Trauma rehabilitation

Whakaoranga kohuki

Te Whatu Ora Counties Manukau case study: Improving the accuracy of post-traumatic amnesia assessments

Taa Te Whatu Ora ki Manukau rangahau: Te whakapai ake i ngaa aromatawai paamamae whaimuri i te mate wareware

Te Hononga Whētuki ā-Motu National Trauma Network

Te Whatu Ora Health New Zealand Counties Manukau

Te Kāwanatanga o Aotearoa New Zealand Government

Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

Te Whatu Ora
Health New Zealand
Counties Manukau

In 2021, the trauma rehabilitation national collaborative brought together 11 teams of rehabilitation clinicians from across Aotearoa New Zealand to complete quality improvement projects that would improve outcomes in rehabilitation after major trauma. The rehabilitation collaborative formed part of a broader programme of work by the National Trauma Network, Accident Compensation Corporation (ACC) and the Health Quality & Safety Commission (the Commission) to establish a contemporary system of trauma care in Aotearoa New Zealand.

This case study uses the double vowel in its te reo Maaori rather than the macron, as this is the language strategy and tikanga of Counties Manukau Health. www.countiesmanukau.health.nz/about-us/use-of-the-double-vowel-in-te-reo-maaori-at-cm-health.

Overview | Tirohanga whaanui

Te Whatu Ora Counties Manukau has long had a process in place to screen for post-traumatic amnesia (PTA) following suspected traumatic brain injury (TBI). However, there were inaccuracies in the way the assessments were performed, increasing the risk of missing diagnoses of concussion or more serious TBIs. As a result, some people experienced suboptimal hospital care and some referrals to community support services could potentially be overlooked.

The team developed resources and delivered education to occupational therapy staff working on the acute wards. An in-depth clinical audit looked into exactly where inaccuracies in assessment lay. Based on this audit, Counties Manukau launched an online module on the Ko Awatea learning platform to provide consistent education for all clinicians involved in the assessment of TBI and concussion. Resources have been developed for every ward where staff undertake PTA assessment to standardise the approach across all locations. Staff feedback has been positive about the ease of completing the assessment with the structured distribution of consistent resources.

Background and context | Koorero o mua me te horopaki

People who have experienced traumatic brain injury may be admitted to one of several different wards at Te Whatu Ora Counties Manukau. Baseline data collection showed that people were assessed for PTA on the surgical and orthopaedic wards, as well as the national burns centre and plastics ward. The average age was 46 years (range 20–87). The ethnicities of people assessed for PTA were 21 percent Maaori, 21 percent Pacific and 58 percent non-Maaori, non-Pacific.

The traumatic brain injury toolkit is used in Counties Manukau as a reference for staff so that they can administer the right assessments with patients at the right time. The abbreviated Westmead PTA scale (A-WPTAS) and the Westmead PTA scale (WPTAS) are the two assessment tools used, alongside other symptom identification tools and functional observation.

Diagnosing the problem | Te taatari raru

The problem

Across wards and health professionals at Te Whatu Ora Counties Manukau, there are inconsistencies and misunderstandings over administering and scoring the abbreviated and full Westmead PTA scales. As a result, some patients are unable to access the support they need after an injury.

How did you know that this was a problem?

An audit of clinical documentation gathered baseline data retrospectively. It showed the most common errors in administering the assessments were:

- a delay in starting the assessments
- using the incorrect assessment tool
- using the picture cards incorrectly
- using inappropriate face cards
- incomplete documentation.

What was the baseline data?

The baseline audits showed that staff administered 33 percent of indicated full PTA assessments correctly. Abbreviated PTA assessments had a higher accuracy rate, at 69 percent. The overall accuracy rate was 45 percent.

The aim | Te whaainga

Because the baseline audits indicated that most errors were occurring with the WPTAS and this was the assessment tool the acute wards used most frequently, the team decided the project would focus on the WPTAS.

The project aimed to improve the accuracy rates of the Westmead PTA assessments, when administered for patients admitted to acute wards who meet TBI pathway criteria, from 33 percent to 90 percent by February 2022.

The measures | Ngaa ine

See Appendix 1 for a detailed description of the measures.

Outcome measures

Percentage of Westmead PTA assessments administered correctly

Equity measures

- Percentage of assessments with documented whaanau involvement in the assessment
- Percentage of assessments administered correctly for Maaori compared with non-Maaori
- Where English was a second language, percentage of cases where an interpreter was used.

Process measures

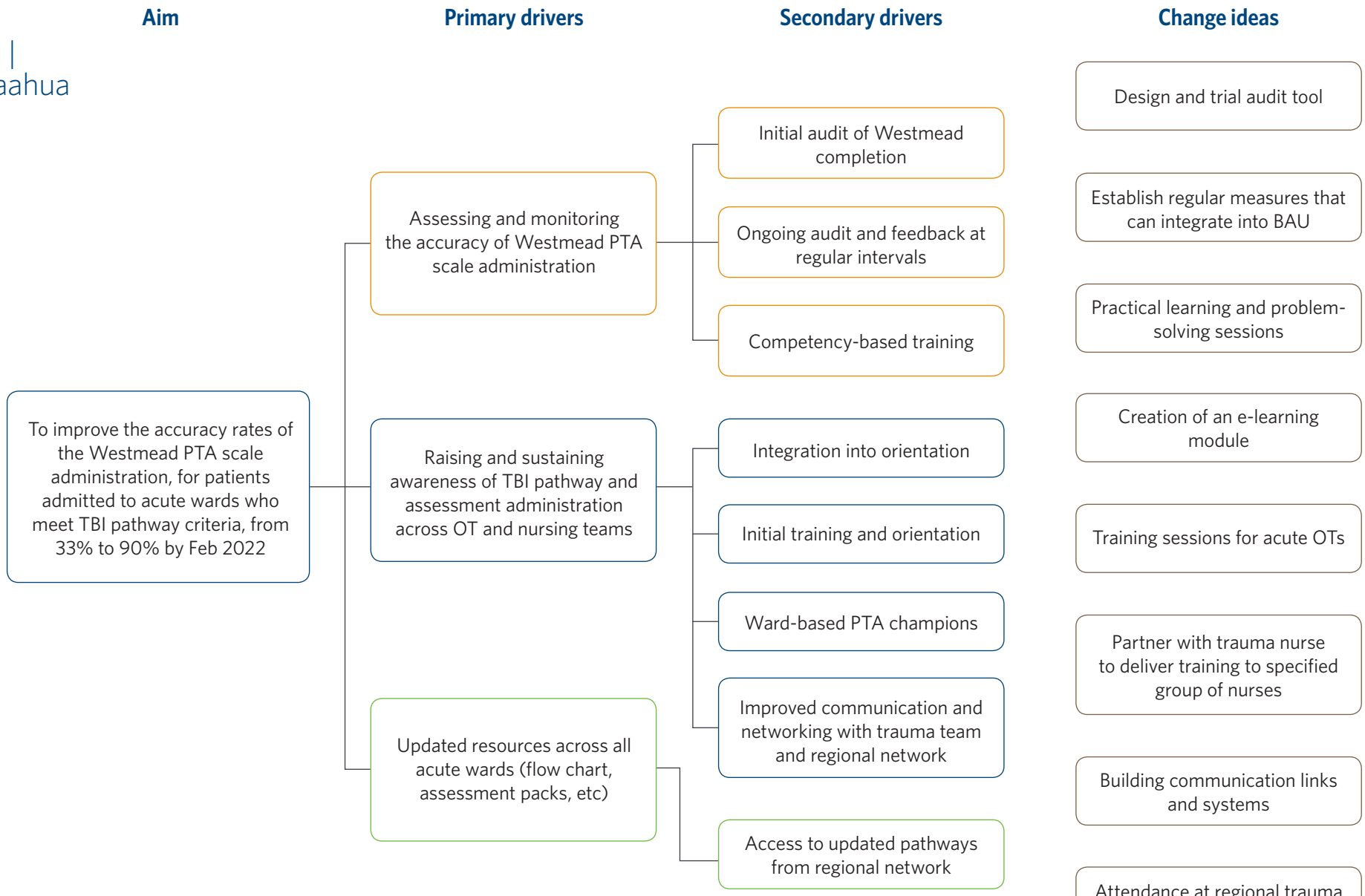
- Attendance at training sessions
- Completion of e-learning
- Availability of updated assessment tools, information and resources on each ward

Balancing measure

- Level of unmet need for occupational therapy services

Drivers of change | Ngaa tuuaahua panoni

The driver diagram outlines key drivers of change.



Note:
BAU = business as usual
OT = occupational therapist
PTA = post-traumatic amnesia
TBI = traumatic brain injury

What we did | Taa maatou i mahi

Were there any ethical considerations to be aware of?

PTA assessment is part of routine clinical assessment for people with suspected brain injuries. However, the project's focus on this assessment introduced the potential for unmet need in other services. The team addressed this ethical consideration by including the level of unmet need as a balancing measure.

What aspects of the project were co-designed with consumers? How did you involve consumers in co-design? What processes did you use?

The team struggled to include consumers in the project, as the people affected by PTA have acute brain injuries and are unlikely to recall the experience of PTA assessment in the acute phase of recovery. One consumer who initially agreed to provide us with qualitative data about her experience of acute services post discharge later declined.

The team encouraged staff to involve whaanau in Westmead PTA assessment, patient treatment plans and subsequent education. We reminded staff that, because we completed audits retrospectively, the clinician would have to clearly document within the notes that whaanau involvement occurred. If no documented evidence of whaanau involvement was present, we presumed that it did not occur.

We found out more about consumer experience of services as a whole through summaries of the findings of Te Whatu Ora Counties Manukau patient experience survey. The survey information was filtered to evaluate the consumer experiences of people with neurological conditions in particular, to better inform the project.

What quality improvement tools did you use, that you would recommend?

- Process mapping is essential to understand your current state. It is a very good reflective tool for identifying the quick wins and/or the place to start.
- We learned to build a spreadsheet to enable effective data collection. This is an invaluable skill for quickly and accurately visualising the change that has occurred and presenting quantitative data to stakeholders.
- Driver diagrams were useful in breaking down a large aim into manageable pieces and recognising/tracking outcomes as they were completed. This provided a sense of progress through the project.
- Using plan-do-study-act (PDSA) cycles allowed us to test change ideas as a team.
- We used the health equity assessment tool (HEAT) to reflect on our current and perceived inequities.

What changes did you test that worked?

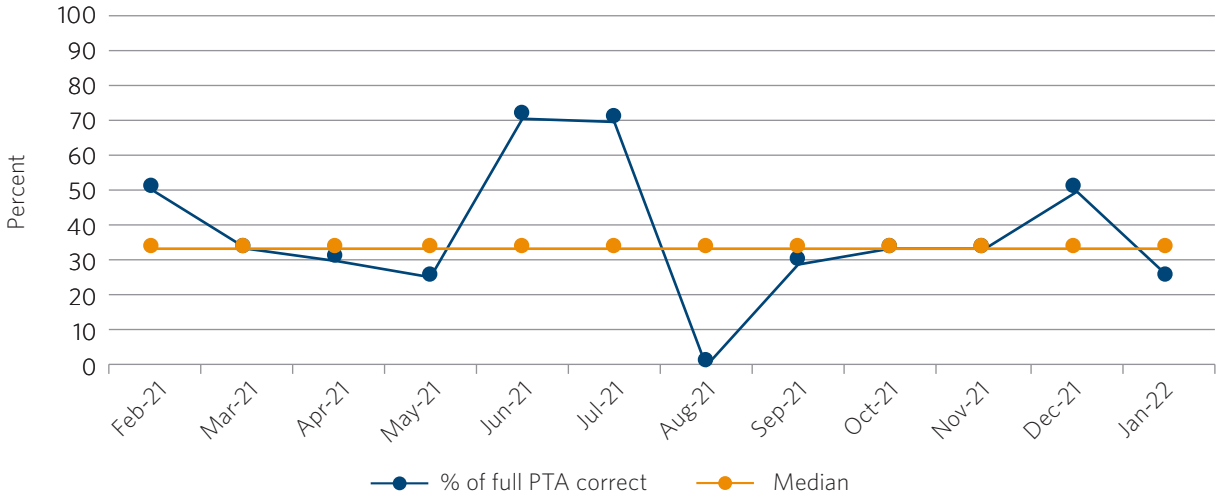
- We designed and trialled a clinical audit tool that was based originally on a documentation audit. As a result, each audit became a comprehensive assessment of both qualitative and quantitative data.
- We created an e-learning module to inform clinicians about how to administer the Westmead PTA assessment and other aspects of treatment to consider in the early stages of recovery.
- Occupational therapists working in acute wards had training sessions with subject matter experts. In this way, all staff involved in the auditing process received the same level of instruction before any auditing began.
- We engaged a team of nursing PTA champions on each of the wards. These nurses are responsible for the identification of patients and the assessment of the Westmead PTA, to ensure the skills learnt by a few are used often.
- Because this bedside assessment is paper-based, at times resource materials can be lost or damaged. When resources were not readily available, assessments were missed. We completed an audit of all resource files across the acute wards and removed irrelevant materials. We also updated all electronic documents to a high standard, which included modifying forms and adapting them to improve the accuracy of documentation and assessment.

The results | Ngaa hua

What did the outcome measures show?

Our measurement showed that throughout the project, staff performed about one in three full PTA assessments correctly. This overall accuracy rate did not change significantly over the course of the project (Figure 1). However, we did notice that over time each assessment contained fewer errors because the project was drawing attention to the accuracy of assessment and had introduced updated resources. The Westmead assessment is performed over several days, often requiring several clinicians to be involved. This increases the likelihood of an error occurring over the duration of the assessment.

Figure 1: Percentage of indicated Westmead PTA assessments administered correctly, February 2021–January 2022



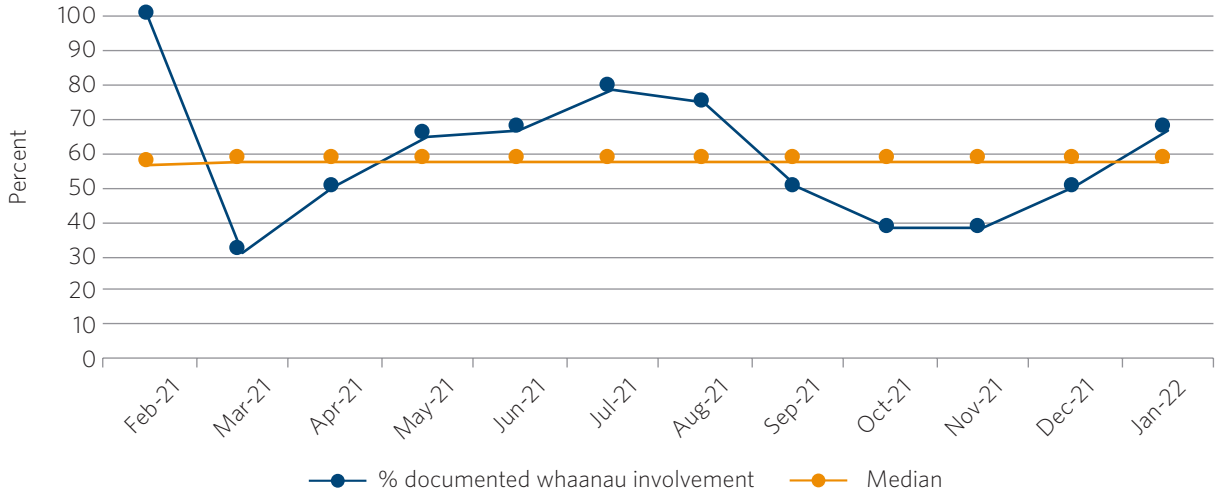
Source: Counties Manukau data collection.

Abbreviated PTA assessments are administered correctly more frequently, in two out of every three assessments. This assessment is simpler and performed over a shorter period so a single assessor is more likely to complete the whole assessment.

What did the equity measures show?

Whaanau involvement in PTA assessments was severely impacted by the hospital's visitor restrictions during the COVID-19 Delta wave. This impact is seen in the decline in whaanau involvement from July to November 2021 (Figure 2).

Figure 2: Percentage of PTA assessments with documented whaanau involvement, February 2021–January 2022



Source: Counties Manukau data collection.

There were no obvious inequities between ethnicities in the accuracy of PTA assessments. The proportion of people assessed who identified as Maaori increased from 15 percent in the baseline data collection period to 21 percent. Our modified approach to assessment eliminated the barriers related to language and disability in 98 percent of all cases audited.

What did the process measures show?

A total of 95 percent of the acute occupational therapy team attended a training session with subject matter experts. Feedback from people who attended the training showed that their knowledge had increased.

I had never previously understood what was meant by duration of PTA. Now I know how to calculate it correctly. ***Senior occupational therapist***

Before this session I had not thought about the long-term impact for patients if they go undetected and continue to suffer symptoms of concussion at home. ***New graduate occupational therapist***

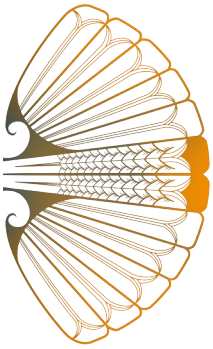
Were there any unintended consequences such as unexpected benefits, problems or costs associated with this project?

The Delta and Omicron waves of the COVID-19 pandemic had a major impact on Counties Manukau. During this time staff were redeployed, training opportunities reduced and there was a directive to stop all non-clinical work. This meant that the project's progress was slower than anticipated, and some change ideas, such as the development of an e-learning module, were not implemented until after the collaborative had ended. Data collection for this project was made more difficult by paper-based notes and the need to request hard copies of clinical records to audit.

Is there evidence that the knowledge of quality improvement science in the team or in the wider organisation improved?

We are now much more confident in our understanding of how to assess a process properly and identify the potential for change. An approach that avoids making assumptions and jumping straight to solutions is paramount to success. We have now actively engaged in other improvement projects and know to ask 'Why?'. It is essential to analyse the true problem, as not all change is good change. Doing the quality improvement (QI) work properly first before the change increases the likelihood of a successful outcome. Our understanding of which QI tools to use under different circumstances has helped us to use these tools elsewhere.

Correct implementation of QI work leads to more efficient and sustainable change. Where people are unwilling to put the time in to understanding the problem properly, they will inevitably spend more time and energy in the future on repeating the same mistakes or focusing on an area where limited improvement can be made.



Post project implementation and sustainability | Te whakaritenga me te whakapuumautanga

Have the successful changes been embedded into day-to-day practice? How have you managed this?

The e-learning module, launched in November 2022 on the Ko Awatea learning platform, will be rolled out to Counties Manukau staff. Other education is ongoing for nursing champions on the wards, and a train-the-trainer model is in place. Education for occupational therapists is ongoing.

How did you communicate your progress and results to others?

Five teams across Aotearoa New Zealand are now testing work begun during this project, such as the e-learning module, as part of the Health Quality & Safety Commission's serious traumatic brain injury rehabilitation collaborative.

Within Counties Manukau, the project has been presented at allied health team meetings and the allied health grand round. The team is also communicating the findings to hospital leadership in written reports.

Summary and discussion | Te whakaraapopoto me te matapakinga

What were the lessons learned?

- What seemed a small project at the start was not 'small' at all!
- Spend time really figuring out the problem so you are sure that you are addressing the right issue through the improvement work.
- We needed a larger team with members from a wide range of disciplines.
- We needed a 'sponsor' within surgical services, which was the clinical area undertaking most of the improvement activity.
- We learned many practical quality improvement skills that we will continue to put into practice.

What are the key steps that a team somewhere else needs to do if they want to take on a similar project?

1. **Assess where your service is currently at with PTA assessment**. Ask yourselves, does your service have a problem with accurately diagnosing post-traumatic amnesia? Do you believe that you could improve consumer experience? Is your assessment currently not capturing people who are therefore missing out on the follow-up they need?
2. **Review current aspects of the process such as resources, forms and patient education**. Identify where resources are kept and whether they are accessible for those who need to use them.
3. **Survey staff on their confidence in assessing TBI** and to learn more about current practice. Are all wards following the same process or guideline? Does one area differ from the others in terms of how it meets the needs of people suspected of a traumatic brain injury or concussion?
4. **Define your problem**. Be honest about current processes. If baseline data illustrates room for improvement, own it and start there. Create a process map of your current state, make no assumptions and set no expectations.
5. **Gather a team of clinicians across disciplines** who are willing to explore the potential for change. Gain buy-in from key stakeholders with the power to influence change.
6. Don't reinvent the wheel; **network with specialists in the field** to determine what is possible given your unique setting. Borrow ideas from others with pride and give credit to them.
7. **Start small to test change ideas with PDSA cycles**. Abandon, adapt and change what you thought you would do if you find evidence that your original change idea no longer makes sense.
8. **Communicate regularly about both your successes and your challenges** to maintain the interest of those involved. Celebrate the small wins in the journey with everyone.
9. **Plan, divide the workload and set deadlines for completion**. Make QI work a priority.

Are there any future steps or ongoing work that you are intending to continue with on this project topic?

- Test our e-learning across a group of nurse champions, receive feedback and alter as required.
- Release the e-learning to a wider group and incorporate it into orientation programmes.
- Continue auditing to establish if the project is making improvements.
- Share e-learning with interested parties.
- Initiate café-style learning sessions for nurse champions as able.
- Create an electronic record of assessment.

The team | Te roopuu

- Natasha Jones, section head – Acute Occupational Therapy
- Jonathan Armstrong, clinical director for allied health
- Helena Lister, occupational therapist, National Burns Unit

Do you have any teamwork lessons or tips that you wish to share?

A team of like-minded individuals may achieve the intended goal. But a team of members with varying perspectives will challenge your own thinking and, as a result, is more likely to create more sustainable change, as the ideas will have been rigorously tried and tested before you implement them.

Appendix 1: Measures | Aapitihanga 1: Ngaa ine

Measure name	Description	Collection method	Collection frequency
Percentage of Westmead PTA assessments completed accurately	**Numerator**: Number of cases where the WPTAS was completed accurately **Denominator**: All cases where WPTAS administration was indicated	Clinical audit	Monthly
Percentage of assessments with whaanau involvement documented in the clinical record	**Numerator**: Assessments where whaanau involvement was documented **Denominator**: Total number of assessments	Clinical audit	Monthly
Where English was a second language, percentage of cases where an interpreter was used	**Numerator**: Number of assessments where an interpreter was used **Denominator**: Total number of cases where English was a second language	Clinical audit	Monthly
Number of occupational therapy staff who attended training	Count of people who attended training	Attendance lists	At each training session

Glossary | Te kuputaka

Abbreviated Westmead PTA scale (A-WPTAS): A bedside test administered over 4 hours validated to screen for post-traumatic amnesia within 24 hours of injury.

Balancing measure: Determines whether changes made to one part of the system are causing any unintended consequences in another part of the system.

Driver diagram: A visual display of a team's theory of what contributes to the achievement of the project's aim.

Equity measure: Measures that have an equity focus.

Outcome measure: Determines the extent to which the aim has been achieved.

Post traumatic amnesia (PTA): A transient state of altered brain function following a traumatic brain injury, causing memory loss, disorientation and behavioural changes.

Process mapping: Creates a visual diagram of the steps involved in a process. It helps a team to understand their current system better and makes it easier to see where opportunities for improvement are.

Process measure: Determines the degree to which processes or change ideas have been implemented.

Westmead PTA scale (WPTAS): A bedside test administered over at least 3 days validated to determine the duration of post-traumatic amnesia.

Other resources

Traumatic Brain Injury Toolkit | National Trauma Network (majortrauma.nz)

Course: Post-traumatic amnesia (PTA) (koawatealearn.co.nz)

Westmead audit form (2021) – this can be downloaded from: www.hqsc.govt.nz/resource-library/Te-Whatu-Ora-Counties-Manukau-case-study

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