**PREP2 Advanced – Supervisor Key Competencies**

This document is designed for clinicians who will be training others (acting as the “Trainer” or “Supervisor”) in the practical and clinical skills required to achieve ‘PREP2 Advanced’ Competency. For the purposes of this document they will be referred to as the ‘training supervisor’. The ‘trainees’ will be physiotherapists and occupational therapists who prescribe and deliver upper limb rehabilitation after stroke. This training includes skills such as performing NIHSS assessments, supporting TMS assessments, and delivering predictions for patients in the Good, Limited and Poor PREP2 categories with a Day 3 SAFE score of less than 5. Trainees will have completed PREP2 Basic before starting PREP2 Advanced. Clinicians training to act as PREP2 Advanced supervisors should have successfully completed PREP2 Basic and PREP2 Advanced and have successfully completed the PREP2 Basic Supervisor Key Competency document before starting this competency document.

Training Supervisor Competency Process: Agreed competencies are to be signed off by your allocated assessor. Bring your competency document to any training sessions. Following this, you will need to complete the log of supervised training sessions with a trainee, including at least 3 that are deemed successful.

**On completion of competencies:**

Copy to be retained by employee and healthcare organisation. Once signed off, it is the responsibility of the training supervisor to ensure that skills are kept up to date, and opportunities to refresh skills and knowledge are sought on a regular basis.

**PREP2 Competency Documents PREP2 Basic and PREP2 Advanced, and PREP2 Basic Supervisor completed (prerequisite)**

*Training supervisor*: “I acknowledge that I have successfully completed the above PREP2 training modules and competencies”

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

Date of competency sign off: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PREP2 Advanced Supervisor Key Competencies:**

*Organisation representative/ allocated assessor: “*I acknowledge that the Training supervisor has demonstrated required skills and knowledge for becoming a PREP2 Advanced supervisor”

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

*Trainee*: “I acknowledge that I have completed and understood all required training for becoming a PREP2 Advanced supervisor.”

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_

**Readings & Resources**

In addition to the listed readings and resources you are expected to look for some up to date literature and record this as you go.

**Useful Readings & Resources**

Stinear C (2010) Prediction of motor recovery after stroke *Lancet Neurology* 9(12): 1228-32

Stinear C (2017) PREP 2: A biomarker-based algorithm for predicting upper limb function after stroke. *Annals of Clinical and translational Neurology. 4(11): 811-820.*

Stinear C. (2017) [Prediction of motor recovery after stroke: advances in biomarkers](https://www.sciencedirect.com/science/article/pii/S1474442217302831). *Lancet Neurology* 16(10): 826-36.

Smith, M. C., Ackerley, S. J., Barber, P. A., Byblow, W. D., & Stinear, C. M. (2019). PREP2 Algorithm Predictions Are Correct at 2 Years Poststroke for Most Patients. *Neurorehabilitation and neural repair*, *33*(8), 635-642.

Hallett M (2007) Transcranial magnetic stimulation: a primer *Neuron* 55(2):187-99

Rothwell J (2007) Techniques and mechanisms of action of transcranial stimulation of the human motor cortex *Journal of Neuroscience Methods* 74:113-22

Rossi S (2009) Safety, ethical considerations, and application guidelines for the use of transcranial magnetic stimulation in clinical practice and research *Clinical Neurophysiology* 122 (8), 1686

Lerner A (2019) Seizures from transcranial magnetic stimulation 2012–2016: Results of a survey of active laboratories and clinics *Clinical Neurophysiology (*https://doi.org/10.1016/j.clinph.2019.03.016*)*

[www.presto.auckland.ac.nz](http://www.presto.auckland.ac.nz)

https://preptraining.auckland.ac.nz/

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| **Article Reference:** | **Key points:** |
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| **Required?** **Y or N/A** | **Competency** | **Measurement** | **Self-sign off & date** | **Assessor****Sign off & date** |
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| *If refresher required following PREP2 Basic Training*  | Demonstrates an understanding of PREP2 development and validation  | * Discuss the development of PREP2, from biomarkers identified in chronic stroke patients, to the development and validation of PREP2 with sub-acute stroke patients.
* Demonstrate a clear understanding of the evidence for PREP2, being able to identify the strengths and limitations of previous work.
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|  | Demonstrate effective and accurate presentation skills  | * Demonstrate the ability to deliver clear and accurate presentations to trainees, outlining the use of PREP2.
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|  | Demonstrate understanding of learner needs  | * Describe an approach to training that considers the current knowledge and experience of the trainees and effective means of communication
* Demonstrate an understanding of critical knowledge and skills to be acquired by trainees and the ability to discern whether these have been successfully acquired.
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|  | Demonstrate approach to meeting learner needs  | * Describe an approach to training and coaching individual trainees that considers supported self-directed learning and problem solving, appropriate and timely feedback, and facilitates high levels of engagement by trainees.
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|  | Demonstrates awareness of likely concerns and queries related to PREP2 | * Describe concerns and queries that trainees are likely to raise during their training, and appropriate responses to these
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|  | Demonstrates advanced knowledge of motor system anatomy | * Discuss the components of the nervous system that control voluntary movement
* Demonstrate how to assess and support this knowledge in trainees
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|  | Demonstrates ability to teach clinical application of NIHSS assessment | * Demonstrate the ability to correctly educate trainees in the timing of NIHSS score acquisition and interpretation.
* Demonstrate the ability to accurately assess trainees’ grading of items on NIHSS assessment.
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|  | Demonstrates ability to teach basic concepts of transcranial magnetic stimulation (TMS) | * Describes the mechanism of action of TMS
* Describes the relative and absolute contraindications to TMS
* Identifies and names parts of TMS and EMG equipment and their function.
* Demonstrates the ability to correctly educate trainees in basic skin preparation for EMG electrode placement, and how to trouble shoot for impedance issues.
* Demonstrates the ability to correctly educate trainees on the role of the “TMS assistant” within TMS assessment sessions, as outlined in the PREP2 Advanced Competency document.
* Demonstrates the ability to correctly educate trainees on the components of the motor evoked potential (MEP) and their interpretation.
* Demonstrates the ability to coach trainees to engage in conversations with clients (patients and whanau) around TMS use in practice.
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|  | Demonstrates ability to assess knowledge and skill in relating to clinical use of transcranial magnetic stimulation (TMS) | * Demonstrate the ability to accurately assess trainees’ knowledge of basic concepts of TMS outlined in PREP2 Advanced Competency document.
* Demonstrate the ability to accurately assess trainees’ ability to perform basic skin preparation and troubleshooting of impedance issues.
* Demonstrates the ability to accurately assess trainees’ skills in “TMS assistant” duties within TMS assessment sessions, as outlined in the PREP2 Advanced Competency document.
* Demonstrate the ability to accurately assess trainees’ ability to accurately identify and interpret EMG readings to ascertain patient MEP status.
* Demonstrates the ability assess trainees’ competence to engage in conversations with clients around TMS use in practice.
* Demonstrate the ability to provide timely feedback and coaching on the above skills.
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|  | Demonstrates ability to teach basic concepts of screening patients for TMS | * Can describe and demonstrate the screening process for TMS
* Can identify the main relative and absolute contraindications to TMS
* Demonstrates ability to accurately assess trainee’s competence with completing a TMS checklist, as outlined in PREP2 Advanced Competency document
* Demonstrate the ability to provide timely feedback and coaching on the above skills.
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|  | Demonstrates ability to assess trainee’s knowledge and skill in **using** and **supporting** all PREP2 predictions | * Demonstrate the ability to accurately assess trainees’ knowledge as outlined in PREP2 Advanced Competency document, and provide appropriate feedback and coaching as needed.
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|  | Demonstrates ability to assess trainee’s ability to deliver, document and communicate PREP2 predictions following TMS assessment | * Demonstrate the ability to accurately assess trainees’ skills as outlined in PREP2 Advanced Competency document, and provide appropriate feedback and coaching as needed.
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| **Practical assessments: *Allocated assessor to complete*** |
| **Patient name:Date:Training Supervisor:****Assessor:PREP2 Advanced Trainee:****Ward:Present:**  | **Diagnosis:Age:Gender:** **Day 3 SAFE Score:** /10**NIHSS:Day post stroke:** | **Position:** Chair/bed**Tested:** One side/both**Outcome:** MEP +ve/MEP –ve**Prognosis given:** **Good/Limited/Poor** |
| **Competency -**  | **Training supervisor****Identifies****Yes/No** | **Comments**  |
| **Screens patient for contraindications to TMS*** Trainee accurately completes the TMS Safety Checklist, in consultation with the patient, their family, and the patient’s clinical notes
* Trainee presents the completed checklist to the physician for consideration
* Trainee records the outcome of the TMS safety screening in the patient’s clinical notes, and conveys the outcome to the patient and their family
* Trainee provides the patient and their family with an accurate and concise explanation of the TMS procedure
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| **Records surface EMG*** Trainee prepares the skin appropriately, including cleaning, hair removal, and abrasion
* Trainee accurately positions EMG electrodes over the target muscle(s) and reference site
* Trainee correctly connects the EMG electrodes to the EMG electrode box
* Trainee correctly uses EMG system software to observe EMG activity
* Trainee can discern between acceptable and unacceptable EMG signals, and between biological and environmental sources of noise in the signal
* Trainee can trouble-shoot to improve the quality of the EMG signal as required
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| **Participation in TMS delivery** * Trainee communicates effectively with the patient before and during the testing procedure
* Trainee safely turns on, arms and tests the TMS unit
* Trainee monitors the patient throughout the TMS session and responds appropriately
* Trainee communicates appropriately with other staff members throughout the session
* Trainee accurately evaluates whether motor evoked potentials can be elicited in the target muscle(s)
* Trainee uses facilitation techniques where appropriate
* Trainee removes EMG electrodes and cleans patient’s skin
* Trainee disconnects, turns off and stores equipment correctly
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| **Explains results from TMS assessment to patient and family*** Trainee chooses an appropriate time and place for discussion
* Trainee ensures that family is present for discussion if this has been agreed to prior to testing
* Trainee checks patient/family expectations for upper limb recovery
* Trainee forecasts results and then provides prediction clearly and at an appropriate pace
* Trainee responds appropriately to verbal and non-verbal cues from patient/family
* Trainee describes focus of UL rehabilitation based on prediction
* Trainee accurately answers any questions from patient/family
* Trainee checks patient/family understanding of the prediction
* Trainee communicates with patience and empathy
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| **Provides PREP2 prediction to team*** Trainee communicates results from TMS assessment and resulting PREP2 prediction to rehabilitation and medical teams
* Trainee able to discuss appropriate goals with rehabilitation team in light of the TMS assessment results and PREP2 prediction
* Trainee able to discuss appropriate discharge planning and referral options for patients in **’Good’,** **‘Limited’** and **‘Poor’** prediction groups
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| **Post-session reflection – Trainee/Supervisor:**  | **Action plan:**  |
| **Post Session Reflection – Supervisor / Assessor:** **Action Plan:** |

Training Log:

Supported training sessions (Training Supervisor with PREP2 Advanced Trainee, supported by assessor)

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| --- | --- | --- | --- |
| **Number** | **Date** | **Supervisor** | **Comments** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |

Training sessions (Training Supervisor with PREP2 Advanced Trainee)

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| --- | --- | --- | --- | --- |
| **Number** | **Date** | **Supervisor** | **Trainee** | **Comments** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |

Independent Management, observed by allocated assessor (Training supervisor observes sessions led by PREP2 Advanced Trainee, and deems whether “sign ‘off” appropriate) (3 minimum)

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| **Number** | **Date** | **Trainee**  | **Assessor** | **Comments** |
| **1** |  |  |  |  |
| **2** |  |  |  |  |
| **3** |  |  |  |  |
| **4** |  |  |  |  |
| **5** |  |  |  |  |

**Follow-up**

 Observed training or ‘sign off’ sessions (Training Supervisor with PREP2 Advanced Trainee, observed by assessor) (at 6 months & yearly onwards)

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| **Number** | **Date** | **Trainee** | **Assessor** | **Comments** | **Competent** **Sign & date** |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |