together, these documents form a firm foundation for the driver rehabilitation profession. It is ADED's position that any person involved in the delivery of driver rehabilitation services (including but not limited to driver rehabilitation specialists (DRS), driver educators, allied health professionals, mobility equipment vendors, manufacturers, clients, and families) will conduct themselves in an ethical and professional manner. In order to promote the best outcome for clients, prudent clinical judgment should be used at all times, including consideration of applicable laws and other guidelines or resources that may exist regarding the delivery of driver rehabilitation services.

The review and periodic revision of this document falls within the purview of ADED's Professional Development Committee. Given the continued development and progress within the field of driver rehabilitation, the *Best Practice Guidelines* will be subject to periodic updates and revisions to reflect such changes. To that end, we welcome any comments or suggestions.

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Suggested Reference:

Best Practice Guidelines for the Delivery of Driver Rehabilitation Services (2016), Association for Driver Rehabilitation Specialists (ADED): http://www.aded.net

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Original Document by the ADED Best Practice Committee, July 2004.
Revisions by the Professional Development Committee, 2009 and 2016.

Section 1

CLIENT INTAKE

Subject description

In order to create realistic goals and timelines for the client's driver rehabilitation needs, it is essential to obtain a clear picture of both his/her medical history and current functional status and limitations.

Function	*Critical Performance Management*
1.1 **Determine the client's medical history.**	**1.1.1** Request and review all available past medical records (including physician's reports, therapy records, and any other medical reports). **1.1.2** When scheduling the appointment, encourage the client to bring his/her significant other to the appointment to help provide additional details regarding the client's medical and driving history. **1.1.3** Interview the client—and, if available, his/her significant other—about past medical conditions and other chronic conditions that may impact driving performance (e.g., diabetes) or influence the choice of vehicle adaptations (for the passenger and/or the driver).
1.2 **Determine the client's current medical status.**	**1.2.1** Request and review all available current medical records (including physician's reports, therapy records, relevant consultant reports or records, and any other medical reports). **1.2.2** Interview the client—and, if available, his/her significant other—to determine what recent medical events or changes in medical or functional status may have prompted the referral for driver rehabilitation services. **1.2.3** Be knowledgeable about state/provincial licensing laws regarding medical conditions (e.g., seizures).

Function	Critical Performance Management
1.3 **Assess the client's communication needs.**	**1.3.1** Determine the client's need for use of adaptive equipment (e.g., communication board, hearing aids, glasses) when discussing healthcare information. **1.3.2** Be knowledgeable about facility, state, federal, or provincial law regarding interpreter services and how they may be provided. **1.3.3** Review all available medical records related to the client's communication status (e.g., speech therapy notes). **1.3.4** Interview the client—and, if available, the significant other—to determine any recent changes in the client's communication status, including hearing status, speech and language disorders (e.g., expressive and receptive aphasia), as well as any strategies currently being used to compensate.
1.4 **Obtain all required consents.**	**1.4.1** Obtain both a referral and a medical consent from a treating physician to confirm the client's diagnosis and to indicate that the individual is medically cleared to participate in driver rehabilitation services. **1.4.2** Ensure that the client has signed a notice of privacy practices regarding the disclosure of protected health information (PHI) as required by the U.S. Health Insurance Portability and Accountability Act (HIPAA) or other governing applicable laws. **1.4.3** Review and obtain consent for driver rehabilitation services. **1.4.4** When required by the practitioner's state or provincial licensing body, review and obtain signed contracts for driver rehabilitation services. **1.4.5** Obtain the necessary release of records. (Refer to section 9.2.3.)
1.5 **Determine the client's current medications.**	**1.5.1** Review the current medication list with the client and, if available, the significant other. **1.5.2** Interview the client and/or SO to determine any recent medication additions or changes. **1.5.3** Be knowledgeable about the potential impact that the client's medication(s) may have on driving. Obtain additional information, if necessary. **1.5.4** Interview the client to determine the effects that his/her medication(s) have had on his or her driving ability.

Function	Critical Performance Management
1.6 **Assess the client's driving history.**	**1.6.1** Interview the client—and, if available, the significant other—to determine his/her driving history (e.g., recent motor vehicle accidents, tickets, incidents of getting lost, or formal medical review by state or provincial licensing authority). **1.6.2** Interview the client—and, if available, the significant other—about the client's age when initially licensed, any interruption in driving privileges, frequency of daily driving, and number of miles/kilometers driven per week. **1.6.3** For new drivers: Interview the client—and, if available, the significant other—about previous experience with driver training/practice.
1.7 **Assess the client's license status.**	**1.7.1** Confirm the client's license status prior to the appointment, if necessary, based on information provided at the time of referral and as per the protocol of the client's state or provincial motor vehicle administration. Require the client to bring a current valid driving license, permit, or any communication from the state or province's motor vehicle administration to their appointment. View and copy the client's driving license, permit, and/or other pertinent information for the client's file. **1.7.2** Confirm the validity and details of the client's license. **1.7.3** Note any restrictions that have been placed on the license. **1.7.4** Note the date that the license expires.
1.8 **Determine the client's driving goals.**	**1.8.1** Interview the client to establish his/her driving goals.
1.9 **Determine the client's vehicle availability.**	**1.9.1** Interview the client to determine what vehicle(s) is/are available for use.

Function	Critical Performance Management
1.10 **Determine the client's function for daily living tasks**	**1.10.1** Interview the client—and, if available, the significant other—to determine the client's living situation (i.e., alone vs. family, single-family home vs. apartment or assisted living facility) and determine if there are other drivers in the household. **1.10.2** Interview the client—and, if available, the significant other—to determine the client's level of independence with basic activities of daily living (ADLs) such as self-care, bathing, and dressing. **1.10.3** Interview the client—and, if available, the significant other—to determine the client's level of independence with instrumental activities of daily living (IADLs) such as meal planning and prep, bill paying, and medication management. **1.10.4** Interview the client—and, if available, the significant other—to determine the client's level of education, work status, work history, and leisure activities.

Section 2

CLINICAL VISUAL SCREEN

Subject description

Analyzing the driving environment is highly dependent not only on visual acuity but many other visual skills. There is a high prevalence of visual dysfunction in many of the populations the driver rehabilitation specialist (DRS) serves. Screening of the client's visual skills is necessary to identify potential visual dysfunction that may affect safe driving skills. When indicated, the DRS should refer to the appropriate eye care specialist to further evaluate and remediate visual impairments.

Function	*Critical Performance Management*
2.1 **Determine the client's visual history.**	**2.1.1** Assess the client's visual history from interview and medical records; include medication history (as many medications affect vision) as well as any previous surgeries (e.g., corrective surgery due to strabismus, cataract removal). **2.1.2** Determine the client's use of corrective lenses. **2.1.3** Obtain recent visual evaluations as needed. **2.1.4** Assess the need for further visual evaluation before continuing the evaluation process.
2.2 **Determine the client's visual acuity.**	**2.2.1** Screen for visual acuity using appropriate assessment tools (or obtain information from a vision specialist). **2.2.2** As appropriate for the patient population, the client may be screened for contrast sensitivity, glare recovery, night vision, and color discrimination. **2.2.3** Know state/provincial guidelines for visual acuity. Advise the client when he/she does not meet requirements and refer the client to an eye care specialist. Inform the client that no further on-road services may be provided until the proper documentation of meeting or exceeding minimum visual requirements for state or provincial licensure is received from his/her eye care specialist.

Function	Critical Performance Management
2.3 **Assess the client's functional field of vision (FOV).**	**2.3.1** Screen bilateral visual fields using appropriate assessment tools in order to determine possible functional field loss. **2.3.2** Determine if the client meets the minimum visual field requirement for licensure in the state/province in which he/she is licensed. **2.3.3** Educate the client regarding functional field loss and how it may affect driving behavior.
2.4 **Screen for oculomotor abilities and other visual skills.**	**2.4.1** Screen for the client's ability to fixate on an object using appropriate assessment tools. **2.4.2** Screen for pursuits (client's ability to smoothly follow objects in space, maintaining fixation in all directions while the head is held steady). **2.4.3** Screen for saccades (the client's ability to quickly and accurately shift focus between two targets while the head is held steady). **2.4.4** Screen for convergence (client's ability to move his/her eyes together toward the nose). **2.4.5** Screen for stereopsis (depth perception) using clinical testing methods. **2.4.6** Screen for and observe signs of visual dysfunction during clinical testing (e.g., head tilt, squinting, closing one eye, tearing, eye fatigue, etc.). **2.4.7** Be knowledgeable about where to refer individuals with visual dysfunction to determine whether the deficit is remediable.

Section 3

CLINICAL PHYSICAL ASSESSMENT

Subject description

The driver rehabilitation specialist (DRS) must screen for physical dysfunction in order to ensure that a client has the mobility, range of motion, coordination, strength, and sensation needed to safely operate a motor vehicle as well as enter/exit the vehicle and stow, secure, and retrieve any mobility aids. Should dysfunction be determined, the DRS should refer the client to the appropriate specialist for further evaluation and possible remediation of the dysfunction. If remediation is not possible, the DRS should educate the client regarding potential compensatory techniques and/or vehicle modifications that, with appropriate training, may improve the client's ability to operate a motor vehicle safely.

Function	*Critical Performance Management*
3.1 **Determine if the client's range of motion (ROM) is sufficient to operate the vehicle's controls.**	**3.1.1** Determine if the client's upper- and lower-extremity ROM is sufficient to operate the original equipment of the manufacturer (OEM), including steering, gas/brake, and secondary control functions. **3.1.2** If pertinent, determine if the client's upper- and lower-extremity ROM is sufficient to operate adaptive driving equipment. **3.1.3** Determine if the client's cervical and thoracic ROM is sufficient for the client to perform necessary driving maneuvers (e.g., traffic checks). **3.1.4** Evaluate for pain in back, neck, upper extremities, or lower extremities during ROM and assess its effect on the client's ability to operate the vehicle's controls.
3.2 **Determine if the client's strength is sufficient to operate the vehicle's controls.**	**3.2.1** Perform a functional strength assessment, as necessary, to determine the client's ability to operate OEM steering, gas/brake, and secondary control functions. **3.2.2** Perform a functional strength assessment, as necessary, to determine the client's ability to operate adaptive driving equipment. **3.2.3** Perform a functional trunk strength assessment, as necessary, for the driver to maintain an upright and stable posture while driving.

Function	Critical Performance Management
3.3 **Determine if the client's hand strength is sufficient to operate the vehicle's controls.**	**3.3.1** Assess hand strength, as necessary, for the client's ability to operate OEM steering, seat belt, and secondary control functions. **3.3.2** Assess hand strength, as necessary, for the client's ability to operate adaptive driving equipment.
3.4 **Determine if the client's sensation is sufficient to operate the vehicle's controls.**	**3.4.1** Perform a sensory assessment, as necessary, to determine the client's ability to operate OEM steering, gas/brake, seat belt, and secondary control functions. **3.4.2** Perform a sensory assessment, as necessary, to determine the client's ability to operate adaptive driving equipment.
3.5 **Determine if the client's proprioception is sufficient to operate the vehicle's controls.**	**3.5.1** Assess proprioception, as necessary, to determine the client's ability to operate OEM steering, gas/brake, seat belt, and secondary control functions. **3.5.2** Assess proprioception, as necessary, to determine the client's ability to operate adaptive driving equipment.
3.6 **Determine if the client's coordination is sufficient to operate the vehicle's controls.**	**3.6.1** Assess coordination, as necessary, to determine the client's ability to operate OEM steering, gas/brake, seat belt, and secondary control functions. **3.6.2** Assess coordination, as necessary, to determine the client's ability to operate adaptive driving equipment.
3.7 **Assess the client's muscle tone as it relates to the operation of the vehicle's controls and determine the presence of abnormal reflexes.**	**3.7.1** Assess muscle tone, as necessary, to determine the client's ability to operate OEM steering, gas/brake, seat belt, and secondary control functions. **3.7.2** Assess muscle tone, as necessary, to determine the client's ability to operate adaptive driving equipment. **3.7.3** Interview the client to determine whether changes in muscle tone have occurred that were not observed during the evaluation.

Function	Critical Performance Management
3.8 **Determine the client's mobility status.**	**3.8.1** Via interview and observation, determine the client's primary means of mobility and/or use of mobility aids (e.g., walker, wheelchair, scooter). Observe the client using a primary mobility aid and assess the level of independence with the use of the mobility aid. **3.8.2** Interview the client—and, if available, the significant other—to determine whether there have been any recent changes (improvements or decline) in mobility status (e.g., fall history). **3.8.3** Inquire about the age of the mobility device and plans for different mobility aids or new devices (manual chair, power chair, or scooter) in the future. **3.8.4** Refer the client to the appropriate specialist, as needed, to address mobility concerns.
3.9 **Assess the client's static and dynamic balance.**	**3.9.1** Assess the client's balance while he/she is sitting, standing, and walking (in the clinic and in the vehicle).
3.10 **Determine the client's use of orthotic or prosthetic devices.**	**3.10.1** Review the client's current orthotic devices (e.g., splints, ankle-foot orthoses, back braces, etc.) or prosthesis. **3.10.2** Interview the client to determine whether any changes to current orthotic devices are planned or if additional orthotic devices are planned for the future. **3.10.3** If permitted by state/provincial legislation, assess the pertinence of driving with the prosthesis.
3.11 **Determine the client's transfer skills.**	**3.11.1** Interview the client—and, if available, the significant other—to determine his/her current skills regarding transferring into and out of a vehicle, with or without adaptive equipment. **3.11.2** Assess the client' s ability to load his/her mobility aid (as necessary). **3.11.3** Assess the client's ability to transfer into and out of the assessment vehicle. **3.11.4** Assess the client's ability to transfer into and out of his/her personal vehicle, if available.

Function	Critical Performance Management
3.12 **Determine if the client's reaction time is sufficient to operate the vehicle's controls.**	**3.12.1** Assess the client's reaction time as it relates to operating OEM gas/brakes. **3.12.2** Assess the client's reaction time as it relates to operating adaptive driving equipment. **3.12.3** When pertinent, identify the potential cause of the client's slowed reaction time (e.g., difficulty paying attention to testing stimuli, abnormal motor movement patterns, decreased strength or ROM, impaired coordination, decreased visual processing speeds). **3.12.4** Determine if the client's emergency-braking response should be evaluated during the behind-the-wheel assessment.
3.13 **Educate the client regarding his/her performance on physical assessments and the impact on driving safety or mobility issues.**	**3.13.1** Refer to an appropriate specialist for evaluation and possible intervention when the client's physical dysfunction may need to be remediated. Referrals may include—but are not limited to—physical therapy, occupational therapy, or a physician. **3.13.2** Educate the client about vehicle modifications available to him/her if physical dysfunction is not able to be remediated and will impact driving safety. Include the training process involved in learning to use such modifications in order to safely operate a motor vehicle. Discuss any applicable state or provincial licensure requirements for modifying a motor vehicle. **3.13.3** Be knowledgeable about other programs for referral if the current driver evaluation program cannot meet the vehicle modification and driver training needs identified for the client. **3.13.4** Counsel the client—and, if available, the significant other—about driving cessation, as appropriate, if a permanent physical dysfunction is present that precludes safe operation of a motor vehicle with or without vehicle modifications. **3.13.5** Make the appropriate referral to the pertinent community resources to assist with the transition to non-driver status (e.g., alternative transportation options, social worker).

Section 4

CLINICAL COGNITIVE/PERCEPTUAL SCREENING

Subject description

Evidence-based assessment tools and client interview, along with other resources, are used to determine the presence of cognitive or perceptual difficulties that may impair safe driving, and these resources are used to determine the appropriate strategies to compensate for functional impairments.

Function	*Critical Performance Management*
4.1 **Determine the client's past and current medical history and diagnoses that may underlie or contribute to cognitive impairment (recognize and screen for co-morbidities).**	**4.1.1** Review all available past and current medical records to determine cognitive impairment (including physicians' reports, therapy records, relevant consultant reports or records, and any other medical reports). **4.1.2** Recognize and review the relationship of cognition to the diagnosis or medical condition (e.g., multiple sclerosis and decreased processing speeds, dementia and memory/executive dysfunction, depression and memory impairment). **4.1.3** Review the client's medications; ascertain whether any of these medications may consistently or inconsistently impact cognition.
4.2 **Screen for the presence and level of cognitive impairment.**	**4.2.1** Use clinical judgment to administer a battery of assessments appropriate for the individual client. **4.2.2** Use clinical judgment to observe the client's cognitive domains during clinical performance (e.g., orientation, memory, attention, executive function, information processing speed). **4.2.3** Assess client's general driver knowledge (e.g., ability to identify common road signs, ability to verbalize general rules of the road).

Function	Critical Performance Management
4.3 **Determine the client's level of self-awareness.**	**4.3.1** Interview the client—and, if available, the significant other—to determine willingness to employ (or explore) compensatory techniques for driving. Use clinical judgment to determine the client's insight and learning capacity to make the necessary changes in driving behaviors despite cognitive dysfunction. Assess the client's response to feedback and indications of his/her self-awareness of deficits during the on-road assessment. **4.3.2** Whenever possible, gather information from the client's significant other in determining if the client can provide factual information. Look for discrepancies between function as related by the client and significant other or other medical documentation.
4.4 **Determine the appropriate intervention to address the client's needs related to cognitive impairment (in the context of driving).**	**4.4.1** Understand the implication of cognitive impairment on the potential for learning (strategies and/or equipment compensations), remediation, and training. **4.4.2** Be knowledgeable about resources for referral (e.g., treatment or remediation of deficits).
4.5 **Determine the need and frequency of reassessment of the client for progressive conditions (such as dementia).**	**4.5.1** Understand the rationale that describes the protocols and recommended schedule for periodic reassessment of the client's progressive conditions (such as dementia). **4.5.2** Recommend a re-evaluation in formal documentation to the client and referral source. The client and significant other should be educated to return for additional evaluation following any functional decline, after any acute medical episode, or upon the addition of any medical conditions that could exacerbate cognitive decline/changes.
4.6 **Determine the presence and level of visual perceptual impairment in the client.**	**4.6.1** Use clinical judgment to include the optimal assessments that are indicated for the individual client. **4.6.2** Use clinical judgment to observe the client's visual perceptual skills during clinical performance (e.g., inattention, neglect).

Function	Critical Performance Management
4.7 **Determine, based on the severity of cognitive and/or perceptual deficit in the client, whether or not on-road assessment or continued driver rehabilitation services are indicated.**	**4.7.1** Use clinical judgment to determine whether an on-road assessment is indicated. **4.7.2** If on-road assessment is not performed and driving cessation is recommended following the clinical assessment, the client and significant other should be informed of the results of the clinical assessments, and they should be educated regarding specific deficits observed and their relation to driving safety and/or crash risk. **4.7.3** Apply *ADED Best Practice Guidelines*, section 5, subsections 5.15.7 through 5.15.9.

Section 5

BEHIND-THE-WHEEL EVALUATION

Subject description

Clinical assessments are important to help determine a client's strengths and weaknesses; however, an on-road driving assessment is crucial to understanding the impact of identified impairments on a client's actual driving behaviors and driving potential.

Note: Do not provide on-road services to a client who is not in possession of a valid license or permit.

Function	Critical Performance Management
5.1 **Assess the appropriateness of the evaluation vehicle and/or equipment to meet the client's evaluation needs.**	**5.1.1** Understand the impact of the client's physical limitations on his/her driving performance. **5.1.2** Assess the vehicle/equipment's appropriateness to meet the client's evaluation needs. **5.1.3** Make an appropriate referral when the client's needs cannot be met using available vehicles(s).
5.2 **Assess the client's ability to enter and exit the driver's station with or without adaptive equipment.**	**5.2.1** Observe the client's ability to safely and efficiently enter and exit the driver's station with or without adaptive equipment. **5.2.2** If adaptive equipment is needed, apply *ADED Best Practice Guidelines*, section 7, subsection 7.4.
5.3 **Assess the client's ability to stow, secure, and retrieve any existing mobility aids with or without the use of adaptive equipment.**	**5.3.1** Observe the client's ability to safely and efficiently manage any existing mobility aids with or without the use of adaptive equipment. **5.3.2** If such equipment is needed, apply *ADED Best Practice Guidelines*, section 3, subsection 3.11.

Function	Critical Performance Management
5.4 **Assess the client's ability to obtain and maintain an appropriate driving position with or without adaptive equipment.**	**5.4.1** Determine if the client has the cognitive and physical skills required to position himself/herself independently and properly in the vehicle (e.g., adjustment of seat, steering wheel, mirrors, and seat belt). **5.4.2** Determine if the client has adequate visual ellipse (i.e., eye-level should be as close to the inferior border of the rearview mirror as possible). **5.4.3** If adaptive equipment is needed, apply *ADED Best Practice Guidelines*, section 7, subsection 7.5. **5.4.4** Observe the client's ability to maintain a proper and safe driving position over time and under varied road and speed conditions.
5.5 **Assess the client's ability to satisfactorily operate primary original equipment manufacturer (OEM) controls with or without adaptive equipment.**	**5.5.1** Observe the client's ability to operate OEM gas, brake, and steering controls. Simulate an emergency braking situation, if pertinent. **5.5.2** Assess the client's visual, physical, and cognitive abilities to operate OEM controls, modifications to OEM primary or secondary controls, and/or adaptive driving equipment. **5.5.3** If adaptive equipment is needed, see *ADED Best Practice Guidelines*, section 7, subsection 7.6.
5.6 **Assess the client's ability to operate secondary OEM controls with or without equipment. Assess when the vehicle is stationary and while it is in motion.**	**5.6.1** Assess the client's visual, physical, and cognitive ability to operate the OEM rapid-access secondary controls (signals, wipers, cruise control mechanism, horn, lights, and dimmer) while the vehicle is stationary and while it is in motion. **5.6.2** Assess the client's visual, physical, and cognitive ability to operate the OEM non-rapid-access secondary controls (ignition, gear shift control, window controls, mirror controls, seat-positioning controls, climate controls, seat belt, radio, and parking brake) while the vehicle is stationary and while it is in motion. **5.6.3** If adaptive equipment is needed, see *ADED Best Practice Guidelines*, section 7, subsection 7.7.

Function	Critical Performance Management
5.7 **Assess the client's driving performance in progressively complex traffic/ roadway conditions and weather conditions similar to those he/she would normally encounter.**	**5.7.1** Assess the client's driving performance in a variety of appropriate conditions that may include, but are not limited to, parking lots; minimal-to-heavy traffic; commercial, residential, rural, freeway, and highway traffic; etc. **5.7.2** Take into account the client's driving goals when determining which conditions should be included when conducting the evaluation. **5.7.3** Make recommendations regarding night driving or weather conditions based on clinical findings, road performance during normal daylight hours, OR by actual observation of the client's skills in a variety of weather and lighting conditions. **5.7.4** Recognize that some clients (e.g., low-vision) may benefit from driving in various lighting conditions to ascertain possible limitations. Include various lighting conditions in evaluations or during training.
5.8 **Determine an appropriate graduated process for the client's evaluation.**	**5.8.1** Determine if the client's on-road evaluation should originate in a parking lot or a low traffic environment. **5.8.2** Assess the client's driving performance using a graduated process to determine the client's level of independence and fitness to drive. **5.8.3** Recognize the need to further assess the client in complex or challenging driving situations. **5.8.4** Stop the evaluation if the client demonstrates behaviors that compromise safety.

Function	Critical Performance Management
5.9 **Assess the impact of cognitive/perceptual, behavioral, and visual limitations on safely performing all driving tasks in the conditions encountered.**	**5.9.1** Observe the impact of the client's limitations on his/her ability to perform appropriate lane placement, turns, pedestrian management, yielding skills, and speed control; to interpret signs, signals, and road markings; to be aware of his/her environment; to manage time and allocate space; to identify and appropriately respond to actual or potential hazards; to understand and use the road system; to interact with other road users. **5.9.2** The driving evaluation route may include both directed navigation and self-directed navigation, which requires executive cognitive skills such as planning and searching for an unfamiliar street or landmark. This may also include navigating highways by reading and responding to highway directional signs and information. **5.9.3** When specific medical conditions indicate, assess the client's ability to find his/her way and be appropriately oriented in a variety of driving landscapes. **5.9.4** Consider the client's level of anxiety and/or confidence and how it impacts his/her skills.
5.10 **Assess the safe use of any necessary adaptive driving equipment.**	**5.10.1** Introduce adaptive driving equipment to the client in a low-risk, limited-access area (e.g., a large parking lot). **5.10.2** Assess the presence or absence in the client of common errors associated with first-time users of the equipment. **5.10.3** Assess the potential for the presence of these errors beyond the evaluation conditions. **5.10.4** Assess the impact of cognitive limitations on the client's ability to learn and consistently use the equipment.

Function	Critical Performance Management
5.11 **Assess the potential for improved safety with the use of equipment and/ or compensatory strategies for physical, visual, cognitive/perceptual, and/or behavioral impairments affecting the client's driving performance.**	**5.11.1** Determine the degree of cognitive and/or behavioral limitations that may impact the client's learning process. **5.11.2** Assess whether the client's driving goals are realistic, given identified or observed functional limitations and deficits (e.g., driving distance and fatigue, city streets and boulevards vs. multi-lane high-speed roadways). **5.11.3** Begin training the client in either a limited-access area or residential streets. **5.11.4** Assess the client's ability to recall and consistently use compensatory strategies beyond the training period. **5.11.5** Assess the potential for continued decline in the client's cognitive/ perceptual, visual, physical, and/or behavioral functioning.
5.12 **Assess the impact or potential for impact of fatigue factors on the client's driving performance and stated driving goals.**	**5.12.1** Understand potential fatigue factors such as those related to disabling conditions, medications, lifestyle, time of day, etc. **5.12.2** Assess the presence or absence of fatigue and its impact on the client's driving performance, the reactions to the types of conditions encountered, etc. **5.12.3** Assess fatigue factors as they may relate to the client's specific driving goals.
5.13 **Assess the appropriateness of the client's current vehicle and determine if there is a need for a vehicle change, per *ADED Best Practice Guidelines*, section 7.**	**5.13.1** Apply *ADED Best Practice Guidelines*, section 7, subsection 7.12.
5.14 **Assess the appropriate equipment needs for the client, per *ADED Best Practice Guidelines*, section 7.**	**5.14.1** Apply *ADED Best Practice Guidelines*, section 7, subsections 7.6–7.12.

Function	Critical Performance Management
5.15 **Determine the outcome and options and review them with the client—and, if available, the significant other.**	**5.15.1** Determine the client's current fitness to drive and recommend one of the following: continued licensure, driver training, or driving cessation. **5.15.2** Identify further interventions that may be needed by other professionals to address any deficit areas, and discuss the potential for a future reassessment of the client. Provide any appropriate resources. **5.15.3** Identify whether reassessment is periodically needed because of the progressive nature of the condition, and educate the client—and, if available, the significant other—about this. **5.15.4** Assess the client's and the significant other's level of understanding of and compliance with the reviewed recommendations. **5.15.5** Where indicated, provide the results to the referring physician for further consultation regarding potential actions. **5.15.6** Follow any mandatory reporting procedures required by the licensing authority in the state or province in which the client is licensed. **5.15.7** Document any driving cessation counseling, if needed, and determine whether the client and significant other verbalize an understanding of this recommendation. **5.15.8** Be knowledgeable about psychosocial services (for counseling regarding the loss of a driving role) as needed. **5.15.9** Be knowledgeable about alternative transportation options and provide those resources as needed.

Section 6

BEHIND-THE-WHEEL TRAINING/ INTERVENTION

Subject description

The determination of client-centered driving goals with a focused intervention plan after the behind-the-wheel evaluation is critical in ensuring that the client understands and is engaged in the process. Flexibility in the plan is also an inherent factor that will ensure reduced frustration by the professional and the client as he/she works toward independent mobility. When a client is not demonstrating progress, the DRS should refer to a specialist for intervention when appropriate (e.g., neuro-optometrist, physical therapist, occupational therapist, etc.) or guide the client toward alternative modes of transportation for community mobility.

Function	*Critical Performance Management*
6.1 **Set goals based on the client's functional abilities.**	**6.1.1** Set goals based on the client's functional abilities and driving experience (i.e., novice vs. experienced driver). **6.1.2** Establish a timeline for meeting goals. **6.1.3** Establish a system for measuring progress.
6.2 **Provide training that supports safe driving performance and the client's specific driving goals.**	**6.2.1** Determine appropriate modalities for driver training (e.g., simulator training, commentary driving techniques, behind the wheel training). **6.2.2** Train the client regarding the use of adaptive equipment when indicated, and in other driving skills including, but not limited to, pre-driving habits, lane positioning, secondary control use, signs, lane markings, following distance, mirror use, lane changes, highways, merging, turns, shopping centers, parking, and backing up. **6.2.3** Observe and document the client's skills and progress in the above areas.

Function	Critical Performance Management
6.3 **Provide training in a variety of conditions and environments (consistent with the client's specific driving goals).**	**6.3.1** Begin training the client in a controlled environment, as necessary. **6.3.2** Establish a plan to deliver as much change in the conditions and environments as possible as the client progresses. **6.3.3** Observe and document the progression of skills, consistent with the client's specific driving goals.
6.4 **Adjust the client's goals as needed.**	**6.4.1** Reassess the client's performance on an on-going basis to determine, with the client's input, whether goals need to be adjusted. **6.4.2** Consider client-related factors that may impact progress and goals, including, but not limited to, fatigue, time of day, and time between sessions. Anticipate some progress with each ride. Three to four rides without progress toward the stated goals may require a change in intervention or equipment, referral to a specialist, or counseling on driving cessation.

Section 7

VEHICLE AND EQUIPMENT ASSESSMENT FOR DRIVERS

Subject description

The clinical assessment, stationary behind-the-wheel evaluation, and on-road functional trials will enable the determination of the adaptive driving equipment best suited to the client's functional abilities. The client's mobility aid(s) and ability to transfer are key factors in determining whether the vehicle is appropriate. If a vehicle change is indicated, the DRS will provide guidance regarding appropriate alternate vehicle options.

Function	*Critical Performance Management*
7.1 **Determine the funding source for any driver evaluation, training, and adaptive equipment that the client needs.**	**7.1.1** Determine the client's ability to cover the costs of driver evaluation and driver training, to purchase an appropriate vehicle (if required), and to absorb the inherent costs in vehicle ownership. **7.1.2** Inform the client of funding options (e.g., vocational rehabilitation, loans, and rebate programs, etc.) and the steps involved in the vehicle modification process.
7.2 **Determine whether the client has completed a clinical assessment.**	**7.2.1** Ensure that the client has had a clinical assessment as per the *ADED Best Practice Guidelines*, sections 1–5.

Function	Critical Performance Management
7.3 **Assess the client's ability to enter or exit his/her current vehicle and transport any required mobility aids.**	**7.3.1** Assess the client's ability to transfer a mobility aid into and out of his/her existing vehicle with or without adaptive equipment. **7.3.2** Assess if adaptive equipment (e.g., power transfer board, turning automotive seating) for entering or exiting is required. **7.3.3** Determine whether the client should remain seated in his/her mobility aid to enter or exit the vehicle. **7.3.4** If the client needs to remain in the mobility aid for travel in the vehicle, determine if the mobility aid is safe for use as a vehicle seat during travel, and educate the client—and, if available, the significant other—regarding this. (Refer to section 8.3.) **7.3.5** Determine if structural modification of a vehicle will be required. Pursue with a van/mini-van evaluation (see section 7.5) or refer the client to an appropriate resource. **7.3.6** Determine the viability of the existing vehicle to respond to the client's needs as a driver and/or passenger. **7.3.7** Measure the pertinent dimensions/specifications of the client's mobility aid. Include measurements while the client is seated in the mobility device, if pertinent.
7.4 **Based on industry norms, current knowledge of OEM vehicles, and available structural modifications, determine the most appropriate structural modification configuration and/or ingress options for the client.**	**7.4.1** Assess if a wheelchair lift is required. **7.4.2** Assess if an access ramp is required. **7.4.3** Assess if a high-roof vehicle/compact panel van is indicated. **7.4.4** Assess if a lowered floor is required. **7.4.5** Determine the configuration of lowered floor that will best meet the needs of your client (e.g. rear entry versus lateral entry, half conversion versus full conversion).

Function	Critical Performance Management
7.5 **Determine the client's ability to obtain an appropriate driving position.**	**7.5.1** Assess the client's ability to transfer to a power seat base using the existing OEM seat. **7.5.2** If the client cannot transfer out of his/her wheelchair, assess the client for proper visual ellipse and trunk stability while he/she is seated in his/her mobility device at the driver's position. **7.5.3** Ensure that a caregiver is able to install and de-install the first-row removable seat bases, as required. **7.5.4** Ensure the appropriate fit of an FMVSS/CMVSS-approved three-point shoulder lap belt. Independent use of the seat belt is required for a driver. **7.5.5** Ensure that the client—and, if available, the significant other—understands and can properly secure the mobility aid in accordance with applicable WTORS (Wheelchair Tie-down and Occupant Restraint Systems) norms (WC 18, WC 19, WC 20, or the equivalent). **7.5.6** Assess the client for fully independent operation of the switches for power door, ramp or lift, automatic tie-down, and kneeling suspension.
7.6 **Determine how the client will activate the gas and brake.**	**7.6.1** Assess the client's ability to safely activate the OEM gas and brake pedals. **7.6.2** Assess the client's need for mechanical or electric hand controls; be knowledgeable about options regarding various types of controls. **7.6.3** Assess the need for a reduced-effort brake. **7.6.4** Determine the need for a gas pedal block or full pedal guard. **7.6.5** Assess the client's need for pedal extensions. **7.6.6** Assess the client's need for a left-foot accelerator and a pedal guard for the right accelerator. **7.6.7** Assess the client's need for parking brake modifications, including an extension.

Function	Critical Performance Management
7.7 **Determine the need for adapted or secondary switches and complementary accessory switches.**	**7.7.1** Assess the client's ability to activate rapid-access secondary controls (e.g., turn signals, horn, windshield wiper/fluid, cruise control) while the client is in the driver station, ideally in dynamic driving situations. **7.7.2** Assess the client's ability to activate non-rapid-access controls (e.g., windows, rear defog, gear selector, etc.) while the client is in the driver station. **7.7.3** Assess the client's ability to use the heating, ventilation, and air conditioning system.
7.8 **Determine how the client will steer the vehicle.**	**7.8.1** Assess the client's ability to manipulate the OEM steering wheel. **7.8.2** Determine the need for a steering device if steering manipulation is unilateral. **7.8.3** Assess the client's need for modified-effort steering. **7.8.4** Assess the client's range of motion for steering manipulation. Determine the need for reduced-diameter wheel size, extended steering column, horizontal steering column, and/or a high-tech steering system. **7.8.5** Ensure the recommendation of a backup system any time modified-effort steering is required.
7.9 **Determine the client's key/ignition activation skills.**	**7.9.1** Assess whether the client can use the OEM ignition, and make appropriate recommendations.
7.10 **Ensure the client's ability to obtain aid in an emergency situation.**	**7.10.1** Recommend that the client have access to a cell phone or other communication device(s) in case of an emergency.

Function	Critical Performance Management
7.11 **Ensure the vehicle's compliance with existing standards and guidelines.**	**7.11.1** Compare the recommendations to existing standards and guidelines (e.g., FMVSS/CMVSS, RESNA, and NMEDA guidelines) to ensure that all recommendations are compliant. **7.11.2** Be aware of gross vehicle weight and general weight concerns regarding modified vehicles.
7.12 **Determine replacement vehicle options with the client.**	**7.12.1** Determine (via mobility equipment dealers, exploration of websites, and current available resources) the appropriate vehicle choices for the client based on his/her functional profile, as well as current and future needs. **7.12.2** Present these options to the client for approval. **7.12.3** Assess the client's preference of vehicle. **7.12.4** Validate the client's final vehicle choice with mobility equipment dealers. **7.12.5** Educate the client about the importance of not exceeding the vehicle weight rating (the maximum weight allowed by the manufacturer when a vehicle is fully loaded).
7.13 **Know and utilize resources to obtain adaptive equipment.**	**7.13.1** Be knowledgeable about the products available from local mobility equipment dealers and where to locate equipment for functional trials in order to ensure that the client is served in a timely manner.
7.14 **Provide pertinent information regarding the local mobility equipment dealer(s).**	**7.14.1** Educate the client about National Mobility Equipment Dealers Association's (NMEDA) Quality Assurance Program accreditation and provider resources (i.e., mobility equipment dealers). **7.14.2** Educate the client regarding the mobility equipment dealers best positioned to provide a quote and perform the work required to adapt the vehicle in question.

Function	Critical Performance Management
7.15 **Advise and assist the client in meeting the regulatory requirements of the state/provincial licensing agency for driving with adaptive equipment.**	**7.15.1** Guide the client in the process of completing the requirements of his/her licensing body to update or maintain licensure with regard to driving with adaptive equipment. Provide necessary documentation to the appropriate licensing body to recommend changes regarding the client's need for adaptive driving equipment.
7.16 **Ensure that the significant other and/or any other drivers of the modified vehicle understand the mechanics of the adaptive equipment.**	**7.16.1** Ensure that the significant other and/or other drivers of the vehicle understand, to the extent that it is possible, that they are only to drive the vehicle using the OEM. **7.16.2** Ensure that the significant other and/or other drivers of the vehicle understand and can demonstrate how to remove the adaptive equipment (if appropriate) in order to drive the car with the OEM and then reinstall the adaptive equipment properly. **7.16.3** Educate the client and significant other that, when possible, adaptive equipment should be removed when the vehicle is taken in for service (e.g., oil change), so that the technician can access the OEM.

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Section 8

VEHICLE AND EQUIPMENT ASSESSMENT FOR PASSENGERS

Subject description

When a client is to be a passenger rather than a driver, it is crucial to determine the client's ability to transfer into and out of a vehicle and to evaluate the vehicle's appropriateness for safely transporting the client and any accompanying mobility aids. If a vehicle change is indicated, the DRS will provide guidance regarding an appropriate alternative vehicle choice.

Function	*Critical Performance Management*
8.1 **Determine whether the client (passenger) can safely enter and exit the vehicle.**	**8.1.1** Assess the client's ability to enter and exit the vehicle. **8.1.2** Assess the client for stability, strength, and balance when transferring to the vehicle. Consider all realistic environmental and climatic conditions (e.g., uneven terrain, slopes, snow, ice, etc.). **8.1.3** Determine (via functional trial, when possible) if adaptive equipment exists that will facilitate the transfer (e.g., Handybar™, transfer disc, turning automotive seating, etc.). **8.1.4** Validate the compatibility of the adaptive equipment with the client and the vehicle.
8.2 **Determine the client and/or significant other's ability to safely stow, secure, and retrieve all pertinent mobility aids.**	**8.2.1** Assess the client and/or significant other's ability to manually stow, secure, and retrieve the mobility aid (if appropriate). **8.2.2** Determine the fit between mobility aids and the vehicle's storage area. **8.2.3** Determine the most appropriate adaptive equipment to facilitate the loading and unloading of the mobility device, given its dimensions, weight, and the vehicle specifications. **8.2.4** Inform the client of the loss of seating or storage options within the vehicle. **8.2.5** Ensure that the mobility aid is properly secured within the vehicle.

Function	Critical Performance Management
8.3 **Determine whether the client who uses a wheelchair will remain in that wheelchair during travel.**	**8.3.1** Ensure whether the transfer from a wheelchair to the OEM vehicle seat is an option or not. **8.3.2** Determine if the mobility device is safe for use as a vehicle seat during travel. A WC-19 compliant WC is optimal. If this is not possible, educate the client on evidence-based principles regarding wheelchair transportation safety. (Inform the client that he/she must transfer off a scooter while riding in the vehicle.) **8.3.3** Determine whether a structural modification is required. (Refer to section 7.4 thru 7.6.) **8.3.4** Assess the client's position in the vehicle, including headroom and visual ellipse. The client should be forward-facing. **8.3.5** Ensure that the client, significant other, and other users of the vehicle understand and can properly secure the mobility aid in accordance with applicable WTORS norms. (Refer to section 7.5.5.) **8.3.6** Ensure an appropriate wheelchair tie-down and occupant restraint system (WTORS) for the client. **8.3.7** Ensure that the client has proper head/neck support and/or educate the client about the risks associated with riding as a passenger in a wheelchair without a proper head rest or head support.
8.4 **Assess the vehicle's capability for wheelchair or scooter transport.**	**8.4.1** Counsel the client on mobility device transportation options and make recommendations based on the client's need, vehicle restrictions, and/or the significant other's capabilities. **8.4.2** Validate the compatibility of the vehicle and the adaptive equipment required for the transportation of the client's mobility device. **8.4.3** Be aware of the gross vehicle weight and general weight concerns regarding modified vehicles. **8.4.4** Assess the vehicle's capability for the appropriate securement of mobility devices.

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Section 9

DOCUMENTATION

Subject description

Proper documentation of all provided driver rehabilitation services and the client's performance and response to it is critical to ensure effective communication among all relevant parties involved in the client's care (such as the physician, the significant other, the licensing authority, the mobility equipment dealer, and the third-party payer).

Function	*Critical Performance Management*
9.1 **Maintain written and electronic records of all services provided, while respecting the client's confidentiality.**	**9.1.1** Documentation shall include the following as applicable: client contact information (including emergency contacts), consent/release form(s), contracts as required, evaluations, training records for each session, prescription/equipment recommendation form, federal and state/provincial licensing documentation or reporting forms, all correspondence, billing records, and discharge recommendations.
9.2 **Release the documentation with respect to the client's privacy.**	**9.2.1** Ensure that the client has signed a notice of privacy practices regarding the disclosure of protected health information (PHI), as required by the Health Insurance Portability and Accountability Act (HIPAA) or other governing applicable laws. **9.2.2** Review with the client any additional consent forms or contracts that may be required by the driver rehabilitation program, your facility, the licensing authority, or by federal, state, or provincial regulations and guidelines. **9.2.3** Provide only the pertinent and required documentation to a third-party payer, mobility equipment dealer, or referring physician as needed. *(The release of protected health information (PHI) to any other party—including, but not limited to, the client or a significant other—requires a written release. The DRS should follow his/her employer's established policy and procedure for obtaining a release of medical records and regarding the faxing and email of confidential information).*
9.3 **Follow records retention guidelines.**	**9.3.1** Records shall be retained for time periods that comply with the legal and governmental requirements for the state/province in which the professional practices, the state/provincial licensing body in which the driving program may be licensed, and the employer's established policy and procedures.

Section 10

PRESCRIPTION/EQUIPMENT RECOMMENDATION FORM

Subject description

Once the evaluation process is completed, the DRS should produce a comprehensive report that includes all the pertinent findings from the various assessments and evaluations, as well as an analysis of the client's needs and a brief description of the recommended solution(s). The prescription/recommendation form should then be generated to indicate all the specific vehicle and equipment needs of the client. The DRS's recommendations should be based on the client's demonstrated performance in an actual driving experience with a vehicle and equipment functionally equivalent to that which is being prescribed and as required by state/provincial regulations. The prescription/equipment recommendation form may be provided to the client, a third-party payer, a physician, and a mobility equipment dealer selected by the client when requested by the client or established by local practices.

Function	*Critical Performance Management*
10.1 **Generate a comprehensive report that includes all of the pertinent findings from the various assessments and evaluations.**	**10.1.1** Ensure that the contents of the report lead to the ultimate conclusions contained in the prescription/recommendation form.

Function	Critical Performance Management
10.2 **Base the prescription/ equipment recommendation form contents on the client's actual performance in a vehicle, and with equipment functionally equivalent to that necessary for safe driving performance.**	**10.2.1** Conduct an assessment of the client's needs and skills in an evaluation vehicle, and with equipment functionally equivalent to those required to meet the client's needs, as required by *ADED Best Practice Guidelines*, section 5.
10.3 **Make the prescription/ recommendation form as complete and specific as possible.**	**10.3.1** When available, include the specific vehicle(s) to be used by the client. **10.3.2** Include all of the necessary specific vehicle modifications. **10.3.3** Include all of the necessary primary and secondary control equipment or modifications and document their placement in the vehicle. **10.3.4** Include all of the necessary tertiary control equipment or modifications. **10.3.5** Include all of the necessary mobility-aid loading and securement systems. **10.3.6** Include all of the necessary driver restraint systems, wheelchair tie-downs, and positioning systems. **10.3.7** Include all of the necessary auxiliary equipment. **10.3.8** Indicate the need for the client to undergo additional training with his/ her vehicle and equipment to ensure skill proficiency, as necessary. Recommend the temporary installation of a dual brake system (instructor's brake), as necessary. **10.3.9** Stipulate in the form the number of fittings required, and request that the client and/or mobility equipment dealer contact the DRS to schedule any necessary mid-fittings. **10.3.10** Stipulate in the form that the client and/or the mobility equipment dealer should contact the DRS to inform him/her when the vehicle is ready to be delivered. (Refer to section 11.)

Function	Critical Performance Management
10.4 **Provide copies of the prescription/ recommendation form to the client and other parties as deemed necessary by local, facility, and third-party-payer practices.**	**10.4.1** Provide each of the appropriate parties with a copy of the completed form. **10.4.2** Follow local, facility, and third-party-payer regulations regarding the prescription/recommendation form. **10.4.3** Maintain a copy of the prescription/recommendation form in the client's permanent record, in accordance with state/provincial and facility regulations.

Section 11

FINAL FITTING

Subject description

As stipulated in the prescription/recommendation report, the client and mobility equipment dealer should contact the DRS to inform him/her of the number of fittings needed and the date that the vehicle is ready for delivery. Prior to the client's taking possession of the modified vehicle, a final fitting should be scheduled with the client, DRS, and mobility equipment dealer to ensure the optimal functioning of the vehicle and equipment per the prescription/recommendation form. ADED recognizes the need to balance costs, safety, and the reliance on the qualified mobility equipment dealer. For high-tech and custom equipment, and to ensure that the correct and prescribed equipment is installed and safely usable, final fittings are indicated. Individual programs will develop policies and procedures in conjunction with their own Risk Management and Legal departments to address final fittings.

Function	*Critical Performance Management*
11.1 **Ensure that the recommendations in the prescription/ equipment recommendation form have been followed.**	**11.1.1** Ensure that the specific vehicle modifications have been performed. **11.1.2** Ensure that all prescribed equipment is installed. **11.1.3** Ensure that the placement of equipment is appropriate, per the prescription/ equipment recommendation form. **11.1.4** Note the presence of any variances from the prescription/equipment recommendation form and the reasons for these variances. **11.1.5** Assess the appropriateness of the noted variances.

Function	Critical Performance Management
11.2 **Ensure that the client's functioning is optimal, following any modifications performed and/or equipment installed per the prescription/ equipment recommendation form.**	**11.2.1** Assess the client's ability to enter and exit the vehicle. **11.2.2** Assess the client's ability to load and properly secure mobility aids, if applicable. **11.2.3** Assess the client's ability to assume the appropriate driving position. **11.2.4** Assess the client's ability to safely operate all primary controls, secondary controls, and communication systems, as appropriate. **11.2.5** Assess the client's ability to independently use his/her seat belt (an FMVSS/ CMVSS-approved three-point shoulder and lap belt). Assess the fit of the seat belt. **11.2.6** Provide recommendations for specific adjustments or modifications, as needed. **11.2.7** Assess the appropriate outcome of the adjustments or modifications once they are completed. **11.2.8** As allowed by the facility's policies and risk management department, assess the client's ability to safely operate the vehicle in various appropriate driving environments. **11.2.9** Document the outcomes of the final fitting. **11.2.10** If geographical limitations or facility policies prohibit the final fitting, attempt to locate a local professional who may be able to conduct the final fitting, or follow up with the client via phone or email. **11.2.11** If the client refuses to participate, or has purposely chosen alternate vehicle modification, document the refusal and notify the appropriate third parties as deemed necessary according to state, provincial, facility, or program policies and procedures.
11.3 **Provide follow-up training, as necessary.**	**11.3.1** As allowed by the program's policies or risk management department, pursue additional training with the client and his/her vehicle and equipment to ensure the client's skill proficiency, as necessary. **11.3.2** Ensure that other users of the vehicle understand the mechanics of the adaptive equipment. (Refer to section 7.16.)

Section 12

LICENSING

Subject description

Understanding and being knowledgeable about applicable state/provincial licensing standards is critical to minimizing liability and protecting public safety. The DRS should have a solid understanding of licensure as it applies to his/her facility's program and/or place of business, his/her role as a driving instructor and as an operator of a dual-controlled vehicle, and the evaluation and training of properly licensed clients for on-road services.

Function	*Critical Performance Management*
12.1 **Be knowledgeable about state/ provincial licensure requirements for the establishment of a driving program and the provision of driver training services to the client.**	**12.1.1** Follow the applicable state/provincial requirements for operating a driver training program. Obtain any necessary licenses or clearances, as required. **12.1.2** Follow the applicable state/provincial requirements for providing driving instruction (or driver training services). If required, obtain the necessary license to be certified as a licensed driving instructor (LDI). **12.1.3** Maintain current licensure at all times when providing on-road services to clients.
12.2 **Assist clients in meeting state/ provincial driver licensing requirements relevant to their particular situation.**	**12.2.1** Be knowledgeable about driving licensure requirements for the state/ province in which the client lives (e.g., expiration, renewal, restrictions, reinstatement, permits, disabilities, use of adaptive equipment). **12.2.2** Educate the client about the steps to take in ensuring that the licensing requirements are met. **Do not provide on-road services to a client who is not in possession of a valid license or permit.** **12.2.3** Provide supplemental documentation to the appropriate licensing authority as necessary to assist the client with his/her licensure compliance, with strict adherence to the confidentiality rules regarding protected health information.

Section 13

QUALITY IMPROVEMENT

Subject description

In order to provide the highest quality of care to all clients, it is necessary for a DRS to be aware of best practice guidelines and industry standards. It is recommended that any person working in the field of driver rehabilitation take advantage of ADED's many resources, seek out relevant resources for continuing education, establish relationships with other professionals in the driver rehabilitation and mobility equipment fields, and work toward becoming a Certified Driver Rehabilitation Specialist (CDRS™). Continuous quality improvement is essential to maintaining a successful driver rehabilitation program.

Function	*Critical Performance Management*
13.1 **Consult the document "Spectrum of Driver Services/Spectrum of Driver Rehabilitation Program Services."**	**13.1.1** Review and understand the document. **13.1.2** Determine what types of services should be offered in accordance with the level of knowledge, experience, and credentials of the DRS. **13.1.3** Be familiar with the spectrum of program types and refer to the next level of care when appropriate. **13.1.4** Be knowledgeable about all of the types of driver rehabilitation programs and services within the surrounding geographic regions.
13.2 **Join and maintain membership in ADED.**	**13.2.1** Become familiar with ADED and its many resources (e.g., educational offerings, certification, program development tool kit, mentorship program, etc.). **13.2.2** Use the ADED website and its many resources (e.g., DRS search, online learning library, forum/communication boards, etc.). **13.2.3** Attend ADED's Annual Conference and Exhibits whenever possible to stay current on clinical practices and approaches, resources, adaptive driving equipment, technology, and vehicle modifications.

Function	Critical Performance Management
13.3 **Seek out relevant resources for continuing education.**	**13.3.1** Attend continuing education opportunities that may include, but are not limited to: ADED conferences or courses; regional, state, or local community courses related to any subject matter that is relevant to driver rehabilitation; and professional organization courses or conferences related to driver rehabilitation. **13.3.2** Review any literature that is relevant to driver rehabilitation.
13.4 **Stay current with industry changes that may affect mobility equipment prescriptions and recommendations.**	**13.4.1** Remain current through in-services, continuing education, and collaboration with mobility equipment dealers regarding new or changing industry standards, improved safety standards, and updated equipment models that may affect mobility equipment prescriptions.
13.5 **Develop a network of driver rehabilitation professionals.**	**13.5.1** Develop relationships with other DRSs in the surrounding regions. **13.5.2** Meet and visit mobility equipment vendors in the surrounding regions. **13.5.3** Participate in the ADED mentorship program.
13.6 **Pursue specialty certification as a driver rehabilitation specialist.**	**13.6.1** Be knowledgeable about the eligibility requirements that are outlined in the ADED document “Pathways to Become a CDRS” in order to determine your eligibility to take the certification exam. **13.6.2** Follow ADED policy and procedures regarding the maintenance of certification as a driver rehabilitation specialist.
13.7 **Establish a program-based quality improvement system.**	**13.7.1** Establish a system to review program outcomes in areas such as clientele served, types of equipment prescribed, results of program participation, length of program involvement, and so forth. **13.7.2** Assess any program changes on the basis of the outcomes review.

Appendix A

RESOURCES

ADED – The Association for Driver Rehabilitation Specialists. A professional network promoting excellence in the field of driver rehabilitation, thought leadership, and advocacy in support of safe, independent community mobility. ADED offers continuing education and a certification program for driver rehabilitation specialists.
Website: www.aded.net
Contact: **1-866-672-9466**

AOTA – The American Occupational Therapy Association. The national professional association established in 1917 to represent the interests and concerns of occupational therapy practitioners and students of occupational therapy and to improve the quality of occupational therapy services.
Website: www.aota.org/Practice/Productive-Aging/Driving.aspx
Contact: **1-301-652-7711**

CAOT – The Canadian Association of Occupational Therapists. Established in 1926, the CAOT provides services, products, events, and networking opportunities to assist occupational therapists in achieving excellence in their professional practice. The CAOT also provides leadership to actively develop and promote the client-centered profession of occupational therapy in Canada and internationally.
Website: http://www.caot.ca
Contact: **1-800-434-2268**

FMVSS/CMVSS – Federal Motor Vehicle Safety Standards. Regulations to which manufacturers of motor vehicle and equipment items shall conform and certify compliance.
U.S. Standards website: http://icsw.nhtsa.gov/cars/rules/standards/
U.S. Contact: **1-888-327-4236**
Canadian Standards website: http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._1038.pdf
Canada Contact: **613-990-2309**

NHTSA – The National Highway Traffic Safety Administration. The federal government agency with the authority to regulate the manufacture of automotive adaptive equipment and modified vehicles used by persons with disabilities.
Website: http://icsw.nhtsa.gov/cars/rules/adaptive/
Contact: **1-888-327-4236**

NMEDA – The National Mobility Equipment Dealers Association. Trade association of mobility equipment dealers that provide vehicle modifications and equipment installation, manufacturers of equipment, driver rehabilitation specialists and other professionals dedicated to broadening the opportunities for people with disabilities to drive.
Website: www.nmeda.com
Contact: **1-800-833-0427**

QAP – Quality Assurance Program. This program is a recognized accreditation program for the mobility equipment industry. The program was developed by NMEDA to promote quality, safety and reliability within the industry.
Website: www.nmeda.com/quality-assurance-program/
Contact: **1-800-833-0427**

RESNA – Rehabilitation Engineering and Assistive Technology Society of America. The premier professional membership organization dedicated to promoting the health and well-being of people with disabilities through increasing access to technology solutions.
Website: www.resna.org
Contact: **1-703-524-6686**

SAE International – Initially established as the **Society of Automotive Engineers**, SAE International is a U.S.-based, globally active professional association and standards organization for engineering professionals in various industries. Principal emphasis is placed on transport industries such as automotive, aerospace, and commercial vehicles.
Website: www.sae.org

UMTRI – The University of Michigan Transportation Research Institute is dedicated to achieving safe and sustainable transportation for a global society. UMTRI has been involved in wheelchair-occupant safety research for over thirty years. UMTRI's Biosciences Group conducts sled-impact tests of wheelchairs, wheelchair seating systems, and wheelchair tiedowns and occupant-restraint systems (WTORS). These tests evaluate their frontal-impact performance relative to crashworthiness criteria in the latest U.S. and international industry standards. UMTRI's Wheelchair Transportation Safety website contains information regarding wheelchair transportation safety and related industry standards, as well as a list of successfully crash tested wheelchairs, securement systems and seating systems.
Website: http://wc-transportation-safety.umtri.umich.edu./

Appendix B

Spectrum of Driver Services: Right Services for the Right People at the Right Time

A description consumers and health care providers can use to distinguish the type of services needed for an older adult.

ADED The Association for Driver Rehabilitation Specialists

AOTA The American Occupational Therapy Association, Inc.

	COMMUNITY-BASED EDUCATION		MEDICALLY-BASED ASSESSMENT, EDUCATION AND REFERRAL		SPECIALIZED EVALUATION AND TRAINING
Program Type	**Driver Safety Programs**	**Driving School**	**Driver Screen**	**Clinical IADL Evaluation**	**Driver Rehabilitation Programs (Includes Driver Evaluation)**
Typical Providers and Credentials	Program specific credentials (e.g. AARP and AAA Driver Improvement Program).	Licensed Driving Instructor (LDI) certified by state licensing agency or Dept. of Education.	Health care professional (e.g., physician, social worker, neuropsychologist).	Occupational Therapy Practitioner (Generalist or Driver Rehabilitation Specialist#). Other health professional degree with expertise in Instrumental Activities of Daily Living (IADL).	Driver Rehabilitation Specialist#, Certified Driver Rehabilitation Specialist*, Occupational Therapist with Specialty Certification in Driving and Community Mobility+.
Required Provider's Knowledge	Program specific knowledge. Trained in course content and delivery.	Instructs novice or relocated drivers, excluding medical or aging conditions that might interfere with driving, for purposes of teaching / training / refreshing / updating driving skills.	Knowledge of relevant medical conditions, assessment, referral, and / or intervention processes. Understand the limits and value of assessment tools, including simulation, as a measurement of fitness to drive.	Knowledge of medical conditions and the implication for community mobility including driving. Assess the cognitive, visual, perceptual, behavioral and physical limitations that may impact driving performance. Knowledge of available services. Understands the limits and value of assessment tools, including simulation, as a measurement of fitness to drive.	Applies knowledge of medical conditions with implications to driving. Assesses the cognitive, visual, perceptual, behavioral and physical limitations that may impact driving performance. Integrates the clinical findings with assessment of on-road performance. Synthesizes client and caregiver needs, assists in decisions about equipment and vehicle modification options available. Coordinates multidisciplinary providers and resources, including driver education, health care team, vehicle choice and modifications, community services, funding / payers, driver licensing agencies, training and education, and caregiver support.
Typical Services Provided	1) Classroom or computer based refresher for licensed drivers: review of rules of the road, driving techniques, driving strategies, state laws, etc. 2) Enhanced self-awareness, choices, and capability to self-limit.	1) Enhance driving performance. 2) Acquire driver permit or license. 3) Counsel with family members for student driver skill development. 4) Recommend continued training and / or undergoing licensing test. 5) Remedial Programs (e.g., license reinstatement course for teens / adults, license point reduction courses).	1) Counsel on risks associated with specific conditions (e.g., medications, fractures, post-surgery). 2) Investigate driving risk associated with changes in vision, cognition, and sensory-motor function. 3) Determine actions for the at-risk driver: • Refer to IADL evaluation, driver rehabilitation program, and / or other services. • Discuss driving cessation; provide access to counseling and education for alternative transportation options. 4) Follow reporting / referral structure for licensing recommendations.	1) Evaluate and interpret risks associated with changes in vision, cognition, and sensory-motor functions due to acute or chronic conditions. 2) Facilitate remediation of deficits to advance client readiness for driver rehabilitation services. 3) Develop an individualized transportation plan considering client diagnosis and risks, family, caregiver, environmental and community options and limitations: • Discuss resources for vehicle adaptations (e.g., scooter lift). • Facilitate client training on community transportation options (e.g., mobility managers, dementia-friendly transportation). • Discuss driving cessation. For clients with poor self-awareness, collaborate with caregivers on cessation strategies. • Refer to driver rehabilitation program. 4) Document driver safety risk and recommended intervention plan to guide further action. 5) Follow professional ethics on referrals to the driver licensing authority.	Programs are distinguished by complexity of evaluations, types of equipment, vehicles, and expertise of provider. 1) Navigate driver license compliance and basic eligibility through intake of driving and medical history. 2) Evaluate and interpret risks associated with changes in vision, cognition, and sensory-motor functions in the driving context by the medically trained provider. 3) Perform a comprehensive driving evaluation (clinical and on-road). 4) Advise client and caregivers about evaluation results, and provide resources, counseling, education, and / or intervention plan. 5) Intervention may include training with compensatory strategies, skills, and vehicle adaptations or modifications for drivers and passengers. 6) Advocate for clients in access to funding resources and / or reimbursement. 7) Provide documentation about fitness to drive to the physician and / or driver-licensing agency in compliance with regulations. 8) Prescribe equipment in compliance with state regulations and collaborate with Mobility Equipment Dealer^ for fitting and training. 9) Present resources and options for continued community mobility if recommending driving cessation or transition from driving. Recommendations may include (but not restricted to): 1) drive unrestricted; 2) drive with restrictions; 3) cessation of driving pending rehabilitation or training; 4) planned re-evaluation for progressive disorders; 5) driving cessation; 6) referral to another program.
Outcome	Provides education and awareness.	Enhances skills for healthy drivers.	Indicates risk or need for follow-up for medically at-risk drivers.		Determines fitness to drive and provides rehabilitative services.

#DRS – Health professional degree with specialty training in driver evaluation and rehabilitation. *CDRS – Certified Driver Rehabilitation Specialist-Credentialed by ADED (Association for Driver Rehabilitation Specialists). +SCDCM – Specialty Certified in Driving and Community Mobility by AOTA (American Occupational Therapy Association).
^Quality Approved Provider by NMEDA (National Mobility Equipment Dealers Association).

Spectrum of Driver Rehabilitation Program Services

A description consumers and health care providers can use to distinguish the services provided by driver rehabilitation programs which best fits a client's need.

ADED The Association for Driver Rehabilitation Specialists

AOTA® The American Occupational Therapy Association, Inc.

Program Type	DRIVER REHABILITATION PROGRAMS Determine fitness to drive and / or provide rehabilitative services.		
Levels of Program and Typical Provider Credentials	**BASIC** Provider is a Driver Rehabilitation Specialist (DRS)# with professional background in occupational therapy, other allied health field, driver education or a professional team of CDRS or SCDCM with LDI**.	**LOW TECH** Driver Rehabilitation Specialist#, Certified Driver Rehabilitation Specialist*, Occupational Therapist with Specialty Certification in Driving and Community Mobility+, or in combination with LDI. Certification in Driver Rehabilitation is recommended as the provider for comprehensive driving evaluation and training.	**HIGH TECH** Driver Rehabilitation Specialist#, Certified Driver Rehabilitation Specialist*, Occupational Therapist with Specialty Certification in Driving and Community Mobility+. Certification in Driver Rehabilitation is recommended as the provider for comprehensive driving evaluation and training with advanced skills and expertise to complete complex client and vehicle evaluation and training.
Program Service	Offers driver evaluation, training and education. May include use of adaptive driving aids that do not affect operation of primary or secondary controls (e.g., seat cushions or additional mirrors). May include transportation planning (transition and options), cessation planning, and recommendations for clients as passengers.	Offers comprehensive driving evaluation, training and education, with or without adaptive driving aids that affect the operation of primary or secondary controls, vehicle ingress / egress, and mobility device storage / securement. May include use of adaptive driving aids such as seat cushions or additional mirrors. At the Low Tech level, adaptive equipment for primary control is typically mechanical. Secondary controls may include wireless or remote access. May include transportation planning (transition and options), cessation planning, and recommendations for clients who plan to ride as passengers only.	Offers a wide variety of adaptive equipment and vehicle options for comprehensive driving evaluation, training and education, including all services available in Low Tech and Basic programs. At this level, providers have the ability to alter positioning of primary and secondary controls based on client's need or ability level. High Tech adaptive equipment for primary and secondary controls includes devices that meet the following conditions: 1) capable of controlling vehicle functions or driving controls, and 2) consists of a programmable computerized system that interfaces / integrates with an electronic system in the vehicle.
Access to Driver's Position	Requires independent transfer into OEM^ driver's seat in vehicle.	Addresses transfers, seating and position into OEM^ driver's seat. May make recommendations for assistive devices to access driver's seat, improved positioning, wheelchair securement systems, and / or mechanical wheelchair loading devices.	Access to the vehicle typically requires ramp or lift and may require adaptation to OEM driver's seat. Access to driver position may be dependent on use of a transfer seat base, or clients may drive from their wheelchair. Provider evaluates and recommends vehicle structural modifications to accommodate products such as ramps, lifts, wheelchair and scooter hoists, transfer seat bases, wheelchairs suitable to utilize as a driver seat, and / or wheelchair securement systems.
Typical Vehicle Modification: Primary Controls: Gas, Brake, Steering	Uses OEM^ controls.	Primary driving control examples: A) mechanical gas / brake hand control; B) left foot accelerator pedal; C) pedal extensions; D) park brake lever or electronic park brake; E) steering device (spinner knob, tri-pin, C-cuff).	Primary driving control examples (in addition to Low Tech options): A) powered gas / brake systems; B) power park brake integrated with a powered gas / brake system; C) variable effort steering systems; D) reduced diameter steering wheel, horizontal steering, steering wheel extension, joystick controls; E) reduced effort brake systems.
Typical Vehicle Modification: Secondary Controls	Uses OEM^ controls.	Secondary driving control examples: A) remote horn button; B) turn signal modification (remote, crossover lever); C) remote wiper controls; D) gear selector modification; E) key / ignition adaptions.	Electronic systems to access secondary and accessory controls. Secondary driving control examples (in addition to Low Tech options): A) remote panels, touch pads or switch arrays that interface with OEM^ electronics; B) wiring extension for OEM^ electronics; C) powered transmission shifter.

#DRS - Health professional degree with specialty training in driver evaluation and rehabilitation, *CDRS – Certified Driver Rehabilitation Specialist – Credentialed by ADED (Association for Driver Rehabilitation Specialists). +SCDCM – Specialty Certified in Driving and Community Mobility by AOTA (American Occupational Therapy Association) ^OEM – Original Equipment installed by Manufacturer.
**LDI-licensed driving instructor.

Driver Rehabilitation Programs: Defining Program Models, Services, and Expertise.
Occupational Therapy In Health Care, 28(2):177–187, 2014

Appendix C

GLOSSARY OF TERMS

***Accessory Switch Controls*[1] —** Switches regulating the environment of the vehicle (i.e., heater, air conditioning, power windows, radio, etc.).

***Acuity*[3] *or Visual Acuity* —** The ability and degree to which a client can recognize detail at various distances.

***Adaptive Equipment*[3] —** Changes or additions that allow vehicle access to drivers and passengers with physical disabilities, aging-related concerns, or both.

***Adaptive Key Holder*[1] —** A device which by design will improve both grip and turning leverage. (Also referred to as a quad key.)

***Aftermarket*[2] —** Neither included nor available as a component, structure, or system on the OEM vehicle.

***Auxiliary Equipment* —** Equipment on a vehicle that is not needed to run or drive the vehicle and that is not required by law. Examples include: stereo system, power antenna, fog lights, trailer hitch, third brake light, power seats, air conditioning system, etc.

***Back-up System*[1] —** A reserve or substitute source of energy in the event of a failure in the primary equipment.

***BTW* —** An abbreviation for Behind the Wheel.

***CDRS*™ [1,3] —** Certified Driver Rehab Specialist. An individual who has obtained the necessary knowledge base and experience in the field of driver rehabilitation and who has successfully obtained and maintained certification requirements set forth by the Association for Driver Rehabilitation Specialists (ADED).

***CEU* —** An abbreviation for Continuing Education Units.

***Chest Harness*[1] —** Also known as an Upper Torso Positioning Belt (thoracic support belt) or Lateral Support. A belt system designed to prevent excessive upper torso movement.

***Clinical*[3] *(Assessment)* —** The practice of administering tests and examinations in a clinic. The term is used to differentiate this evaluation method from the on-road (i.e., behind-the-wheel) evaluation.

***Closed Course* —** Behind-the-wheel assessment or training conducted in an area of no traffic, such as a parking lot.

***CMVSS* —** Abbreviation for Canadian Motor Vehicle Safety Standard.

***Co-Morbidity*[4] —** A concomitant but unrelated pathological or disease process.

***Community Mobility*[3] —** The ability of members of a community to use dependable, cost-effective, and accessible alternatives to driving for traveling over distances less than 500 miles within a specific geographic area. Community mobility (or alternative community mobility) is synonymous with alternative transportation.

***Contrast Sensitivity*[3] —** The ability of the eye to detect various shades of gray or color shades (i.e., nuances).

***Divided Attention*[3] —** The performance or mental processing of two or more stimuli simultaneously.

***DRS*[3] —** An abbreviation for driver rehabilitation specialist. An occupational therapist, other health care professional, driver educator, or other professional who is recognized as competent to perform clinical and on-road driver rehabilitation evaluations, as well as design and implement on-road training regimens.

***Executive Function*[3] —** The ability to coordinate multiple areas of the brain to achieve a desired outcome, such as solving novel problems, changing actions based on previous behavior, developing strategies, and sequencing a series of complex tasks.

Extended Steering Column — A modification to bring the steering wheel closer to the driver.

***Final Fitting*[1] —** Inspection of Equipment to verify installation and appropriate functional fitting and interface with client.

***FMVSS*[2] —** An abbreviation for U.S. Federal Motor Vehicle Safety Standards.

Functional Field of View — Area of the visual field within which a target can be detected.

***Gear Shift Extension*[1] —** A device that attaches to the OEM gear selector and offers additional leverage for shifter operation.

***Gross Vehicle Weight Rating (GVWR)*[1] —** The value specified by the manufacturer as the maximum weight allowed when a fully loaded vehicle (all occupants, all cargo, full fuel tank, etc.) is weighed.

***Hand Controls*[1] —** A device to operate the accelerator and/or brake on a vehicle manually, using the driver's hand rather than the driver's foot. Can be either column-mounted or floor-mounted.

***Hand Control Lock-Out*[1] —** A locking mechanism, either manual or automatically operated, that is a feature incorporated into the design of some hand controls to restrict operation of the hand control.

***High Technology ("High Tech")*[1] —** High Technology devices are those that meet the following conditions: 1) device capable of controlling vehicle functions or driving controls, AND 2) operate with a designed logic system or interface or integrate with an electronic system of the vehicle. *Examples:*

- Primary driving controls such as powered gas/brake systems, power park brake integrated with a powered gas/brake system, reduced effort steering systems, horizontal steering systems, reduced effort brake systems, backups for primary controls.
- Secondary driving controls such as remote panel or switch array interfacing with OEM electronics, wiring extension for OEM electronics, powered transmission shifter.

HIPAA — An abbreviation for Health Insurance Portability and Accountability Act (as per U.S. regulation).

***Horizontal Steering*[2] —** A replacement steering system that allows horizontal reorientation of the steering wheel.

***Hydraulic*[1] —** Operated by the resistance offered or the pressure transmitted when a quantity of fluid (oil or water) is forced through a comparatively small orifice or through a tube.

***Instructor Brake* —** A permanently mounted brake on the passenger (evaluator) side of the vehicle.

***ISO* —** An abbreviation for International Standards Organization.

> ***ISO 10542:*** International standard that specifies design and performance requirements for wheelchair tie-down and occupant-restraint systems (WTORS).

***Joystick Control*[1] —** A steering input device using a single upright post, completely moveable in multi axis, to control primary vehicle functions.

***Kneeling System*[1] —** Commonly found on lowered-floor minivans. Allows a lower floor to ground height, thus decreasing the angle of a ramp entry system.

***Left Foot Accelerator*[1] —** A device installed in a motor vehicle to the left of the brake pedal to allow the operation of the accelerator pedal by the left foot of the driver.

***Low Effort Steering*[2] —** A system requiring less effort for operation than factory installed equipment, but more effort than a Zero Effort Steering System.

Low Technology ("Low Tech") — These are all other devices or modifications that do not meet the definition of High Technology devices or modifications. *Examples:*

- Primary driving control devices such as manual gas and brake hand control, left foot accelerator pedal, steering terminal device, driver training brake.
- Secondary driving control devices such as remote horn button, turn signal cross-over lever, park brake lever or stand-alone powered park brake, switch extension on OEM control, transmission shifter lever, transfer seat belt.

***Lowered Floor*[2] —** An alteration that lowers certain portions of the vehicle floor to facilitate access, vision, positioning and/or increase headroom.

***Manual Muscle Testing (MMT)*[7] —** Assessment modality for the strength of a muscle through manual evaluation. Rating is done by moving the involved part through its full-range of motion against gravity and then against gravity with resistance.

***MVA* —** An abbreviation for Motor Vehicle Accident.

***Mobility Aid*[3] —** Also known as mobility device. A manual or power wheelchair, scooter, or ambulation aid that facilitates indoor and outdoor personal mobility.

***Mobility Equipment Dealer*[1] —** Any individual or business that installs equipment or modifies vehicles for use by people with disabilities as a driver and/or passenger.

***Modified Effort Steering* —** See *Reduced Effort Steering*.

***NMEDA* —** An abbreviation for National Mobility Equipment Dealers Association. Refer to *Resources* page.

***NHTSA* —** An abbreviation for National Highway Traffic Safety Administration. Refer to *Resources* page.

***Occupant Restraint*[2] —** A system or device for restraining the occupant in a motor vehicle to prevent or minimize contact with the vehicle interior components and prevent ejection during a crash (SAE J2249).

***Oculomotor*[4] —** Relating to or causing movements of the eyeball.

***OEM*[1] —** An abbreviation for Original Equipment Manufacturer. A vehicle manufacturer who performs all manufacturing operations on a motor vehicle up to the point that the vehicle is certified as complying with all applicable Federal Motor Vehicle Standards.

***Open Course* —** Behind-the-wheel assessment or training conducted on public roads in normal traffic

***Pedal Extension*[1] —** Device mounted to the brake and/or accelerator for use by a short-stature driver.

***Pedal Guard*[1] —** A device installed in a motor vehicle to prevent access to the accelerator pedal and/or brake pedal.

***Postural Support*[2] —** A component used to support a person in a desired position but that is not usually intended to provide occupant restraint during vehicle impact.

***Powered Gas and Brake Systems*[1,2] —** A device which uses power from an energy source of the vehicle to supplement the force and motions made by the driver to control acceleration, velocity, and braking of a vehicle.

***Power Seat Base*[1] —** An electrically powered base mounted between the floor of the vehicle and the OEM or aftermarket seat. This base may be moved in a combination of needed directions.

***Primary Controls*[1] —** The controls of the vehicle governing movement and direction (i.e., acceleration, braking, and steering).

***Prosthesis*[4] —** An artificial device used to replace a missing body part, such as a limb.

***Proprioception*[4] —** The unconscious perception of movement and spatial orientation arising from stimuli within the body itself. In humans, these stimuli are detected by nerves within the body itself, as well as by the semicircular canals of the inner ear.

***QAP*[1] —** Quality Assurance Program (NMEDA). Refer to *Resources* page.

***Raised Roof*[2] —** An alteration or substitution of an OEM vehicle roof to provide greater headroom.

***Range of Motion*[5] —** The area through which a joint may normally be freely and painlessly moved, the range of flexion and extension of a joint.

***Reaction Time*[4] —** The interval between the presentation of a stimulus and the response to it.

***Reduced Effort* —** A modification to the OEM power brake system that reduces pedal effort. This term includes both low effort brake systems and zero effort brake systems.

***Reduced Effort Steering*[1] —** A modification of the OEM power steering system to lower the amount of effort required to steer a vehicle. This term includes both low effort steering systems and zero effort steering systems.

***RESNA* —** An abbreviation for Rehabilitation Engineering and Assistive Technology Society of America. (Refer to *Resources* page.)

***Seat Belt*[1] —** Strap or webbing designed to secure a person in a motor vehicle.

Shoulder Belt: Strap or webbing designed to restrain an occupant's torso in a motor vehicle by diagonally crossing the torso.

Two Point Seat Belt: A seat belt system using a lap belt (Type 1 belt).

Three Point Seat Belt: A seat belt system that incorporates the lap and shoulder belt (Type 2 belt).

***Secondary Controls*[1] —** Also known as rapid-access secondary controls or mode A secondary controls. Controls that are operated while the vehicle is in motion, but do not affect the control of the vehicle, i.e., turn signals, high beams, wipers/windshield washer, horn.

***Significant Other*[6] —** A person whose close relationship with an individual affects that individual's behavior and attitudes. A significant other is usually a family member, spouse, child, employer, coworker, friend, or lover.

***Steering Device*[1] —** An apparatus attached to the vehicle steering wheel to aid in turning the steering wheel. Includes but is not limited to:

Knob: A steering wheel device with a knob-type grip.

Tri-Pin: A steering wheel device with three upright pins to stabilize the hand and wrist of the driver.

U or V Grip: A steering wheel device with two vertical pins to stabilize the hand of the driver.

Cuff: A steering wheel device with a curved oval shape that fits around the hand of the driver and allows for steering with hand in pronated plane.

Amputee Ring: A steering wheel device that integrates with a driver's prosthesis.

Custom: A steering device designed for a specific application of a driver.

Palm: A steering device that wraps over the top of the hand and allows for steering with hand in pronated plane.

STM: An abbreviation for short term memory.

Structural Modification — An alteration to the OEM structure of the vehicle, usually to facilitate access and/or increase headroom. Examples include: Lowered floor, raised roof, raised door.

Tertiary Controls — Also known as non-rapid access secondary controls or Mode B & C secondary controls. Controls that do not need to be operated when the vehicle is in motion, but do need to be accessible to the driver. Examples include: ignition, shifter, heat and air conditioning controls.

Thought Leadership — A thought leader can refer to an individual or firm that is recognized as an authority in a specialized field and whose expertise is sought and often rewarded. (Wikipedia)

***Turn signal extension*[1] —** A device that attaches to the OEM turn signal lever to allow a different location for activation.

Visual Ellipse — Visual line of sight.

WTORS — An abbreviation for Wheelchair Tie-down and Occupant Restraint System. A complete set of safety equipment for use by wheelchair seated occupants of motor vehicles comprising equipment for securing the wheelchair to the vehicle and equipment for keeping the wheelchair occupant in the wheelchair seat and limiting occupant movement during emergency vehicle maneuvers and crash events (RESNA).

Zero Effort Braking[1] — A modification to the OEM power steering system to lower the amount of effort required to brake a vehicle approximately 75–95%.

Zero Effort Steering[2] — Also known as no-effort steering. A system requiring less force for operation than a Low Effort Steering System. While it is recognized that no system is actually "zero" effort, this is the term commonly used in the adaptive automotive industry to refer to systems requiring the least amount of effort to turn the steering wheel.

Definition Sources

1. NMEDA Guidelines, 2012 Edition

2. Society of Automotive Engineers (SAE): J2094 (R) Vehicle and Control Modifications for Drivers with Physical Disabilities Terminology (2001)

3. Pellerito, J.M. 2006. Driver Rehabilitation and Community Mobility

4. *The American Heritage® Science Dictionary.* Retrieved May 20, 2016 from Dictionary.com website http://www.dictionary.com/browse

5. *Dictionary.com's 21st Century Lexicon.* Retrieved May 20, 2016 from Dictionary.com website http://www.dictionary.com/browse

6. *The American Heritage® New Dictionary of Cultural Literacy, Third Edition.* Retrieved May 20, 2016 from Dictionary.com website http://www.dictionary.com/browse/

7. *Medical Dictionary for the Health Professions and Nursing.* (2012). Retrieved May 20 2016 from http://medical-dictionary.thefreedictionary.com/manual+muscle+testing