

Motorised Mobility Devices
September 2020

Clinical resources for Motorised Mobility Device (MMD) assessment, device recommendations and training

Each year, over 1,000 Australians are admitted to hospital due to incidents involving mobility scooters.¹ Almost all these injuries occur to device users, but there are also concerns about wider community safety due to the increasing use of these devices.

Motorised mobility scooters and wheelchairs are therapeutic devices and device choice should be guided by health professionals. A client-centred approach including family, carers and relevant others is critical to optimise safety and personal mobility independence outcomes.

- Comprehensive assessment of a person's physical, sensory, cognitive and behavioural abilities is required to establish their capacity to consistently use an MMD safely in relevant environments.
- Ideally, this is achieved through a clinical assessment combined with an assessment of lifestyle needs, device experience and a practical skills assessment.
- Further training in the key skills then supports safe device operation.

A survey of Victorian OTs conducted in 2019 by the Department of Transport found variable use of standardised and validated tools for assessing and training MMD users. Many respondents specifically expressed a need for more information and guidance in this area.

This document summarises and compares commonly used MMD related clinical resources to enable AHPRA registered health professionals to select those that suit their practice needs.

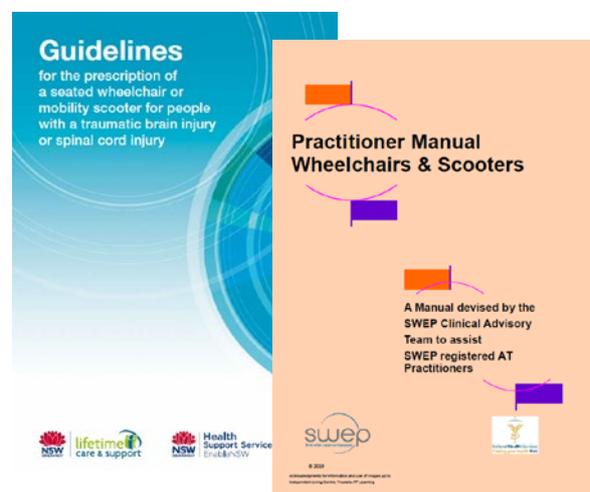
Identification of resources

Resources were identified via a desktop review. A detailed evaluation of every tool in terms of its validity, reliability, standardisation and research foundations was beyond the scope of this project. As such, this is only a listing, not an evaluation of tool standardisation or clinical utility.

The term "evidence based" has been used here where the resource has been described in a scholarly way (e.g. sources of information, consensus agreement and data which have underpinned the tools' content, administration and any evaluation and/or trial testing has been referenced, etc.).

Resources outlined here may provide a structure to (a) guide the assessment process, and (b) assess essential potential user attributes before MMD design feature specification.

"There is no formula for prescribing a wheelchair or scooter; rather it is an incremental process. When the person and the wheelchair or scooters are well matched the impact of the person's impairment is reduced, enabling them to achieve goals, participate in life roles and improve their health and quality of life."
(Guidelines for the prescription of a seated wheelchair or mobility scooter for people with a traumatic brain injury or spinal cord injury, 2011)



¹ Australian Institute of Health and Welfare, McKenna K, Tovel A and Pointer S (2019). *Mobility scooter-related injuries and deaths*. Injury research and statistics series no. 121. Canberra, AIHW Available from: aihw.gov.au/getmedia/61abe614-d7b8-41c3-ba9a-0215f77a7c89/aihw-injcat-201.pdf

While the information below will inform resource selection, it is strongly recommended that health professionals familiarise themselves with the details and limitations of each resource before making a decision about which one(s) may best suit their practice. Links to the full resource are provided. All the resources listed are available free of charge. Table 1 (see page 5) summarises the skills assessment domains addressed by the four resources that include a skills assessment tool.

1. Guidelines for the prescription of a seated wheelchair or mobility scooter for people with a traumatic brain injury or spinal cord injury

Type of resource: Clinical guideline (Australia)

Author: EnableNSW and Lifetime Care & Support Authority

Date: 2011 **Cost:** Free

Available from:

aci.health.nsw.gov.au/___data/assets/pdf_file/0003/167286/Guidelines-on-Wheelchair-Prescription.pdf

Scope:

These comprehensive evidence-based guidelines provide a best practice framework to guide clinical decisions when prescribing wheelchairs and scooters for adults who have a spinal cord or traumatic brain injury. The steps, principles and recommendations included in the guidelines are generally applicable to other health conditions and circumstances.

Content:

The guidelines contain evidence-based recommendations regarding:

- the general approach and principles for assessing and training users
- goal setting and measures to establish goal achievement and outcomes
- ethical considerations
- assessment and review of capacity and performance; sensory, physical, cognitive, decision-making capacity
- considerations such as alcohol and drug use, maintaining physical and cardiovascular fitness and other health and safety concerns
- wheelchair features and considerations for prescription
- selection of propulsion method – manual or powered, and selection of drive wheel position and control devices
- specific considerations for scooters
- training, including general content and duration
- transport, including use on public transport
- maintenance of devices.

The resource does not include a skills assessment tool as such or a detailed training program. It also does not include templates for documentation,

however practical checklists (e.g. for goals, training topics, maintenance) and recommendations for other resources are provided.

2. Practitioner Manual for Wheelchairs & Scooters

Type of resource: Practice manual (Victoria, Australia)

Author: Statewide Equipment Program's (SWEP) Clinical Advisory Team (June 2019)

Date: June 2019 **Cost:** Free

Available from:

swep.bhs.org.au/precriber-manuals.php

Scope:

This practice manual guides SWEP registered assistive technology practitioners in making device recommendations and undertaking the SWEP application process. While there is limited detailed information about on-device assessment and training, it does include an overview of the assessment domains for manual and motorised devices.

It also provides comprehensive information about the range of features and accessories available to customise devices to the users' needs.

Content:

Topics covered in the manual include:

- definitions of devices
- recommended assessment domains (physical, functional, support person characteristics, satisfaction and goals, environment, outcomes) and measures of these domains
- considerations for practitioners
- device features and accessories to address individual needs
- links to further resources relating to evidence-based practice and SWEP processes and equipment.

This resource does not include templates for documentation however it lists topics to consider and links to other resources.

3. Powered Mobility Device Assessment Training Tool (PoMoDATT)

Type of resource: Clinical and skills assessment and training resource (Australia)

Authors: Kathryn Townsend & Carolyn Unsworth

Date: 2016 **Cost:** Free

Available from: pomodatt.com

Scope:

This validated Australian resource guides assessment of an individual's capacity and competence to use an MMD in the environment in which it will be used (i.e. at home and in the community). It also guides the training process, including identification of specific training needs.

Content:

The resource comprises a detailed instruction manual including:

- guidance for conducting an initial interview to identify potential use, medical conditions, assess knowledge of road rules, emergency response, identify other individual requirements and barriers
- guidance for conducting a clinical assessment covering cognitive, physical, sensory and psychosocial domains, including links to recommended assessment tools
- guidance in ensuring the user understands basic operation of the device prior to assessment
- guidance for conducting on-device assessment addressing 26 items
- guidance in providing training in relation to these items, including addressing skill gaps
- administration templates for all aspects of the assessment and training, including scoring outcomes and recommendations
- links to other resources.

Skills assessment outcome:

- Operating skill and performance are assessed up to three times, enabling assessment in relevant environments (clinical environment, home, community).
- User performance for each item is expressed as a four-point scale:

- 4 = Independent and competent
- 3 = Developing competence (hesitancy or over confidence; knocks walls or other objects lightly)
- 2 = Verbal prompting (supervision required, uses inappropriate speed, bumps objects – could cause harm, incorrect positioning of device, inconsistent driveway scanning)
- 1 = Hands-on assistance
- 0 = Not scored – due to safety concerns

A total score for the skills assessment is derived at the end of the assessment. The score alone does not in itself provide information on safe, independent device use. Rather, the occupational therapist will interpret this score considering the findings of the overall assessment, including clinical findings. Assessment outcome categories include:

- Able to use a powered mobility device
- Supervised use
- Not appropriate at this time – further training required
- Not appropriate to use a powered mobility device.

4. Wheelchair Skills Program

Type of resource: Skills assessment and training resource (Canada)

Authors: R Lee Kirby, Paula Rushton, Cher Smith & Francois Rouither

Date: August 2019 **Cost:** Free

Available from: wheelchairskillsprogram.ca

Scope:

Developed in Canada, the comprehensive Wheel Chair Skills Program applies to manual and powered wheelchairs, including mobility scooters. The program is conducted in a clinic-based environment and comprises the Wheel Chair Skills Test and Questionnaire, and the Wheel Chair Training Program. It enables identification of training needs and re-evaluation following training. It does not include a clinical assessment.

Content:

The resource comprises a detailed instruction manual, including:

- common risks to consider during assessment and training
- guidance for conducting an initial interview
- detailed guidance for conducting a clinic-based on-device assessment of MMD user skills and confidence across 25 skill items
- guidance for goal setting based on the assessment outcome
- detailed guidance for conducting training, including educational principles and strategies
- administration templates for all aspects of the assessment and training, including scoring outcomes and recommendations, a training log and a wheelchair specification form to guide device scripting.

Skills assessment outcome:

- The Wheelchair Skills Test (WST) uses a four-point scale
 - 3 = advanced pass
 - 2 = pass
 - 1 = partial pass
 - 0 = fail
- The total WST Capacity Score is calculated as a percentage. It is helpful in comparing different time points and establishing the impact of interventions.
- The WST Questionnaire uses a similar four-point scale for assessment of user-reported capacity, confidence, and performance. The questionnaire also seeks user interest in receiving further training.
- The Wheelchair Training Program log enables scoring of user capacity for each training session, ranging from advanced pass to fail, to enable progression in training to be measured.

5. Powered Mobility Indoor Driving Assessment (PIDA)

Type of resource: Skills assessment tool (Canada)

Authors: Deirdre Dawson, Ethel Kaiserman-Goldenstein, Roberta Chan & Janet Gleason

Date: 2006 **Cost:** Free

Available from: powermobilityalberta.wordpress.com

Scope:

This validated tool guides assessment of MMD user competence in an indoor environment to inform and evaluate interventions such as delivery of a training program or environmental modification. It was originally developed for individuals living in residential care, thus the skills and environments assessed are relevant to that setting (refer Table 1). The resource does not include a clinical assessment or training program.

Content:

The resource comprises skills assessment tools including:

- a Mobility Device and Driver Checklist that is completed before the skills assessment to establish the nature of the device, user experience and current skills level in relation to basic operation
- brief guidance for conducting the on-device skills assessment tasks, including instructions and criteria
- scoring explanation and score sheet.

Skills assessment outcome:

- Operating skill is rated using a four-point scale:
 - 4 = Completely independent: optimal performance, able to perform task in one attempt smoothly and safely
 - 3 = Completes task hesitantly, requires several tries, requires speed restriction, and/or bumps walls, objects etc. lightly (without causing harm)
 - 2 = Bumps objects or people in a way that causes or could cause harm
 - 1 = Unable to complete task (for example may require verbal and/or visual cues or physical assistance).
- A total score is derived at the end of the assessment expressed as a percentage. This score does not represent a percentage of normal. Rather, it provides a number which may facilitate comparing performance over time to inform an overall outcome.

6. Powered Mobility Community Driving Assessment (PCDA)

Type of resource: Skills assessment tool (Canada)

Authors: Lori Letts, Deirdre Dawson, Lisa Masters & Julie Robbins

Date: 2003 **Cost:** Free

Available from:
powermobilityalberta.wordpress.com

Scope:

Also developed in Canada, this validated tool guides the assessment of MMD user capability and competence in outdoor and community environments where the device will be used. It includes the use of the device on public transport if relevant. Indoor operating skills are only assessed if relevant. The resource does not include a clinical assessment or training program.

Content:

The resource comprises skills assessment tools and brief guidance, including:

- a Mobility Device and Driver Checklist that is completed before the skills assessment to establish the nature of the device, user experience and current skills level in relation to basic operation
- a structured Pre-Performance Interview that begins to assess the client's knowledge and ability to operate an MMD in the community and includes lifestyle analysis, identification of environments where the device may be used, need for accompaniment, operator factors such as seating tolerance, knowledge of basic road rules and managing emergency situations
- Performance Assessment guidance and scoring template.

Skills assessment outcome:

Operating skill is rated using a four-point scale:

- 3 = Completely independent: optimal performance, able to perform task in one attempt smoothly and safely
- 2 = Completes task hesitantly, erratically or impulsively, requires several tries, does not adjust speed as necessary and/or bumps walls, objects etc. lightly (without causing harm)
- 1 = Bumps objects or people in a way that causes or could cause harm to driver, other persons or to objects
- 0 = Unable to complete task even with maximal assistance.

A total score is derived at the end of the assessment expressed as a percentage. This score does not represent a percentage of normal. Rather, it provides a number which may facilitate comparing performance over time to inform an overall outcome and impact of interventions such as training, device modification or environmental modification.

Comparison of assessment domains

The table below provides a basic comparison of the overall assessment content covered in the four resources that include a skills assessment tool (resources 2-6 above). It is recommended that AHPRA registered health professionals familiarise themselves with individual tools to gain a detailed understanding of their content.

All efforts have been made to review MMD clinical resources available in the public domain in mid 2020 that are suitable for application in the Australian health context. As new clinical tools emerge and others change, we recommend that health professionals stay up to date with advances in this domain through self directed learning and continuing professional education.

Road Safety Victoria, Department of Transport, September, 2020

Table 1. Comparison of MMD assessment and training resources

Assessment Domain	PoMoDATT	Wheelchair Skills Program	Powered Mobility Indoor Driving Assessment	Powered Mobility Community Driving Assessment
Resource scope				
Clinical assessment	✓			
Skills assessment	✓	✓	✓	✓
Skills training	✓	✓		
Initial interview/goal setting				
Initial interview	✓	✓	✓	✓
MMD 'road rule' education/	✓			✓
Clinical assessment/test				
Physical ability	✓			
Cognitive capacity	✓			
Operating lesson				
Basic operating lesson	✓	✓	✓	✓
Location of assessment/training				
Location	Indoor & outdoor	Indoor & outdoor	Indoor	Indoor & outdoor
Own environment	Yes	No (clinic based)	Yes	Yes
On-device user response to environment assessment/consideration				
Quiet/busy environments	✓		✓	✓
User confidence		✓		
Timely response to environmental changes	✓	✓	✓	✓
Basic on-device skills				
Transferring on/off device	✓	✓	✓	✓
Turning device on/turn off	✓	✓	✓	✓
Operating in a straight line	✓	✓	✓	✓
Operating in reverse	✓	✓	✓	✓
Manoeuvring device	✓	✓	✓	✓
Using brakes / stopping	✓	✓	✓	✓
Speed control	✓	✓	✓	✓
Parking device	✓	✓	✓	✓
Indoor on-device skills				
Accessing rooms / negotiating doorways	✓	✓	✓	✓
Using a lift/elevator	✓		✓	
Negotiating ramp (inclines/ declines) indoors		✓	✓	
Outdoor on-device skills				
Operating the device on different surfaces	✓	✓		✓
Operating the device on inclines/ declines (e.g. ramps)		✓	✓	✓
Using a footpath	✓			✓
Negotiating kerbs	✓	✓		✓
Crossing roads	✓			✓
Negotiating intersections	✓			✓
Using wheelchair accessible public transport				✓