

Facilitators and Barriers to PREP2

| Obtaining the prediction | |
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| 1. Characteristics of the prediction tool | |
| 1.1 Biomarker algorithms are more likely to be implemented if they come from a credible source. | PREP2 uses well-established biomarkers, is validated by high quality evidence and is more accurate than clinical judgment. |
| 1.2 Biomarker algorithms that use predictors obtained at low <i>cost</i> , using existing resources, are more likely to be implemented. | PREP2 begins with a low-cost measure (SAFE score) and moves to costlier TMS only as required. Cost for TMS equipment and ongoing staff training might be offset by savings associated with increased rehabilitation efficiency. |
| 1.3 Highly <i>technical</i> measures that are embedded in <i>complex</i> algorithms may be a barrier. | PREP2 is a 3-step prediction tool, requiring only a simple bedside assessment (SAFE score) for two thirds of patients. TMS is needed for the remaining patients but involves a simple measure that can be obtained in about 30 minutes. |
| 1.4 Biomarker algorithms that use strict protocols on a rigid timeline have low <i>adaptability</i> and may be a barrier to implementation. | PREP2 provides time windows, rather than strict time points, for obtaining the SAFE score and TMS measures. |
| 2. Clinical setting | |
| 2.1 The <i>implementation climate</i> will influence implementation. Leadership engagement at multiple levels of the healthcare organisation will facilitate implementation. | Important to have clinical service leaders on board, acting as opinion leaders to ensure PREP2 is compatible with the service and its values. |
| 2.2 Having <i>resources</i> such as sufficient staff responsible for obtaining and delivering predictions are important. | An evaluation of the service's capacity is important before implementing PREP2. |
| 3. Characteristics of the health professional | |
| 3.1. The <i>beliefs</i> of the staff will influence implementation. Implementation success is more likely where staff recognise the value of accurate prediction information, and the limitations of predictions made on clinical assessment alone. | PREP2 is accurate for 75% of patients, and more accurate than clinical judgment. Up to date information on PREP2 and its rationale can be accessed easily on http://presto.auckland.ac.nz |
| 3.2 Staff need to have the right <i>skills</i> to confidently undertake assessments. | The SAFE score can be easily obtained by physical or occupational therapists with minimal training. TMS requires specific training. |

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| Communicating and using the prediction | |
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| 1. Characteristics of the prediction tool | |
| 1.1 Biomarker algorithms that are relatively <i>simple</i> and easily understood will be more readily communicated. | PREP2 makes one of four predictions of upper limb functional outcome and describes how this might affect a person's daily life. |
| 1.2 High <i>trialability</i> of new processes improves their implementation. A process that can be tested then stopped if necessary is more likely to be implemented. | Obtaining, communicating and using prediction information does not replace an existing process, and therefore can be stopped at any time without having to revert to previous practices. |
| 1.3 How <i>information</i> is presented influences the success of implementation. | Written and verbal information is provided to the patient and their family, and to the clinical team. |
| 2. Clinical setting | |
| 2.1 Implementation can be supported by ensuring staff are provided with resources and <i>training</i> , as well as opportunities for practice and feedback. | The support team provides training, resources and ongoing support to assist staff in communicating and using predictions. |
| 2.2 Patients want consistent information from the multidisciplinary team about stroke recovery. | Training in the communication of predictions is provided to all team members, including medical and nursing staff, in addition to allied health staff. Sustainability is addressed by ongoing training, as staff typically rotate through services, and new staff join the rehabilitation team on a regular basis. |
| 3. Characteristics of the health professional | |
| 3.1. <i>Unfamiliarity</i> with providing individualised prognostic information is a major barrier for therapists. | Education is provided to therapists (and other staff) to ensure there is good understanding of PREP2 predictions and what they mean. |
| 3.2 Therapists' <i>confidence</i> in their ability to have potentially difficult conversations with their patient is likely to affect whether and how they communicate and use prediction information. | Training is provided to therapists, and the wider team, so they are well-equipped to effectively, confidently and accurately convey and support predictions. |