Trauma rehabilitation

Whakaoranga kohuki

Te Whatu Ora Taranaki case study: Improving discharge processes after traumatic brain injury

He mātai tā Te Whatu Ora Taranaki: Te whakapai ake i ngā tukanga wewete whaimuri i te wharanga tūkino ā-roro

Te Hononga Whētuki ā-Motu National Trauma Network

Te Whatu Ora Health New Zealand Taranaki

Te Kāwanatanga o Aotearoa New Zealand Government

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

Te Whatu Ora
Health New Zealand
Taranaki

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.

Overview | Tirohanga whānui

Te Whatu Ora Taranaki identified that many people were not receiving the required discharge information or referrals for follow-up when they were discharged from hospital following a traumatic brain injury (TBI). Staff had low levels of confidence in referral processes and the educational resources for patients and whānau were out of date. They designed an information booklet for patients and education for staff, resulting in an increase in the proportion of people leaving hospital with all required information and referrals.

Background and context | Kōrero o mua me te horopaki

Taranaki Base Hospital admits approximately 29 people per year who have experienced TBI. Approximately 20 percent of those are Māori, which is representative of the population make-up of the region.

Diagnosing the problem | Te tātari raru

The problem

The Te Whatu Ora Taranaki mission is to improve, promote, protect and care for the health and wellbeing of the people of Taranaki. The team identified that the current pathway for discharging people after TBI (TBI pathway) was not being followed and patients were not always receiving the required referrals for follow-up or appropriate discharge information.

How did you know this was a problem? What data did you have to describe this problem?

Data was collected about the people admitted to Taranaki Base Hospital following TBI between 2019 and 2021. Patient demographics, clinical records, ward and multidisciplinary team processes and discharge processes were audited to identify the percentage of the TBI pathway that was complete. Fishbone analysis and process mapping were used to understand the problem (see Appendix 1 for fishbone diagram).

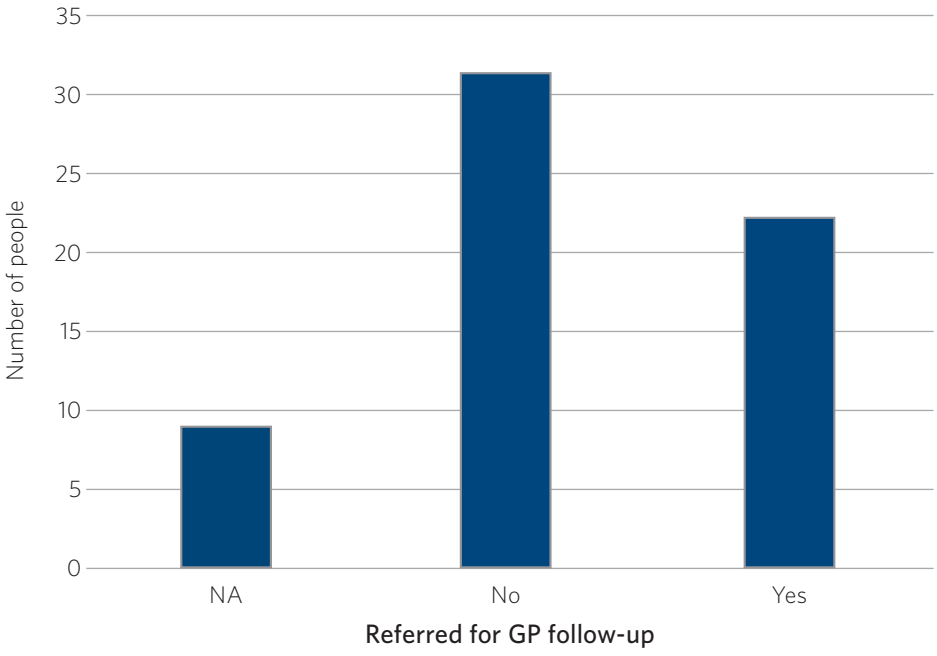
For the discharge advice section to be considered completed, it was essential that either verbal or written discharge advice was given. An ACC concussion or inpatient rehabilitation referral must have been completed and a general practitioner (GP) follow-up requested. Overall, 17 percent of discharges were considered to have been completed correctly. For Māori, none of the discharges included all three of the required components of the discharge advice section.

A staff survey showed that 63 percent of staff were not aware of the processes required for ACC concussion referrals. Staff responding to the survey reported that they provided patients with both verbal and written advice at discharge, but that the printed materials for patient education were both poor quality and out of date.

What was the baseline data?

Of the 53 people who required GP follow-up, 22 (42 percent) had been referred to their GP (Figure 1).

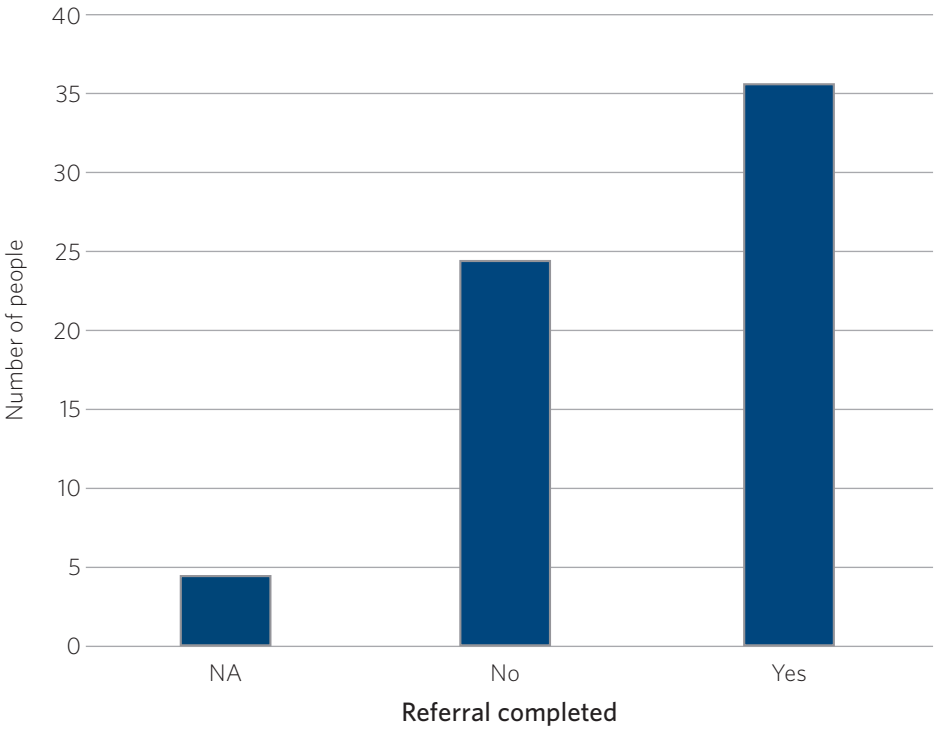
Figure 1: People referred for GP follow-up at discharge, 2019–21



Source: Te Whatu Ora Taranaki data collection.

Of the 60 people who required referrals for ACC concussion services or inpatient rehabilitation prior to discharge, 36 (60 percent) had been referred (Figure 2).

Figure 2: Referrals completed for ACC concussion services or inpatient rehabilitation, 2019–21



Source: Te Whatu Ora Taranaki data collection.

The aim | Te whāinga

The project aim was to increase the percentage of Taranaki Base Hospital staff adherence to the TBI pathway discharge advice section for people diagnosed with moderate to severe TBI (Injury Severity Score 6–11 and Injury Severity Score 12 and above), aged 16 and above, from 17 percent to 58 percent by March 2022 to promote better outcomes for patients.

The measures | Ngā ine

See Appendix 2 for a detailed description of the measures.

Outcome measure:

- The percentage of people discharged where of all parts of the discharge process were complete: verbal or written advice was provided, an ACC concussion referral completed, and GP follow-up requested.

Equity measure:

- The percentage of Māori discharged where of all parts of the discharge process were complete: verbal or written advice was provided, an ACC concussion referral completed, and GP follow-up requested.

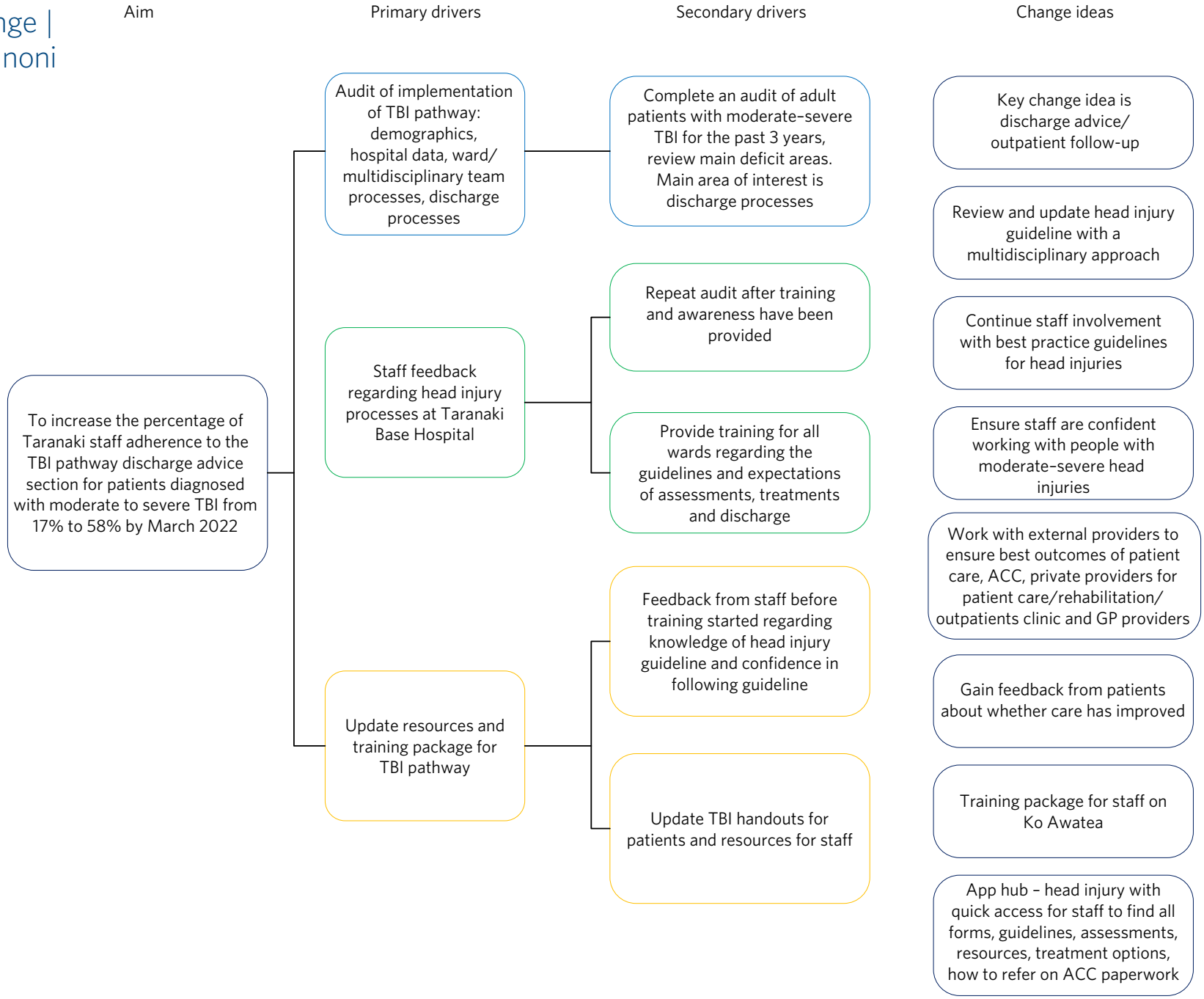
Process measure:

- A survey to determine hospital clinicians' self-reported knowledge about the TBI pathway.

Balancing measures:

- The change in staff workload when all parts of the discharge process are complete.
- Length of hospital stay after TBI.
- Number of people who re-present to the emergency department within 30 days of discharge.
- Number of referrals sent to ACC/inpatient rehabilitation/GP.

Drivers of change | Ngā tūāhua panoni



What we did | Tā mātou i mahi

Were there any ethical considerations to be aware of?

The baseline data collection showed there was an inequity in referral of Māori to concussion services. Awareness of this inequity informed education sessions provided to staff about the ACC referral process and the TBI pathway.

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 contacted five people who had been discharged with the discharge booklet by phone to better understand the consumer experience after discharge. Four people whose whānau had previously experienced TBI were also asked for feedback on the discharge booklet.

The hospital's Māori liaison also gave feedback to the team about the te reo Māori used in the discharge booklet.

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

- Process mapping and fishbone analysis were used to diagnose the problem.
- Driver diagrams and plan–do–study–act (PDSA) cycles were used to create and test change ideas.
- Staff surveys were conducted.
- Run charts were helpful because they showed progress and the effects of changes.

What changes did you test that worked?

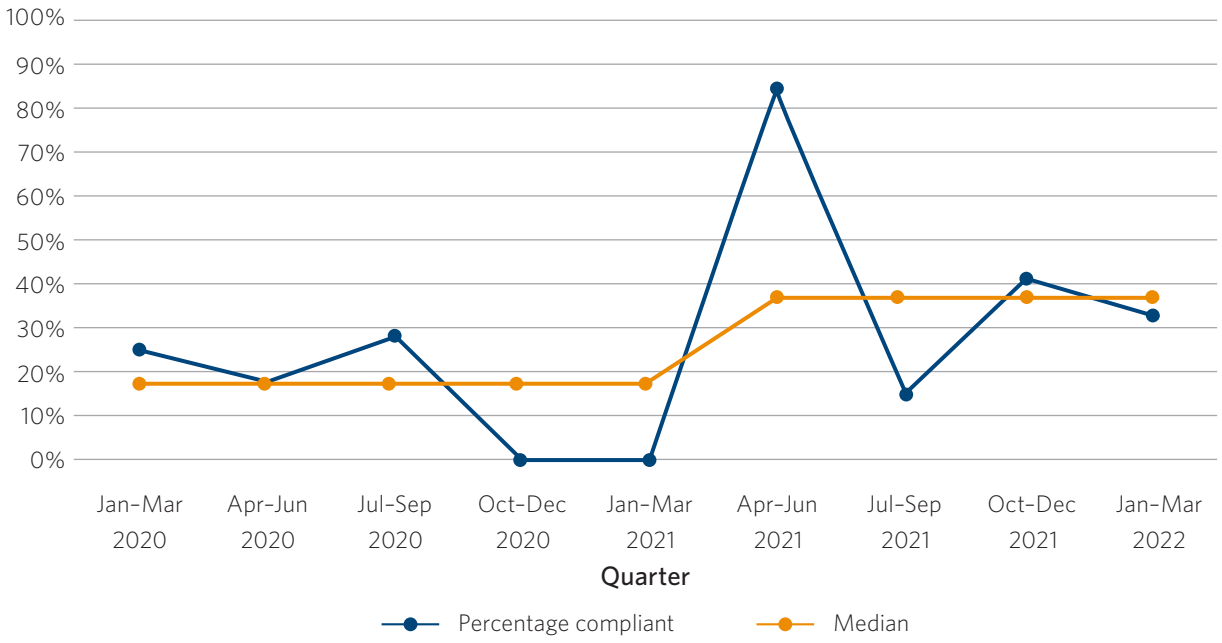
- A discharge booklet was created and used for people being discharged from hospital following TBI. The discharge booklet gives people information about the injury they have sustained. It describes some common symptoms people may experience after TBI and talks about rehabilitation and recovery after injury. The discharge booklet gives advice for managing pain, fatigue and stress after TBI and describes how some people experience changes in behaviour, mood and personality. It contains resources about returning to work and normal activities. In the booklet there is space to write down the names and phone numbers of important contacts, for later reference. Headings are in te reo Māori and English.
- Education sessions were run for medical, allied health and nursing staff. The education focused on the correct processes for ACC referrals to concussion services, as well as how the discharge booklet can be used to provide verbal and written information to patients and whānau. It highlighted the existing inequity in referral of Māori to concussion services.
- Regular training was provided to junior medical staff. This training focused on things that were identified as often being missed in an audit of discharge summaries as well as the referrals and follow-up that were often needed after a head injury.

The results | Ngā hua

What outcome measures improved?

The rate of compliance with the discharge advice section of the TBI pathway increased from a median of 17 percent during the period of baseline data collection (January 2020–March 2021) to a median of 36 percent during the project (April 2021–March 2022). (Figure 3). Ongoing data collection will determine whether this increase is sustained or increases further with the regular training.

Figure 3: Rate of compliance with the TBI pathway discharge advice section, January–March 2020 quarter to January–March 2022 quarter



Source: Te Whatu Ora Taranaki data collection.

What equity measures improved?

For Māori, the median rate of compliance with the discharge advice section of the TBI pathway increased from 0 percent during the period of baseline data collection (January 2020–March 2021) to a median of 30 percent during the project (April 2021–March 2022).

What process measures improved?

Staff knowledge and confidence about concussion processes, referrals, discharge summaries and patient and whānau education improved. Qualitative feedback about the updated discharge booklet was positive from both consumers and staff. Consumers reported that they had used the information in the discharge booklet to refer to later.

Staff feedback

'The content [of the discharge booklet] is fantastic. Some of the information is transferable to other areas as we update/make more handouts for other conditions.'

'It is a great resource to help reinforce the information that is often given verbally and something to refer back to when a patient or family is unsure.'

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

The workload went up when the discharge process was followed, but therapists reported that they found it satisfying knowing they were providing people with education about their condition.

Staff reported they run out of booklets at one point and so more were printed. They also reported lack of awareness of where the booklets were stored. Both issues were addressed.

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

The team has used process mapping in other improvement work since this project was undertaken, as well as using PDSA cycles to see the effects of changes as they are implemented. The team has learned how to engage stakeholders to create sustainable change.

Post project implementation and sustainability | Te whakaritenga me te whakapūmautanga

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

Core staff continue to monitor concussion referrals, train new staff and audit whether education and training are effective.

How did you communicate your progress and results to others?

- The project was presented at the hospital's trauma committee.
- The results, including a updated run chart, will be presented at surgical and allied health meetings.

Summary and discussion | Te whakarāpopoto me te matapakinga

What were the lessons learned?

- Discovering and utilising the each team members skills/assets in the project work.
- Don't make the project too big; start small.
- Working in a small hospital made influencing people easier.
- Sweets bribery helped in training sessions!

What are the key steps that a team somewhere else should take to implement this in their own area?

- Plan well.
- Involve core staff.
- Start small and identify the main problem clearly (the problem may not be what you think it is).
- PDSA cycles are a great way to follow the project's progress.
- Sustainable change requires a team approach.

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

- The project team is continuing to work together to update the hospital's clinical guideline for TBI to improve the discharge process further.
- Education and training for staff are ongoing.
- Taranaki Base Hospital is actively participating in new ACC processes being trialled for direct referrals to concussion services.

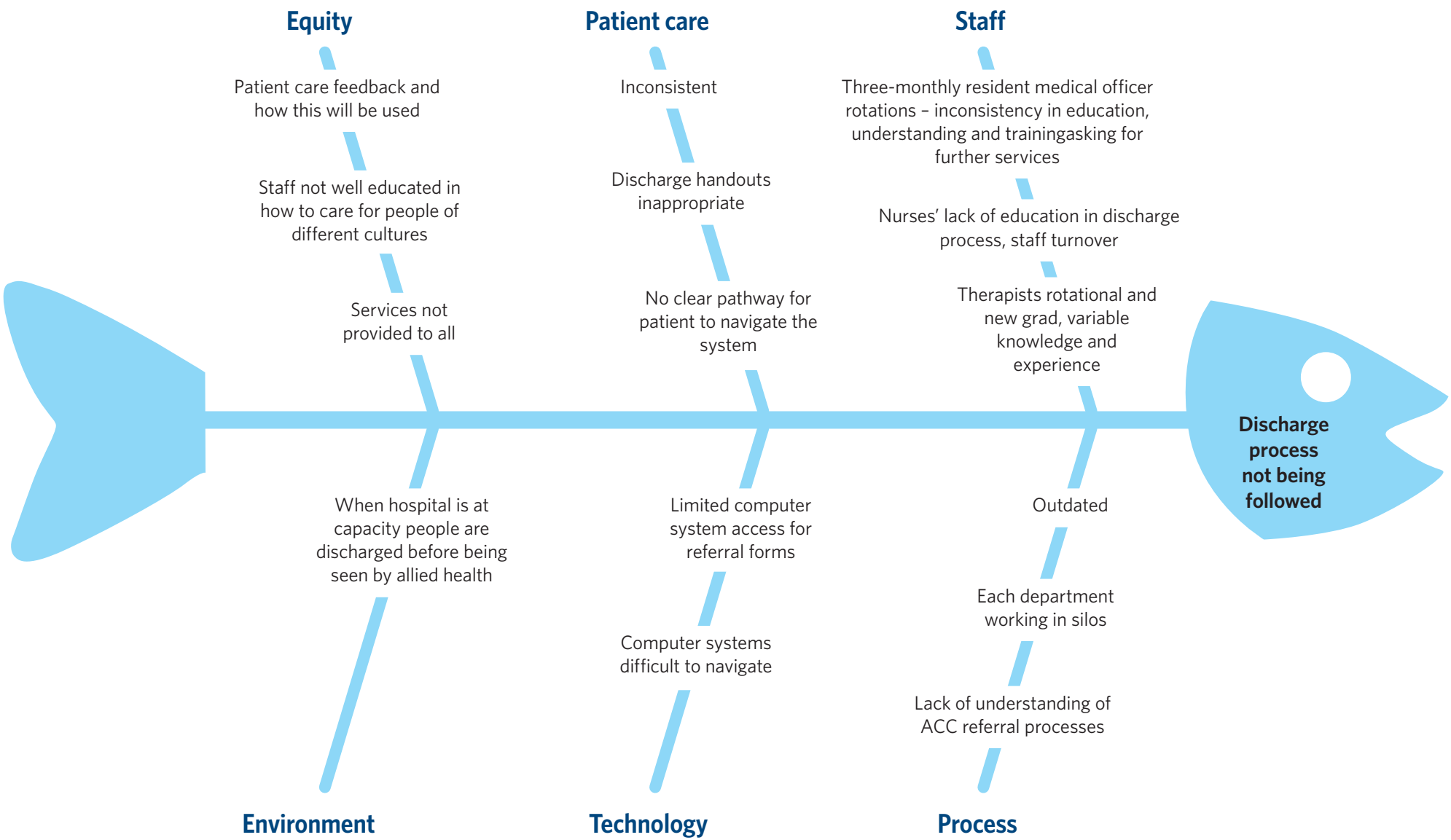
The team | Te rōpū

- Karien Visagie – occupational therapy team lead
- Alex Keegan – trauma nurse specialist
- Rachel Kalin – physiotherapist

The team would like to acknowledge the following:

- Midland trauma registry
- Taranaki Base Hospital medical records department
- Staff who attended training and were actively involved in improving the service
- The Health Quality & Safety Commission team for providing project support
- Katy Sheffield for supporting the project
- Professional leads and managers for supporting staff to take part in the project.

Appendix 1: Fishbone diagram | Āpitihanga 1: Hoahoa tuaika



Appendix 2: Measures | Āpitihanga: Ngā ine

Measure name	Description	Collection method	Collection frequency
The percentage of people discharged where of all parts of the discharge process were complete.	**Numerator**: The number of people discharged following TBI where verbal or written advice was provided, an ACC concussion referral completed and GP follow-up requested **Denominator**: The number of people discharged following TBI	Review of clinical notes and discharge summaries	Monthly
Staff knowledge and understanding of TBI discharge processes	Staff confidence rated from 0 to 10 in discharge processes, and qualitative feedback about areas for improvement	SurveyMonkey	Before and after training

Other resources

You can view the discharge booklet (PDF) at www.hqsc.govt.nz/resource-library/trauma-Taranaki

Glossary | Te kuputaka

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.

Ishikawa/fishbone analysis: A tool used in quality improvement to analyse the problem by identifying potential causes. Also known as a cause-and-effect diagram.

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

Process mapping: 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.

Run chart: Visual representation of data on a graph, used to assess the impact of changes over time.

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