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ABI REHABILITATION

TRAUMATIC BRAIN INJURY RESIDENTIAL REHABILITATION (TBIRR)

2018 *Annual Report*

Reporting period:

1 July 2017 to 30 June 2018

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ASPIRE to Excellence® carf ACCREDITED QUALITY PROVEN

Contents

Introduction

The annual report provides an excellent opportunity to stop and reflect on the past twelve months. Although, for reporting purposes, there is a need to look at collective data and analyse trends, what is vital to remember is the people. The individual clients and their families that have passed through the service and the staff members involved in their rehabilitation. There have been 258 individuals enter either the Auckland or Wellington ABI Rehabilitation service over the past 12 months. Although all presenting, each one of these with a significant brain injury, are unique in their presentation and their needs. For some, their time with ABI has been brief. For others, their stay has extended over many months.

This report covers information under the Traumatic Brain Injury Residential Rehabilitation (TBIRR) contract from ABI Rehabilitation (for both Auckland and Wellington facilities) for the time period of 1st July 2017 to 30th June 2018.

The report covers data that is contractually mandated, and more importantly, shows what we have achieved over the past year. The report also includes client stories outlying the challenges they faced and their amazing recovery journeys. It is the intent of this report to strongly reflect the vision and mission of ABI Rehabilitation.

Should you require more detailed information about the services provided at ABI Rehabilitation or the lay out of the facilities please refer to a past year's report, visit the website www.abi-rehab.co.nz or reach out to any of the report authors.

ABI Rehabilitation's Vision

Within a person-centered philosophy, in partnership with its stakeholders, ABI is a national leader in acute and residential neuro-rehabilitation, and a strong community provider, with a local and international reputation for excellence in service provision, and a solid commitment to education and research.

Our Mission

Our hallmarks are service quality, innovation and collaboration.

We strive to serve clients and families-whānau as partners, at the centre of the rehabilitation journey.

We challenge ourselves daily to be leaders in rehabilitation – not for self-interest but to better serve those who have a need, and the right to access exemplary services.

The Year in Review

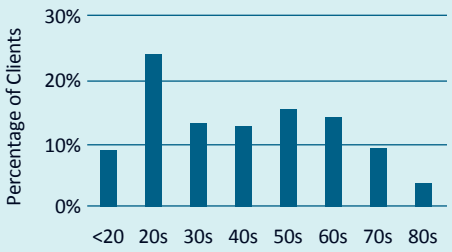
QUICK FACTS ABOUT THE TBIRR IN 2017-2018

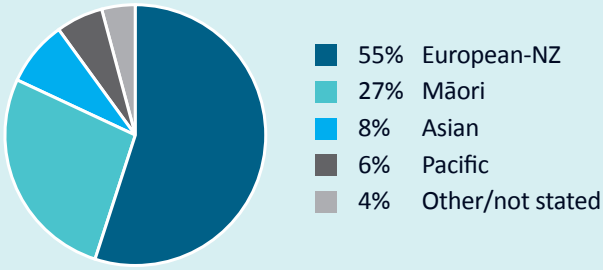
Who are our Clients?

258 CLIENTS SERVED

177	81
IN AUCKLAND	IN WELLINGTON

Average Age = 44.4 years old
Range = 16-92 years old

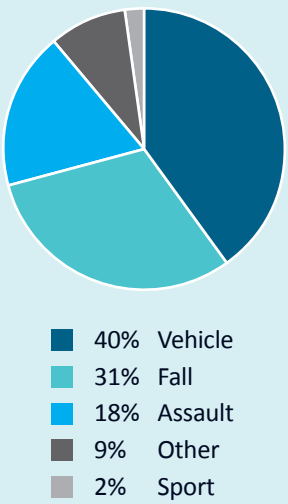




About their Injuries

99% OF CLIENTS HAD A TRAUMATIC BRAIN INJURY

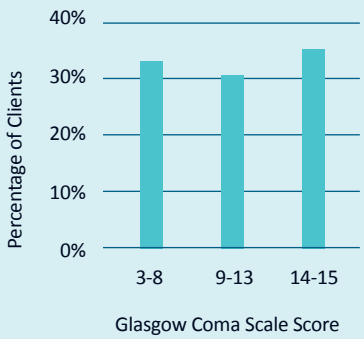
TBIs were most often due to car accidents and falls.



Average Glasgow Coma Scale score in Emergency Department:

10.3

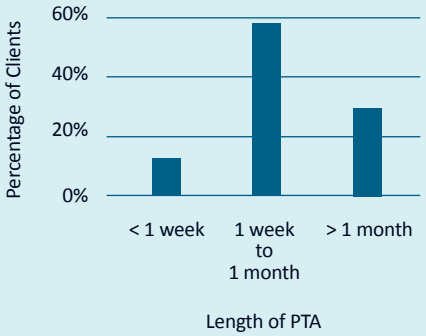
(range: 3-15)

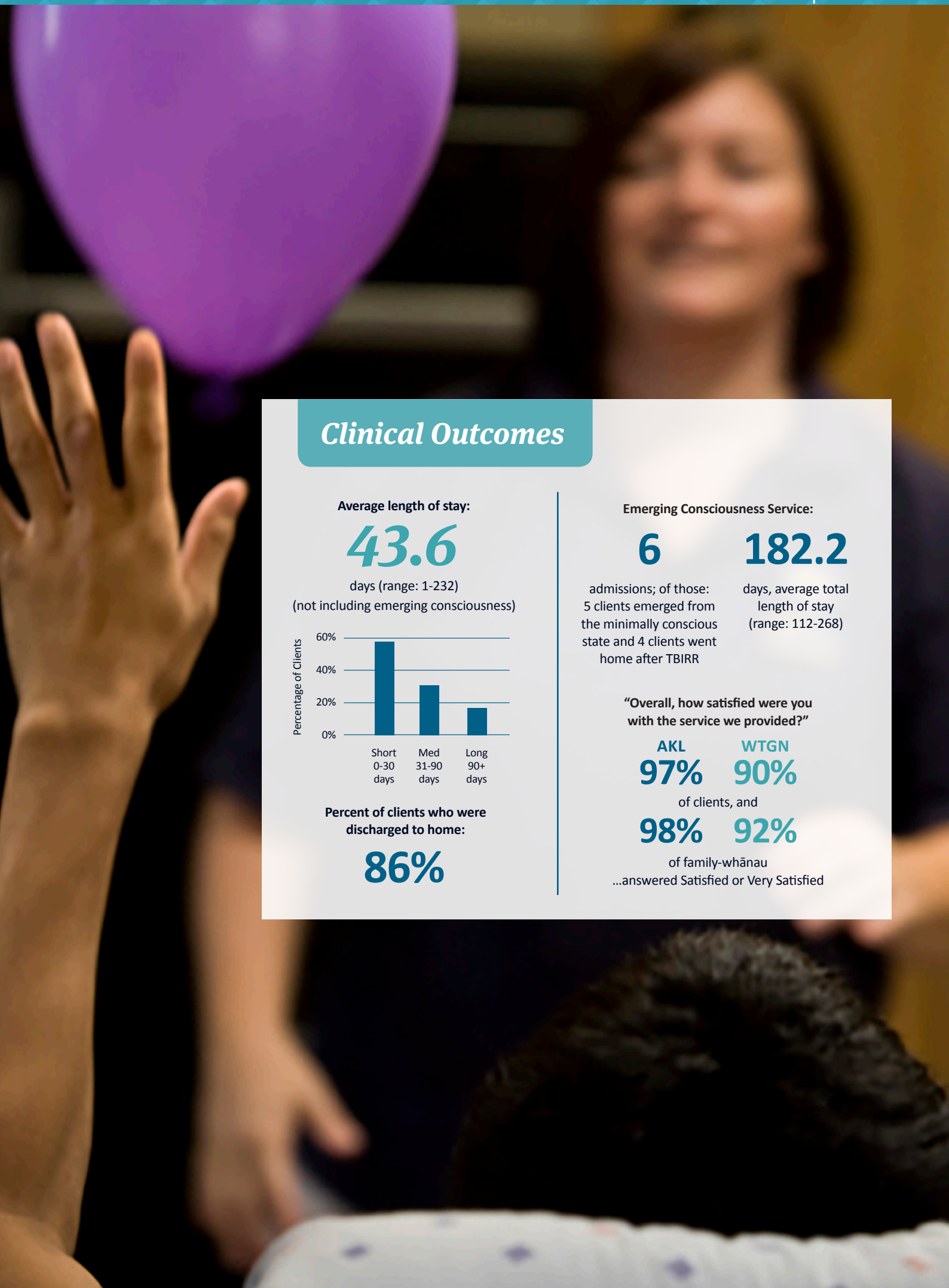


Average duration of post-traumatic amnesia:

26.0

days (range: 1-112)





Clinical Outcomes

Average length of stay:

43.6

days (range: 1-232)
(not including emerging consciousness)

Percent of clients who were discharged to home:

86%

Emerging Consciousness Service:

6

admissions; of those:
5 clients emerged from the minimally conscious state and 4 clients went home after TBIRR

182.2

days, average total length of stay (range: 112-268)

"Overall, how satisfied were you with the service we provided?"

AKL	WTGN
97%	90%

of clients, and

98%	92%

of family-whānau
...answered Satisfied or Very Satisfied

Key Achievements for this Year

BEING A PART OF OUR COMMUNITY

Brain Day

This fun community day of neuroscience, was recently held at the University of Auckland. The 2018 theme was 'The Amazing Brain: Communication, Care, and Community'.

Dr Richard Seemann, ABI Rehabilitation's Medical Director, participated in the midday science panel on 'Traumatic brain injury: research pathways to the future'. Dr Seemann, and three other scientists/specialists, spoke about some of the latest research regarding prevention, diagnosis, treatment, and recovery of traumatic brain injury and concussion. The session was very well-attended and the panelists took many questions from the audience.

ABI Rehabilitation also had a stand in the Community Expo section of Brain Day, along with many of the other organisations that are working toward neurological advances in Auckland. It was a great opportunity to meet each other as well as members of the public. Together we can raise awareness on the progress and benefits of brain research.

TV Appearances

ABI was featured in 'Wait for me Hollywood', a documentary on Attitude TV with one of our clients interviewed and our staff on TV.

RugbySmart

Dr. Richard Seemann presented an educational segment on concussion for RugbySmart 2018 (the injury-prevention course every coach and referee must attend every year).

CONTINUOUS QUALITY IMPROVEMENT

Medical Follow Up

There has been significant work on the post-discharge medical follow-ups with the plan to have the community Training for Independence (TI) keyworker play a key role. The implementation has been limited to implement due to resources however, the plan is to re-establish these later this year.

Time Target

The time and attendance system is now fully implemented across the organisation. Staff are able to self-manage their time sheets and leave electronically. More importantly, rostering is now fully electronic with managers signing off on exception reports rather than the time consuming job of signing off time sheets.

Client Management System (CMS)

This key resource has continued to undergo quality improvements over the past year. Although there has been a strong focus on enhancements to the community functionality (which the inpatient services will also profit from e.g. report creation, dashboards. Also there has been improvement with handover reports and lab results. Further planned developments include a visual care plan and improved automation of the discharge reports.

PATHWAYS WORK

Making a Difference Through Collective Impact

The TBI Whole of Pathways Collaborative was established around 2 years ago. It includes providers, consumers, family members, funders and academics with membership of about 25 participants. Using collective impact as a framework there has been the ability to solve difficult and challenging issues that negatively affect adult clients with moderate-severe TBIs. Three work-streams (with sub-groups) were established to address priorities for change. ABI rehabilitation have been heavily involved in these work-streams throughout.

Some of the outcomes have included:

The Whole Pathways TBI Project (the Collaborative) was proposed by ABI several years ago and established by ACC in collaboration with providers, consumers including Māori, families-whānau, and DHBs in the Northern Region in 2015. ACC has provided substantial administrative and leadership support to this project. ABI has been very involved in supporting it within the various working groups.

The overall objective of the Collaborative is that clients with moderate-severe TBI achieve optimal outcomes in an environment where the client, family and whānau are supported and educated, and the pathway is flexible, connected and fully coordinated. The Collaborative was ambitious in that it set out to review end-to-end the rehabilitation journey for clients with moderate to severe TBI and listen to consumers to understand the needs of their families and whānau.

It has taken a "whole of system" approach based on desired client outcomes, values and input of all stakeholders.

It is essentially a whole-system quality improvement project.

The focus over the first two years has been on three key areas.

1. How can we make the transition between different providers and services smoother for clients and whānau?
2. How can we collect good data and agree common measures of client outcomes so we all speak the same language when assessing how well we are doing?
3. How can we improve the quality and timeliness of the information about brain injury that we provide to clients and whānau?

The following ABI staff have been very involved in the Collaborative: Angela Davenport, Tony Young, Max Cavit, Allison Foster, Deb Andrews, Rachelle Bennett, Soana Foliaki. Many thanks to these people who have given 110% and contributed amazingly to the whole project alongside the other great ACC staff, clients and whānau and providers in Auckland. We have all learned to trust each other and work more closely together for the good of clients.

A special bouquet from ABI has to go to the ACC staff who have picked this up, brought us all together and led the project so amazingly well over the past two years especially Deb Anselm, Christine Howard-Brown, Phyllis Meier and Monique Tupai.

This is just the beginning. The Collaborative will eventually be rolled out across NZ and potentially involve all serious injury claims.

Results to date - Auckland Region compared to the rest of the country

Health, wellbeing and community participation with a TBI

TBI prevention and rehabilitation

Improving health outcomes for people and families with TBI

Outcomes

Safety	Effectiveness	Person-centred	Timely	Efficient	Equitable
Serious Injury Falls	FIM efficiency Length of Stay	Mayo-Portland PROMS Experience	Service transition times	Cost per claim at 1 year and 5	Ethnicity Location
14.9 per 10,000 people (equivalent to rest of NZ)	***-22% LOS*** (compared with 10% rest of NZ)		***-52%*** (6.75 days compared with 9.5 days rest of NZ)	***-47% Ax. Weekly Compensation*** (92 days compared with 151 days rest of NZ)	***27.1% Maori receiving services*** (compared with 20.6% rest of NZ)

Results from the TBI Whole of Pathways Collaborative (as at 30 November 2017) covers a 22-month period. Diagram provided by Christine Howard-Brown.

Shared Rehabilitation Plan

ABI Rehabilitation has been working with ACC and consumer focus groups on the development of a Shared Rehabilitation Plan (SRP). The SRP sits on a web-based platform that enables secure file and information sharing. Once leaving ABI Rehabilitation, seamless rehab continues in the community.

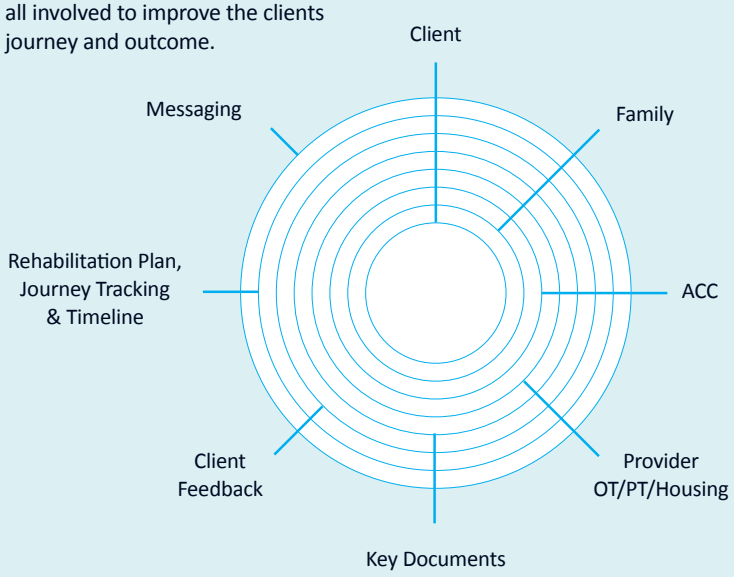
The SRP is new and being piloted with the aim of improving the communication and the sharing of the rehabilitation plan across all those that are actively involved during the community rehabilitation.

The plan is essentially the clients. The SRP focuses on what is important to them and what the individual members of the community rehabilitation teams are doing to support them. The SRP is shared for the client, involved providers and the ACC case managers to see.

The SRP also allows the client to add key information and share (communicate) with everyone currently involved in their rehabilitation.

The Shared Rehabilitation Plan Portal

Sharing and improving access for all involved to improve the clients journey and outcome.



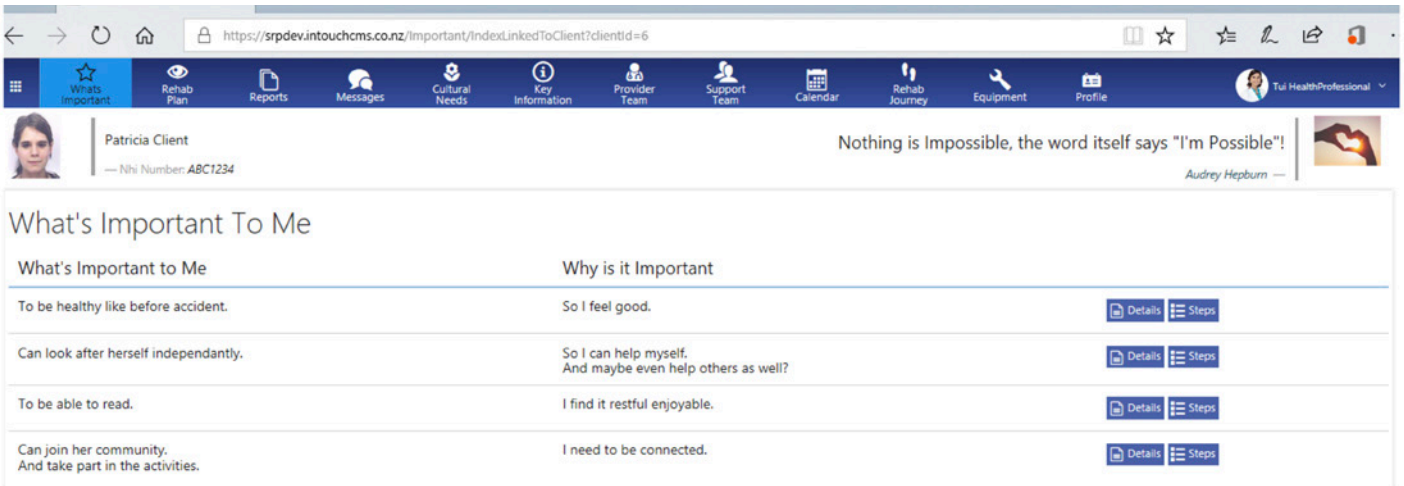
What was the problem?

Clients in the community have limited access to their rehabilitation plans. When providers change the client is often left needing to repeat their story and get re-assessed by the next person.

How will the new portal resolve this?

The cloud-based portal will allow the client to access their information, message members of the rehabilitation team and manage their relevant documentation (sharing those that they feel are important for others to know about). The rehabilitation plan and other information for the client will sit on this portal with visibility for the client (and those they share it with e.g. family, GP), the community rehabilitation team and the ACC case manager. There is also the ability to track progress and show the timeline of events from injury to today.

This portal allows greater sharing of information and the ability to view real-time rehabilitation planning. Clients have the ability to login at any time and see 'who' is working on 'what' with them. They also are able to track their progress and have real-time access to key reports and documentation relating to their injury and rehabilitation.



Resource Development

Improved resources to clients and families with greater (and free) access to the Headspace resource and online information relating to brain injury and rehabilitation.

ABI Rehabilitation worked with ACC on the development of three pathways (minimally conscious, standard and short length of stay) that set expectations for clients, families, providers and ACC when receiving TBI residential rehabilitation. Members from ABI Rehabilitation also contributed to the self-discharge information sheets that can be given to clients / families choosing to leave hospital or ABI, against rehabilitation / medical advice, following an acute brain injury.

Transition from ABI to the Community

ABI Rehabilitation worked with ACC and other providers on establishing an improved handover processes, between ABI Auckland and the community TI provider. Through removal of prior approval from the Training for Independence Service and introduction of an enhanced key worker role. This change has seen the redesign of the TI referral form and new processes put into place relating to the referral and engagement with the community provider prior to discharge. This is in a pilot phase, being trialled for clients being discharged from the Auckland ABI Rehabilitation service to the regions of Auckland or Waikato. Data thus far suggests a shift in the average days until engagement (from the community team) from 26 days to 1. The aim is to get this into the negatives, that is, all clients will have community provider engaged prior to discharge.

Client Story

The Long Road to Recovery

After the car vs cycle incident which had left me with brain bleeds – physical signs of the severe traumatic brain injury which I'd suffered – I spent days in hospital, moving from a coma in intensive care to neurology, before being discharged into the rehabilitative care of ABI, initially as an intensive inpatient before becoming a day rehabilitation client. Of those early days I have very little recollection, but my supportive family tell me I was terribly tired and, when awake, was quite confused, disoriented, and struggling to accept that I'd been seriously injured. Unable to walk straight I banged into walls, was often unable to find my room, and tore off a splinted arm cast to see what on earth was underneath.

The professional and supportive therapists – occupational, physio, and speech and language – were adept at stretching my capabilities without placing me under stress. There was ongoing medical support from specialists and the nursing team, good nutritious meals were provided, and the need for healing rest was emphasised. All set the foundation for the next stage of community-based rehabilitation and reintegration into my family life, career, and cultural communities. On leaving ABI I was at a point where I could walk in a straight line down a corridor with my eyes closed, plan and facilitate an occupational therapy session for my cohort, and chair my own discharge meeting. I was equipped both with sound knowledge of the injury's challenges, and with strategies to handle cognitive load and fatigue.

ABI was a strong and safe bridge between my former life and the present as I traveled across the fearful chasm of a severe traumatic brain injury.

INVESTING IN WHAT'S RIGHT FOR OUR CLIENTS AND FAMILIES

Kaiarahi Kaupapa Māori

All culturally designed health models are embraced alongside the Whakaritenga Mahi (Cultural services model), developed in 2011. With the appointment of Ngawairongoa Herewin into the role of Kaiarahi Kaupapa Māori there has been continued strengthening of our services to Māori.

The whānau is at the core of the rehabilitation journey offering an holistic approach using the metaphor of a korowai (feather cloak) in a wrap around service that provides the tangata whaiora (client) and whānau security, saftey, education, warmth and imput.

Wairua (spiritual) wellness is fundamental. Hinengaro (mental, emotional) wellness is intrinsically linked to wairua. When trauma to the brain has occured, these two energies are disconnected creating a total cultural embalance and cultural healing is needed.

Over the past year there has been increased use of the Te Waka Kuaka assessment / outcome measure. This is measure, developed by Dr H Elder, is a validated tool to assist in assessing the cultural needs of Māori clients and whānau with traumatic brain injury (TBI). Te Waka Kuaka brings the whānau and health worker knowledge, skills and feelings together to assist the rehabilitation partnership.

Reconnecting the client to their Māori world is embraced using te reo (language), pepeha (origin), waiata (song) and customary practices. Current and past tangata whaiora (clients) and whānau alike have expressed the Mauri (energy force) a vital essence of healing when cultural practices are recognised.

Mirimiri Continues at ABI

Mirimiri is traditional Māori massage therapy that works holistically to enhance well-being. Mirimiri healing is believed to have an intrinsic connection to nature using the breath, water and karakia (prayer) to protect and calm the wairua (spirit) of the client. As a therapeutic massage it uses gentle to deep pressure that enables the body to release stress and tension. It is intended to assist the healing process by detoxifying and restoring balance.

Romiromi may be used in conjunction with Mirimiri. This is a combination of pressure point release, gentle stretching and deep tissue massage. It is used to release energetic blocks held in the body.

The process is entirely client directed. Soothing words help lift depression, uplift and inspire. Deep breathing is encouraged to help calm and soothe the wairua. Therefore, mirimiri may be of benefit to most people as it can be adjusted to the needs of the client.

FOCUS ON EXCELLENT STAFFING

Careerforce

The introduction of Careerforce National Certificate of Health & Well-Being (Rehabilitation Support) Brain Injury has been a long and protracted affair replacing the previous Level 4 Brain injury Certificate. ABI has been able to obtain funding for 12 trainees with the non-NZ resident trainees funded by ABI. The current level of trainees and graduates for the intensive services stands at 85.6%, exceeding our 80% target.

Further Education

Two ABI Auckland staff are enrolled in PhD programmes. Four staff at ABI Wellington have been awarded advanced degrees in the last year: two post-graduate diplomas, a masters, and a PhD.

Conferences

Demonstrating ABI's commitment to ongoing professional development, ABI staff attended numerous national and international conferences. At every conference, ABI staff presented talks or posters of original research, thus elevating the field.

1. Injury 2017: Trauma Services 21st annual injury conference; 3 August 2017; Auckland
   a. Robin Sekerak. TBI rehabilitation in NZ (presentation).
2. 27th Annual Scientific Meeting of the Stroke Society of Australasia; 23-25 August, 2017; Queenstown
   a. Alice Dwyer, Caroline Bullen. Em'powering' the Path to recovery: Clients' experience of power wheelchair use in their early phase of rehabilitation (poster).
3. New Zealand Rehabilitation Association (NZRA) Conference; 8-10 September 2017; Christchurch
   a. Ben Wassell. Do objective falls risk measures have any correlation with subjective measures or post traumatic amnesia state in older TBI populations? (presentation).
   b. Allison Foster. Early Rehabilitation for Traumatic Brain Injury in New Zealand (presentation).
   c. Allison Foster. An Aging Population in Traumatic Brain Injury Rehabilitation: Outcomes and Resource Implications (presentation).
   d. Jessica Gardiner. What is older person's rehabilitation? (presentation).
   e. Babbage D, Drown J, Kayes N, Levack W, van Solkema M, & Armstrong J. Invigorating goal setting: the ripple effects of an iPad app developed for inpatients to view videos about their rehabilitation goals (presentation).
4. OTNZ-WNA Conference; 13-15 September, 2017; Nelson
   a. Amy Honeysett, Shona Lees. Let's talk about Sex: Addressing Sexuality as part of Mainstream Practice (90-minute workshop).
5. Rehabilitation Medicine Society of Australia and New Zealand (RMSANZ); 17-20 September, 2017; Canberra
   a. Rahimah Nawi, Seemann R, Foster A. Readmission to an acute care hospital during inpatient brain injury rehabilitation
   b. Rahimah Nawi, Seemann R, Foster A. Aspiration pneumonia and pneumonia during acute inpatient brain injury rehabilitation. (Please note that these abstracts were accepted but not presented due to lack of travel funding)
6. American Congress of Rehabilitation Medicine (ACRM); 23-28 October, 2017; Atlanta, GA, USA
   a. Kingsley, Kristine, Jonathan Armstrong, Carolos Marquez de la Plata, Amit Kumar. Community Reintegration in Low-Resource Settings: Unmet Needs and Family Participation in Rehabilitation Process (a four-speaker workshop).
   b. Phil Morse, Pamela Roberts, Deborah Anselm, Christine Howard-Brown, Sarah Morrison, Chris McDonell, Michael Jones, Amy Morse, Neonila Panko. Clinical integration and innovation for persons with catastrophic injury/ chronic disease: where should we head?
7. Brainstorm concussion conference; 17-18 Nov, 2017; Napier
   a. Robin Sekerak. The biopsychosocial model of concussion; and Concussion Conference Conclusion
   b. Richard Seemann. Post-Concussion Headache Update
8. 4th Federal Interagency Conference on TBI; 11-13 June, 2018; Washington DC, USA.
   a. Robin Sekerak. Poster.

Staff Recognition

The "ASPIRE" awards have now been implemented for over 2 years. The awards provide employees with the opportunity to acknowledge their colleagues and generate loyalty and camaraderie among team members. This staff recognition scheme has proven popular with numerous nominations submitted each quarter. The "ASPIRE" awards committee, comprising of representation across all the services, continues to meet regularly to improve the staff recognition programme.

A	S	P	I	R	E
Accountable	***Supportive***	***Passion***	***Integrity***	***Respectful***	***Excellence***
Rangatiratanga	Manaaki	Matapaki	Mana	Manaaki	Hiranga
We believe that access to quality rehabilitation services is a right for children and adults in New Zealand	We commit ourselves to warm-hearted service, care, hospitality and support	We have a passion for learning and sharing knowledge	We aspire to earn trust by being honest, reliable and accountable	We recognise the mana, strengths, goals and aspirations of our partners - clients, whānau and funders	We commit to achieving exellence in the practice and science of rehabilitation

SERVICE TO THE FIELD

Major Award

Maegan Van Solkema (Auckland SLT) was awarded the 2017 Field Educator Service Award from the New Zealand Speech-language Therapists Association (NZSTA) in conjunction with three NZ universities: University of Auckland, Massey University, and the University of Canterbury.

New Zealand Speech-language Therapists' Association
Te Kāhui Kairūhakatikatika Reo Kōrero o Aotearoa

Professional Training Sessions

The following training was delivered to the larger field by ABI staff:

1. ABI Rehabilitation Wellington team (hosting and contributing). Concussion Works Workshop with Shannon McGuire. 18 August 2017.
2. Richard Seemann, Robin Sekerak, Alice Theadom, Nathan Zasler, John Leddy, Geneva Health team. BrainStorm: heads together for concussion. 17-18 November 2017.
3. Julie Pryor, Angela Davenport. Rehabilitation nursing training. 28 November 2017.
4. Adelaide Jasonsmith, Angela Davenport, Vanessa Pullan and Caroline Woon. National neuroscience symposium: "NURSING THROUGH THE JOURNEY" at Wellington Regional Hospital. 29 November – 1 December 2017.
5. Rachelle Bennett. Physiotherapy New Zealand symposium. Concussion: From Injury to Recovery. 3 March 2018.
6. Dr Elisa Lavelle Wijohn, Abbey Marshall, Alaina Dunnett and Dr Kris Fernando. Northern regional providers group (NRPG) Rehabilitation Network symposium: Supporting people through their Journey. 2 May 2018.

Presentations to External Groups

1. Richard Seemann. Makoha rest home and hospital, Rotorua: Rehabilitation and the Multi-Disciplinary Team. 27 July 2017.
2. Ben Wassell. Physio by Design: In-service on chronic pain management – Chronic pain and the brain. 04 August 2017.
3. Sian Stevenson. Midland Trauma Nurse Workshop: Traumatic brain injuries – transitioning patients and families. 06 Sept 2017.
4. Noel Tiano:Wellington Hospital Grand Rounds: Spirituality and Health. 14 Sept 2017.
5. Angela Davenport. AUT University: Videotaped interview of a senior nurse's opinions and experience in interprofessional rehabilitation. 06 Sept 2017.
6. Kristen Clarke and Robin Sekerak. Hutt Valley DHB ACC and their BMA: The ABI concussion service and understanding the complexity and variability in concussion diagnosis and management. 4 October 2017.
7. Robin Sekerak. Wairarapa DHB ED staff: Concussion in the ED. 12 October 2017.
8. Richard Seemann. ABI Rehabilitation Therapy team: Bariatrics at ABI. 26 October 2017.
9. Lindsey Farrelly, Alison Burford. In-service presentation for CADS West Auckland (community alcohol and drug service). 6 November 2017.
10. Ben Wassell. In-service presentation for Middlemore hospital regarding our services, physio-specific assessment, and how to improve handovers between MMH and ABI. 9 November 2017.
11. Sian Stevenson. Trauma Education Day for nurses, Waikato DHB: An overview of the Trauma Service & ABI. 15 November 2017.
12. Rebekah Kooge. Youth Aid program: an education/networking opportunity with great community outreach. Links to Wellington Youth Justice Co-Ordinator, and Porirua Police via Driving Awareness course. Talk for public about TBI awareness. 16 Nov 2017.
13. Rachelle Bennett and Lindsey Farrelly. Presentation to Community Alcohol and Drug Service: Concussion service for mild and moderate TBI clients. 20 Feb 2018.
14. Tony Young. Presentation to Australasian AROC forum in Brisbane. Sharing innovations to assist best practice: Using the Cloud-based CMS to enhance communication across the rehabilitation team. 15 March 2018.
15. Allison Foster. Lecture for AUT post-grad paper on research methods. Data in Action: examples from ABI Rehabilitation (using satisfaction survey data to change process). 26 March 2018.
16. Stephanie Kennerly. Presentation to Registrars Training Programme (nationwide and included all hospitals via telehealth link). Neuropsychology and Traumatic Brain Injury. 18 May 2018.
17. Julia Averill and Ben Wassell. Presentation to Synapse meeting (Auckland-wide neurological physiotherapy interest group). Treatment of chronic pain; and Running retraining post TBI. 24 May 2018.
18. Rachael Reid. Presentation to OT national special interest group. RESTORES research project. June 2018.

Challenges and Plans for Next Year

FACILITIES

Wellington Re-Build

The Wellington inpatient service has continued to operate out of the Porirua site over this reporting period. With the selling of the land under the ABI facility, this no longer remains an option. Building plans are now in the final stages with work on the new building due to start in the coming months.

Here is an insight into the thinking and inspiration behind the development.

The design for the new ABI rehabilitation centre in Porirua, Wellington has responded to two key considerations. Firstly, research carried out on rehabilitation architecture unequivocally pointed toward the client relationship with nature, stressing views and access to the natural environment. This stimulation is designed to have a positive impact on a clients' rehabilitation.

We have developed a building that looks into a generous courtyard, sheltered and safe, allowing clients to have access to plantings, different textures and fresh air. Between the main building and the gym/OT buildings there will be a landscaped laneway populated with plantings, benches and a basketball court.

Secondly, along with the relationship with nature we thought, how do we create this building to be a place for people from all walks of life to coexist under the one roof and to feel at home. This train of thought developed to prioritise a scattering of breakout lounges, natural materials and residential style fixtures where possible, all summed up as 'many, under one sky.'

Our building seeks to tell this story of unity, while practically allowing for it within our interior layout.

The roof which reads as a single form floating over the main building and its occupants like a cloud (Ranginui). Under the roof the building (Papatūānuku) lays undulating in and out from under the eave above, this shows more building faces and allows for those different break out spaces within.

The building will have a central open plan working area for care, nursing, medical and allied health staff to work alongside each other. The clinical spaces are divided into three zones. One with a focus on supporting confused and potentially agitated clients, one to support higher medical care needs and one aimed to support those in the transitional rehabilitation phase preparing for home discharge.

There is likely to be a gap between having to leave the current building and the completion of the new build. A contingency plan is currently being worked on for this.

CONTRACTS

New Contract Implementation Funding Model and Contract Review

There has been increased focus on the current funding model and service specifications over the past six months. Work continues with ACC and the other TBIRR providers to determine a funding model that will not only drive best practise and enable the best outcomes possible, but will also address some of the key financial risks that have become apparent during the TBIRR contract. Some of the key risks that have been identified and discussed with ACC include fluctuation in occupancy, the high cost of 1:1 staffing (as illustrated in the diagram) and the recent pay equity adjustments. ABI Rehabilitation has also highlighted the future concerns with the continued pay equity adjustments, the recent nursing pay review and the need for the service to increase the medical specialist cover (to align with international standards).

To support the funding model redesign, ABI Rehabilitation has collected and shared a significant amount of data, including:

- Financial statements
- 1:1 staffing data
- Inputs on staff (direct and indirect) for a selected group of clients over a two week period
- Consumables and food costs allocated to clients
- Equipment usage and needs (and cost)
- Bed retention breakdown over a number of years

There are future planned sessions between the providers and ACC to continue to work through the contract specifications and the potential funding model going forward.

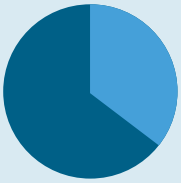
Specials (1:1): A typical example

For a given week this client would typically have scored 2 for both care and nursing, however, due to challenging behaviour, they required a staff member (1:1) 24/7. This results in an increase to 3 for both care and nursing scores. The 1:1 adds significant cost without any change the Rehab Complexity Scale (RCS) band as the total has moved from 10 to 12 (both scores are 'High').

CARE	NURSING	TD	TI	MEDICAL	TOTAL
3	3	3	2	1	12

TOTAL REVENUE FOR HIGH RCS

64%
Cost of the 1:1 for high RCS



36%
Remaining revenue for high RCS

In addition to staff cost these clients are typically very complex. Therefore additional resources are required e.g. for debriefs, staff training, specialised equipment, moving and handling risk etc.

RCS LEVEL

- very high
- high
- medium
- low
- very low
- **high less 24/7 special***
- high retention

TECHNOLOGY

Wi-Fi

Good progress has been made on the longstanding need for a site wide Wi-fi has been an area for improvement for some time but more recently this has made good progress. The aim is for clients, staff members and visitors to be able to connect to the Internet outside of the main office buildings. The background work which include Wi-fi design, upgrade and configuration of switches, firewall changes and IP address changes has now taken place. Currently the hardware for the Wi-fi is getting installed and tested. The news about these improvements was positively received by clients and staff who are excited for the implementation to be completed in the next few months.

Telehealth (Zoom)

Following a significant process (identifying needs, reviewing different software and hardware solutions, testing, ensuring compliance with health information security standards, creating policies and procedures, training) the chosen telehealth solution has started to be rolled out. ABI will be investing in Zoom licences and hardware to upgrade the current available facilities to enhance the experience for users (clients and families, staff, other stakeholders). The first rooms have already been set up to allow for a testing phase. If successful, the chosen solution will be rolled out across ABI within the next few months.

Issues and Resolutions

CLIENT DISCHARGE

Discharge Reports

Completion of a comprehensive interdisciplinary report at the time of discharge has its challenges. Some of the issues include multiple authors trying to access the one word document, the need for information to be entered in different sections of the report (initial presentation, safety, current status, FIM scores and recommendations) and the workload for those that may be the single person for that discipline (e.g. medical / social worker).

Feedback from ACC case owners via the satisfaction questionnaire indicates that the timeliness of these reports is an area where they would like to see continued improvement.

A working group headed by the OT Clinical Lead in Auckland has been tackling this issue. The aim is improve the timeliness of the report through better use of technology. By allowing pre-population of some sections, discipline specific datasets (to allow multiple access at the same time) and meaningful templates the plan is to dramatically reduce the staff hours required to generate the report without losing any quality. This has been a large project with development continuing. The aim is to start the current development in September 2018 and then build on this as more development is tested and completed.

Mayo-Portland Adaptability Inventory (MPAI) Post Discharge Information

Last year, ABI Rehabilitation was completing a Mayo-Portland Adaptability Inventory (MPAI) on discharge and then calling the client about 6 weeks post discharge to repeat this. The aim of this was to investigate if clients were maintaining their level of independence post discharge and identify any areas of concern (to enable us to focus on these pre-discharge).

Over the course of the year the Australasian Rehabilitation Outcomes Centre (AROC) ambulatory datasets were introduced for the community services. This also required them to collect the MPAI questionnaire information. It was decided therefore, that it would be too much for the clients to also be contacted by ABI for this information. The aim was for ABI to continue to do the MPAI on discharge and then collect the post-discharge MPAI information from the community providers. This, however, was not successful with very low numbers of post-discharge MPAI information being shared. The decision has been made to go back to the previous method of ABI collecting an abbreviated version of the MPAI, namely the participation section.

STAFF RECRUITMENT

High Quality Staffing

Maintaining high quality staffing continues to be an issue with regular recruiting drives particularly in the areas of registered nurses, psychologists and medical consultants. There is a regional and even national shortage of psychologists and rehabilitation physicians. Although this is not a new issue, it continues to put strain on the service provision. Over the year, we have launched several recruitment drives attracting some good international and nation applicants.

Dr Richard Seemann, plans to increase his involvement with the community services of ABI Rehabilitation and will be moving out of the TBIRR contract later this year. Dr Richard has been instrumental in the continued success of the TBIRR contract within the Auckland region. From the start of the TBIRR contract Richard has provided medical and rehabilitation leadership, that has enabled continued quality improvement and service growth. His replacement is Tanya Harris, who is currently the TBI and Polytrauma Program Director for the Veterans Administration hospital in Florida.

Other significant changes during the past year include the appointment of Fiona Martin, Wellington Nursing Services Manager, Amado Torres, Wellington Director of Rehabilitation and Dr Elisa Lavelle Wijohn, Auckland Director of Rehabilitation.

Client Story

The Importance of Having a Holistic View in Rehabilitation

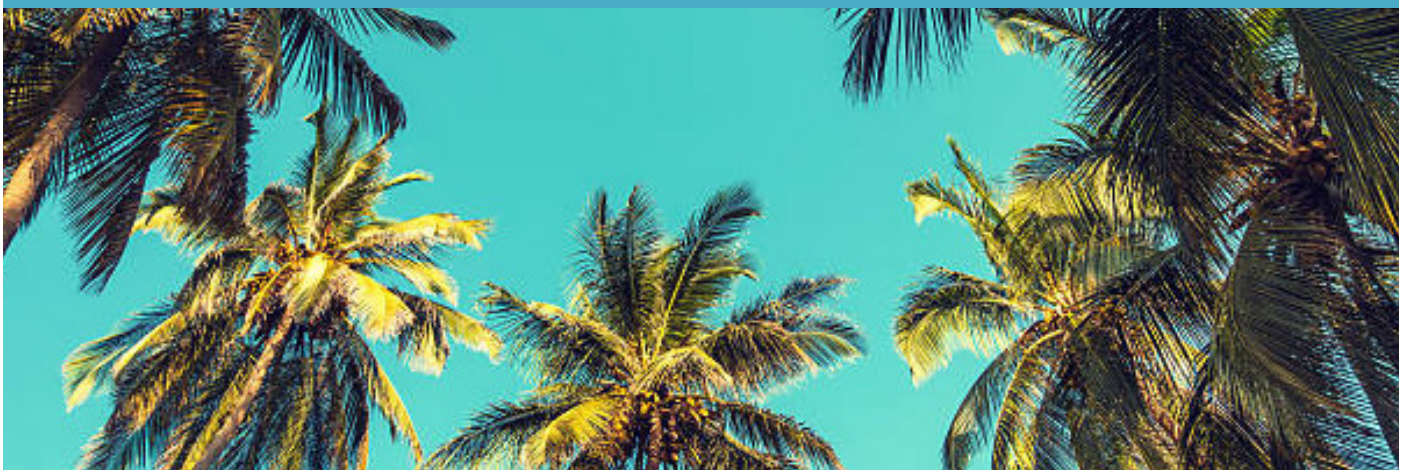
This is a story about a client in which the challenges largely sat outside of the brain injury, and how ABI took a comprehensive approach of putting the client and family in the centre to achieve good outcomes.

"Macawa" was injured in a high-speed car accident with tragedy surrounding the event. Following this traumatic event, Macawa was admitted for intensive rehabilitation at ABI Wellington. Macawa benefited from the support of his wife and extended family, who all wanted to remain together during this very difficult time. However, because their home was in Palmerston North, this presented some practical problems. ABI Rehabilitation was able to provide the family with temporary accommodation and liaised with Immigration NZ on visa issues.

Macawa initially presented as very agitated and confused, and at times would be aggressive and frustrated. This was out of character for him and caused a great deal of anxiety for his wife and family. While Macawa was fluent in English, he tended to speak more in Fijian, making communication difficult. ABI's social workers were vital to Macawa's family for emotional support. The full interdisciplinary team worked together to give Macawa a comprehensive rehabilitation programme with heavy involvement of his family in every step. The team provided education, strategies, and training in preparation for discharge. Because Macawa would need a lot of support at home, the team worked with ACC to design services post-discharge.

Macawa settled into his rehabilitation and routine at ABI and he began to resume some previous activities, such as attending family church services. Working together as a team, Macawa's family grew in confidence regarding his cognitive and behavioural changes. Macawa made a successful return home a full month earlier than originally expected.

Thus, this is an example of how the ABI team worked with a severely-injured client and their family to achieve a good clinical outcome. In addition, the ABI team showed a good practical approach to multiple issues faced by the family during a time of tragedy.

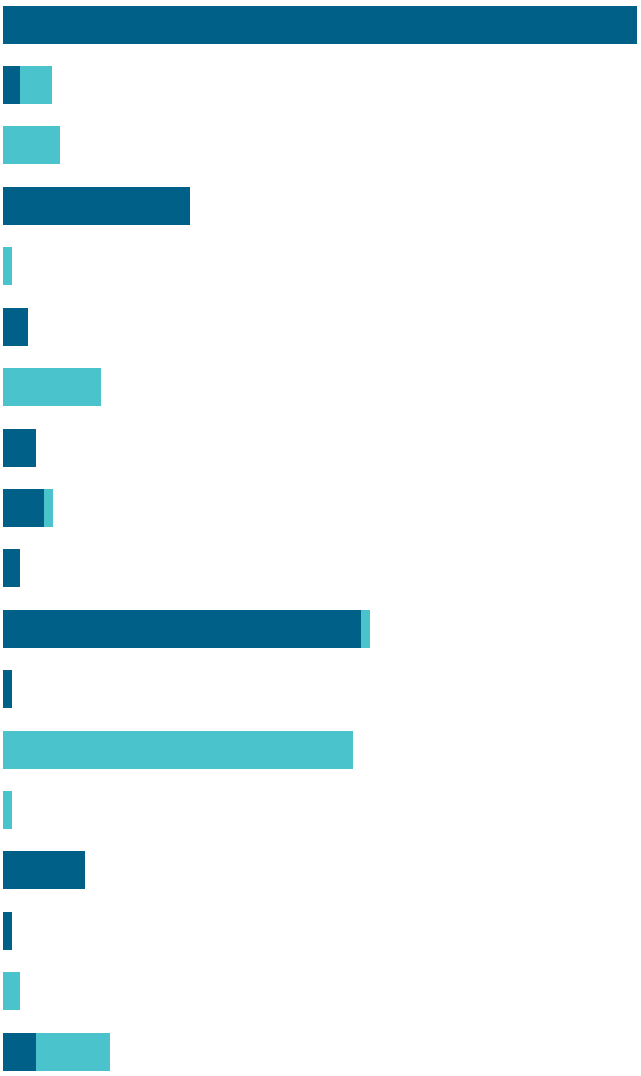


Summary of Admissions

WHERE THE REFERRALS CAME FROM

Referring Hospitals

REFERRING HOSPITALS	TO ABI AKL	TO ABI WGTN	TOTAL
1) Auckland Hospital	78	0	78
2) Hawkes Bay Hospital	2	4	6
3) Hutt Hospital	0	7	7
4) Middlemore Hospital	23	0	23
5) Nelson Hospital	0	1	1
6) North Shore Hospital	3	0	3
7) Palmerston North Hospital	0	12	12
8) Rotorua Hospital	4	0	4
9) Taranaki Base Hospital	5	1	6
10) Tauranga Hospital	2	0	2
11) Waikato Hospital	44	1	45
12) Waitakere Hospital	1	0	1
13) Wellington Hospital	0	43	43
14) Whanganui Hospital	0	1	1
15) Whangarei Hospital	10	0	10
Other Acute	1	0	1
Other Long Term	0	2	2
Community Admission	4	9	13
TOTAL	**177**	**81**	**258**




15
6
1
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4
11
10
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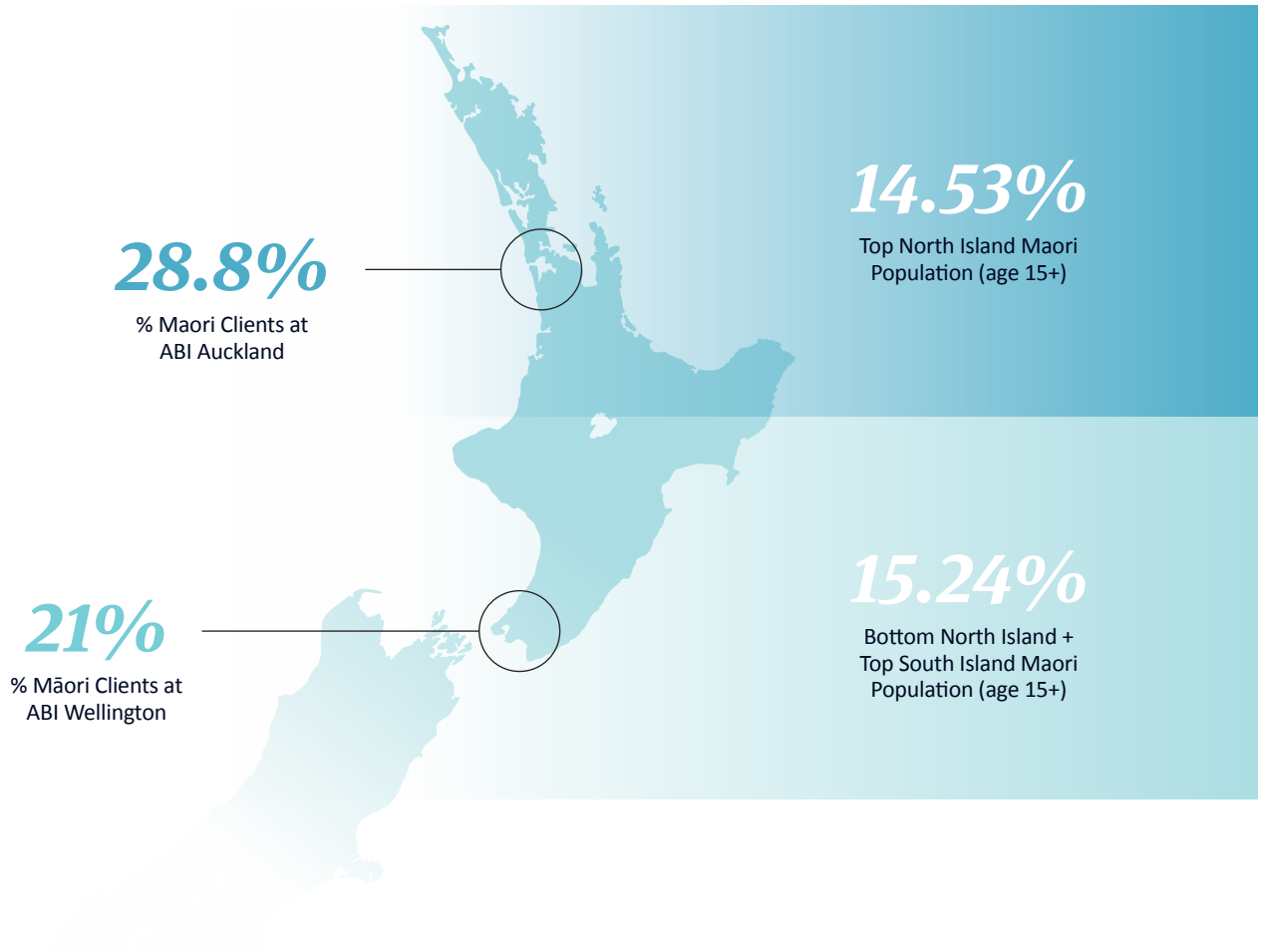
5

MAORI CLIENTS



FUNDING SOURCES

The proportion of occupied bed days by each of the main funders was calculated. Overall, ACC TBIRR was ABI's largest funder, with 79.8% of the occupied bed days. Please see the table below.

FACILITY FUNDER	AKL	WGTN	TOTAL BED DAYS*	%
Public Health (MoH, DHB, DSS etc.)	1280	563	1843	13.9%
ACC TBIRR	6476	4074	10550	79.8%
Private Insurer/Client	68	0	68	0.5%
ACC Residential Support	187	574	761	5.8%

* total bed days = number of days occupied (excl. all absences)

OPERATIONAL PROCESS

Below, we provide the percentage of initial and discharge reports sent to ACC within 10 working days. This was better than 90% for both.

REPORTS	% REPORTS SENT TO ACC WITHIN 10 WORKING DAYS
Rehabilitation Plans	97.0%
Discharge Reports	91.0%

Our aim is to have 100% of discharge reports completed prior to discharge and therefore see the need to continue to improve on this finding. We have included a discharge dataset that is shared with the case manager via the funder portal, informing them of the discharge date, location and likely needs on discharge and continue to work on the timeliness of the discharge reports (see Issues and Resolutions section).

Client Story

A Dream and Determination

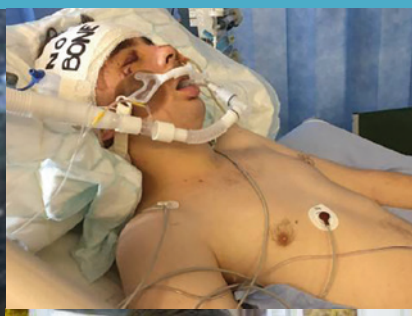
A budding journalist with a fiercely keen thirst for learning found himself needing to relearn life's basic skills after a skiing accident left him with a severe traumatic brain injury. The following is a summary of a newspaper article that he wrote (as part of his rehabilitation goals) about his experiences of brain injury rehabilitation.

At 21, Sam suddenly found himself regaining consciousness in a bed at ABI Wellington with his parents at his side. He had hit his head on a rock during a skiing trip to Queenstown. He spent two weeks in a coma and many more in a state of post-traumatic amnesia.

As Sam gained strength, he began the long, unpredictable road to recovery. His tenacity shone through as he engaged in the 24-hour process of rehabilitation with specialist trained nurses and therapists to guide him. Each day that went by, Sam would be determined to do more for himself, and the ABI team adapted their expectations and levels of support to help him continue towards his goals.

ABI staff worked collaboratively with Sam's family to provide round the clock support. Everyone celebrated Sam's successes as he achieved goals in physiotherapy, occupational therapy, and speech-language therapy.

Sam's confidence grew throughout his rehabilitation until he was discharged home to continue the process of recovery at home among his family and friends who throughout this process have also gained knowledge into the complex world of brain injury recovery. Relearning life's basic skills won't stop Sam from living out his dream of becoming a journalist.



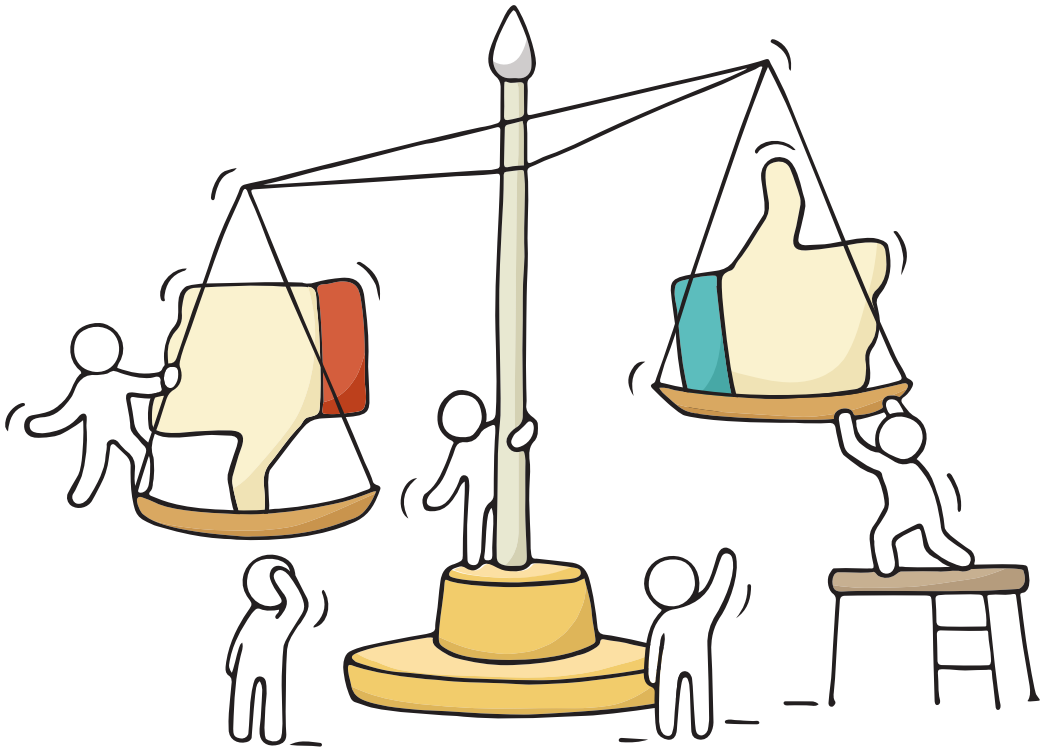
Evaluation of Client Outcomes

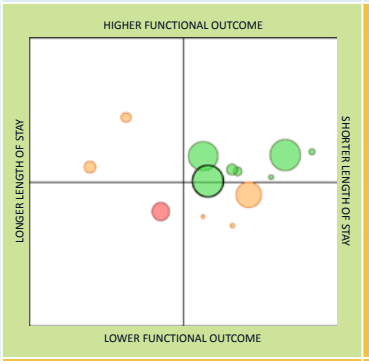
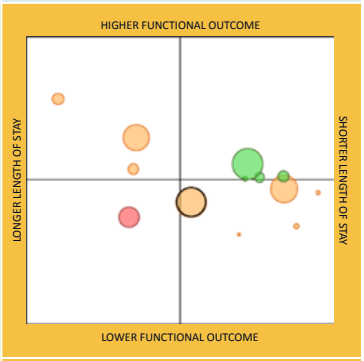
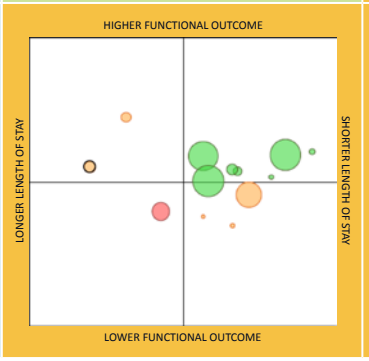
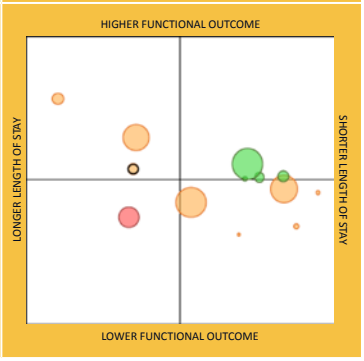
AUSTRALASIAN REHABILITATION OUTCOMES CENTRE (AROC) DATA

The table on page 21 shows our key AROC figures for TBI, from the two most recent AROC reports.

- FY 2017: Fiscal year 2017 (1 July 2016 – 30 June 2017).
- CY 2017: Calendar year 2017 (1 January – 31 December 2017).
- AU & NZ: Australia plus New Zealand (the AROC benchmark).

The data from AROC has consistently demonstrated that the Wellington service tends to achieve higher FIM gains at the expense of length of stay. This has initiated a quality project to help us better understand why this was occurring. The first step was to review the data. What this showed was that the volume of very short stays (less than 2 weeks) was significantly less in Wellington. Auckland has recently completed some work on clients who are likely to have a very short length of stay. This involved the need to quickly assess and prepare for discharge with clients being identified pre-admission as potentially being short-stay so the team were aware and ready to implement a quick discharge. The Wellington team, on reviewing the data have followed a similar plan in order to improve the process for the short-stays.



VARIABLE	FACILITY OR BENCHMARK	FY2017	CY2017
Number of TBIs	ABI Auckland	167	158
	ABI Wellington	63	100
	Benchmark (AU & NZ specialists, TBI only)	1,075	1,110
All TBI episodes, case-mix adjusted average LOS[1]	ABI Auckland	-4.1	-2.7
	ABI Wellington	+8.7	+4.0
	Benchmark (AU & NZ specialists, TBI only)	0	0
All TBI episodes, case-mix adjusted average FIM gain[1]	ABI Auckland	-0.3	-2.4
	ABI Wellington	+1.6	+1.3
	Benchmark (AU & NZ specialists, TBI only)	0	0
% of clients discharged to private residence	ABI Auckland	87%	83%
	ABI Wellington	93%	96%
	Benchmark (AU & NZ specialists, TBI only)	93%	91%
Dashboard summary[2]	ABI Auckland		
	ABI Wellington		

[1] Case-mix adjusted average: AROC case-mix adjusts our data by subtracting each client's value from the group mean for their Australian National Subacute and Non-acute Patient Classification (AN-SNAP) class. These 'difference' scores are then averaged across all clients. The benchmark mean is "0".

- "Good" LOS values are negative numbers (i.e., shorter than average)
- "Good" FIM gains are positive numbers (i.e., higher than average)

[2] Dashboard summary: The facility is the black-outlined dot. Size of the dot indicates numbers of clients. Being in the top-right quadrant is "Good": it means higher functional outcome plus shorter length of stay. The bottom left quadrant is lower functional outcome plus longer length of stay. The other two quadrants indicate mixed outcomes. The other dots represent other TBI specialist providers in Australia and New Zealand.

EMERGING CONSCIOUSNESS

There were 6 clients who were admitted into the Emerging Consciousness Services in the past year. Of these, 5 (83.3%) emerged from the minimally conscious state, and 3 (50%) then went on to emerge from PTA during their rehabilitation with us. This indicates a profound reduction in disability for these clients.

There were two client sub-groups:

- For four of the 6 clients (66.7%), the average time on the EC service was 36 days, followed by a further 133 days on the 'usual' TBIRR programme. These clients were then discharged home.
- For two of the 13 clients (33.3%), the average time on the EC service was 19 days, followed by a further 180 days on TBIRR. These clients were then discharged to long-term rehabilitation, where they presumably would continue to make further rehabilitation gains.

EMERGING CONSCIOUSNESS DATA			ALL CLIENTS	SUB-GROUPS, BASED ON DISCHARGE DESTINATION		
			TOTAL	DISCHARGED HOME	DISCHARGED TO LONG TERM REHAB	DISCHARGED TO HOSPITAL
Number of Clients	**Total**		6	4	2	0
	Gender	**M**	3	2	1	0
		F	3	2	1	0
	Mechanism of Injury	**MVA**	5	3	2	0
		Sports Injury	1	1	0	0
	Emerged from minimally conscious		5	4	1	0
	Cleared PTA		3	3	0	0
Age range	**Age range**		19-40	20-40	19-31	-
Average number of days	**Length of hospital stay**		46	36	67	-
	Length of EC contract*		33	37	19	-
	Length min conscious*		68	73	51	-
	Length of RR contract*		142	133	180	-

* of those emerged from minimally conscious state (N=S)

Stakeholder Relationships

We continually seek feedback from our key stakeholders. These surveys were developed at the beginning of the TBIRR contract in collaboration with the two other TBIRR providers and with the input ('focus groups') of the stakeholder groups themselves. Below is a summary of how and when we collect that information, and key summary findings.

HOW AND WHEN IS THE DATA COLLECTED?

CLIENTS:

At discharge, the rehabilitation programme coordinator asks each client to complete a satisfaction survey. The survey can be completed on paper and returned to staff members or posted back, or the client can complete the survey online. In the case of self-discharge, surveys are posted to the client's home. All survey results are anonymous, although the client can request follow-up from a manager on any issue raised.

FAMILY-WHĀNAU:

At discharge, the rehabilitation programme coordinator asks a representative of each client's family to complete a satisfaction survey. The survey can be completed on paper and returned to staff members or posted back, or the family member can complete the survey online. All survey results are anonymous, although the family member can request follow-up from a manager on any issue raised.

ACC CASE MANAGERS:

At discharge, the client's ACC case owner is emailed a secure link for an online survey via the Funder Portal. A reminder goes out about a week later. All survey results are anonymous.

DHBs:

Every quarter, the brain injury nurse specialist (BINS) team leader prepares a list of the DHB staff members who have worked with the BINS team over the past few months. Those DHB staff members are then emailed a link for an online survey. A reminder goes out about a week later. All survey results are anonymous.

COMMUNITY AND LONG-TERM PROVIDERS:

ACC case managers are asked to list the client's service providers in the community or for the long term. Those service providers are then emailed a link for an online survey. Additionally we email survey links to all TI providers via the new referral process (see page 7). A reminder goes out about a week later. All survey results are anonymous. Note that if the community or long-term provider is ABI Rehabilitation, they are not emailed a satisfaction survey as this would create a conflict of interest.

SATISFACTION OUTCOMES

Overall, our satisfaction survey results are very good, with 84% or more across all groups stating that they are satisfied with our services.

A notable change over last year is in the numbers of surveys for community providers. Last year, in Auckland, we handed out 38 surveys and got 11 back. This year, we handed out 135 and got 69 back. This huge jump is due to the pre-approved TI referrals that are now made as part of the Pathways project. Now, we know who the 'downstream' provider will be and we are able to send them surveys. We are really pleased to be getting so many surveys back now because getting comprehensive feedback from our stakeholders is the best way that we can improve our services. It is worth noting that Wellington did not have a big jump in survey numbers –in fact only 14 handed out and 2 completed this year – because the pre-approved TI pilot is not happening in Wellington. Wellington therefore acted as a 'control group' to show that the new TI pilot really makes a difference.

There continue to be challenges in improving the response rate for our surveys but some of this may be unavoidable because we believe it is important to maintain our respondents' anonymity and we therefore cannot reach out to the people who do not complete a survey. All of our response rates are, however, better than the 'industry standard' expectation for customer surveys, which is 10-15% according to the American Customer Satisfaction Index.

"Overall, how satisfied are you with the service we provided?" (Very Dissatisfied – Dissatisfied – Satisfied – Very Satisfied)

Across all groups 84% or more stated that they are satisfied with our services

SATISFACTION SURVEY	# SURVEYS ISSUED OUT	# SURVEYS RETURNED TO US	RESPONSE RATE %	PERCENTAGE OF SATISFIED +VERY SATISFIED
Client; Auckland	189	62	32.8%	96.8%
Client; Wellington	82	29	35.4%	89.7%
Family & Whānau; Auckland	188	43	22.9%	97.6%
Family & Whānau; Wellington	82	25	30.5%	91.7%
ACC Case Owners; Auckland	168	86	51.2%	93.0%
ACC Case Owners; Wellington	75	43	57.3%	100%
DHB Acute Services; all sites	40	17	42.5%	Auckland: 91.6% Wellington: 100%
Community and Long-Term Providers; Auckland	135	69	51.1%	84.1%[3]
Community and Long-Term Providers; Wellington	14	2	14.3%	100%

[3] Although this is the lowest satisfaction rating amongst all of the stakeholders, compare it to 2016, when the average percentage satisfied or very satisfied was 25% in Auckland (and 14% in Wellington!). We have put a lot of effort into improving processes for community and long-term providers and it shows in the improved numbers.

Closing Words

ABI Rehabilitation views itself as being in an incredibly privileged position. For over 20 years the company has been supporting people in their time of crisis following brain injury. The continued commitment to quality improvements, not only by ABI Rehabilitation but by all those in the sector, has driven positive change and better client outcomes. Small changes to contracts, such as removal of prior-approval for entry to the TBIRR, allowing of minimally conscious clients to access the specialist services and facilitating engagement with the community TI providers prior to discharge have all resulted in significant changes to service delivery and client experience for the better.

As stated in the introduction, an annual report provides a good opportunity to reflect on the data. Some of the key findings from the past 12 months include:

- There has been a down turn in occupancy volume. The occupied bed days saw an increase last period but this period it was lower than the figures of 2015/16
- Great uptake in community satisfaction feedback – due to the increased involvement we are experiencing with the pre-approval TI pilot being run in Auckland
- AROC data, looking at the FIM gain and length of stay, continues to show positive results with a quality initiative taking place in Wellington to review the short-stay process
- 29% of our clients in the Auckland service are Māori – nearly double the Māori representation for our catchment area
- Comparing last period with this – the gender make up and mechanism of injury remain very similar. There is a 5% decrease in vehicle accidents and a 2% increase in assaults. The volume of those admitted in a minimally conscious state has halved (13 to 6)
- Of the six clients admitted in a minimally conscious state, four were discharged home
- In total 222 of the 258 clients that came through ABI Rehabilitation were discharged home.

The past year has not passed without its challenges. The ABI team in Wellington have had to continue to work through difficult times, at one point having to relocate clients to allow for site work to be completed. The completion of the new building plans has been very positive, however the year ahead will continue to present challenges due to the need to vacate the current premises prior to the completion of the new build.

Another challenge that continues is the reimbursement model for the TBIRR. On the positive side, evidence continues to demonstrate that the model incentivises intensity and allows for initiatives from the providers (in line with the 'tight loose – tight model' highlighted in the ACC strategic plan). A fluctuating monthly revenue however, based on occupancy and varying RCS levels with revenue not tightly matched to the main cost drivers (e.g. 1:1 staffing), has continued to result in some challenging months financially. As mentioned, we welcome the opportunity to explore this further in the coming year.

Working within the field of rehabilitation in New Zealand continues to be an exciting time. There is a strong vision for continued quality improvement with solid support across the sector. We look forward to another successful and productive year, in which clients with brain injuries can continue to benefit from the world-class rehabilitation our fantastic teams provide.

Tony Young

General Manager
Rehabilitation Services
ABI Rehabilitation

ABI Rehabilitation is the leading provider of intensive rehabilitation in New Zealand with specialist centres in Auckland and Wellington. ABI provides comprehensive services for people with traumatic brain injury (TBI) and stroke.

For more information visit **www.abi-rehab.co.nz**

ABI Rehabilitation was the first Australasian rehabilitation organisation to achieve CARF accreditation. We first achieved this distinction in 2012 and have maintained it continuously through demonstration of ongoing commitment to continuous quality improvement. Our next CARF survey is planned for November 2018.

ABI Rehabilitation New Zealand Ltd

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