





## Welcome!

Life doesn't stop after a brain injury, but it does become uncharted territory for most people.

Brain injury rehabilitation isn't as simple as recovering from a muscle strain where rest and some physio may be all you need. Progress can be long and challenging, but getting the right intervention and the right support – over the right time period – can be life changing.

Over the past two decades Brightwater has been helping individuals, whose life journeys have abruptly changed course due to brain injury, to find meaning and independence again through our one-of-a-kind program at our rehabilitation centre at Oats Street in the Perth suburb of East Victoria Park. When we first began the bold experiment of offering rehabilitation in a home-like setting, plenty of people in the medical profession and elsewhere thought we were crazy. Yet there has always been method in our madness and, over time, the evidence to back it. We weren't afraid to push boundaries and we continue to push boundaries every day - working alongside people with acquired brain injury (ABI) to unlock their potential in ways that often exceed expectations.

Our unwavering belief in practising practical life skills in an everyday context has given Brightwater's innovative rehabilitation program its backbone. Around this, we've nurtured a purpose-built community, a place where people with acquired brain injury can come to re-learn the skills they need to live a more independent life, build friendships, share frustrations and take control over shaping their new life.

What we do at our East Victoria Park premises is guite different to any other communitybased rehabilitation centre in Australia, or the rest of the world. By fusing therapy with everyday living scenarios over an extended period of time and through different stages of rehabilitation, we build a bridge between hospital and home. For so many people, that bridge is a lifeline – built at a time when they, and their families, are often coping with a raft of emotional, cognitive and physical changes including impaired memory, slowness of thought, concentration difficulties, impaired movement, sensory loss and language disorders.

We should always be giving people the opportunity to explore what their brain is going to do for them. The brain itself is not a part of the body that comes up with predictable outcomes, it has so many different surprises for all of us, including those of us who have worked in this field for many years.

Just as every journey is different, so too is every starting point and destination. The approach we take is highly personalised, because it's so important to give people the opportunity to explore what their brain is going to do for them. It's these individual success stories which truly showcase the potential of the work we are doing and why learning how to live, and to live regardless of the impact of their brain injury, is so valuable.

Our work at Brightwater will never be the end of a person's rehabilitation journey, but we believe it is almost always a turning point towards a better future.

I have an enormous sense of pride about our rehabilitation work; pride in what we've achieved as an organisation to deliver an innovation that no one had before. I also feel an enormous sense of pride in the people who have the courage to participate in this program, to make gains, to move back into their life, and to have the strength to be able to direct what their life should look like.

Brightwater's work at Oats Street is about people learning to live their lives regardless of the impact of their brain injury. People don't come here having ended their journey from brain injury. People come here to start living their lives again.

There's no doubt rehab is tough – for everyone. I am also immensely proud of the people with whom I have the privilege to work and grateful for the local and international colleagues who have shown an interest in our model and inspired its ongoing improvement.

Thank you to everyone who has contributed to the development of this model, our ongoing work - and this publication, which we hope enables others to share in our success and expand the benefits for people with acquired brain injury.

Janet Wagland

General Manager Community Brightwater Care Group





The human brain has an amazing ability to grow and change. It is one of the most flexible and agile systems in our body - with an incredible capacity to evolve as it learns.

For centuries, scientists believed different physical areas of the brain were responsible for specific functions, and these were hardwired and static. But modern brain science shows that the brain never stops changing and, with the right stimulation, it can build new pathways for learning and take detours around the damage caused by accident or illness.

Neuroplasticity, or the brain's ability to re-wire itself, is a concept bringing new hope and a new future to thousands of people whose lives have been shattered by an ABI. Yet, many stroke and accident victims are still being told they will never walk, talk or live independently again. Sadly, this isn't always true and the human and social costs are enormous.

Brightwater's rehabilitation centre at Oats Street has been transforming the lives of Western Australians suffering from an ABI for more than 20 years. The centre is an innovator in neuroplasticity, and the body of clinical research undertaken is helping to push the frontiers of brain rehabilitation practice. The program is the only one of its kind in Australia and is recognised internationally for achieving breakthrough results.

The invaluable work of the Brightwater team delivers immense benefits, not only for the individuals who are reclaiming their damaged lives and learning to live to their fullest ability, but also for the broader community, which suffers huge loss and wears the cost of caring for clients with complex brain impairment.



Neuroplasticity is the ability of the brain to modify its connections or re-wire itself, particularly in response to a learning experience or a brain injury.



# Learning to live again

Every gain in a client's independence and economic participation directly reduces the cost of care and increases their contribution to society. Yet most clients with a brain injury receive only a few short weeks of intensive treatment in hospital before they are discharged and left to fend for themselves. For many, regardless of their age, this means relying forever on the generosity of family carers or moving into a residential aged care facility.

There are many different types of brain injury and no two cases are the same, because every client has their own combination of physical, cognitive, communication, psychological or behavioural difficulties. This makes treatment particularly complex and the outcome of rehabilitation difficult to predict. But, as our knowledge of the brain expands, so too do the frontiers of what's possible.

Brightwater's Oats Street centre has developed a whole new approach to rehabilitation that is unique in Australia. Its 24-7 program, typically lasting around two years (but it may be a longer or shorter period depending on the individual) is, in every way, designed to help a person with an ABI to rebuild their confidence and skills so they can live a fuller life.

Clients aged from 18 to 65 join the program after suffering brain injury from trauma, stroke, hypoxia, tumour resections, substance

abuse or infection. Some arrive directly from hospital, while others have lived for years with their disability. Acceptance at Oats Street is not based on the severity or cause of their injury, but rather on the individual's potential to grow and change.

The treatment model is fluid and adaptable, taking people with an acquired brain injury on a uniquely personal journey by helping them to learn practical, functional skills in a realworld setting. For some, the goal is to return to independent living, fully participating in and contributing to their community. For others, it is a reduced need for concentrated care so they have greater independence and control over their lives.

Everyone who completes the program has their own success story, like the young man who was told he'd never be able to walk again after an horrific car accident who has gone on to run half marathons, and others who had been receiving round-the-clock care from family members or in a nursing home who have moved to live independently in their own apartments.

Unlike a person who is born with an intellectual disability, ABI sufferers retain their intellect but often lose the capacity to make full use of it. The ramifications of a brain injury are diverse too, depending on factors like the severity of the initial injury, the degree of plasticity of the brain that is injured, the presence of other factors which influence recovery (such as preexisting drug and alcohol problems) and the person's willingness to stick to what is often a challenging rehabilitation process. Although it is rare for a person to reach the same level of functionality they had before they were injured, access to the right kind of rehabilitation means many regain capability and make significant progress even years after their injury.

## OATS STREET REHABILITATION CENTRE AT A GLANCE

- Capacity for up to 43 live-in residents
- Community-based support for up to 10 clients who live in their own homes
- 8 shared houses
- 8 independent living units
- Shared facilities including an education centre, gym, basketball court and gardens
- 65 full and part-time staff, comprising occupational therapists, physiotherapists, speech pathologists, a clinical psychologist, social workers, nurses, and support staff

The Brightwater Care Group has been looking after Western Australians for more than a century. Originally founded as Homes of Peace, it is one of Western Australia's biggest not-forprofit enterprises with 2,200 dedicated staff and 23 facilities across the Perth metropolitan area. The organisation delivers a wide range of aged care and disability support services, including for people with neurological disorders.





# You can't rush these things

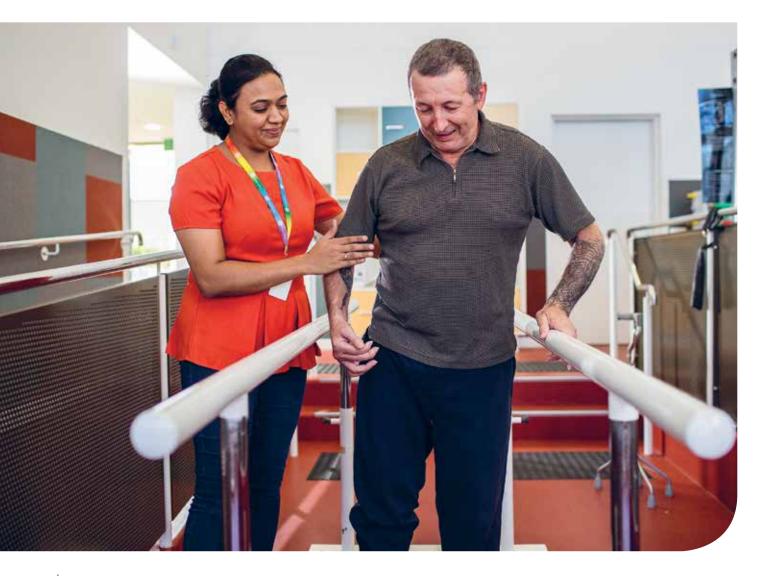
The therapeutic model developed by Brightwater is a slow-stream rehabilitation program, which takes advantage of the brain's capacity for neuroplastic change. Its success lies in the careful combination of environmental design, personal motivation and longer-than-normal therapeutic timeframes. This creates the best conditions for the brain to reorganise and establish new pathways, helping clients to achieve remarkable improvements in physical, social and cognitive function.

Participants typically live at Brightwater's purpose-built centre for 12 to 24 months. The extended timeframe is critical because it gives them the time they need to learn and practise new skills, thereby reinforcing the changes in brain function. Like any pathway, the more these new brain connections are used, the more clearly defined they become.

Every resident has a personal goal-based rehabilitation plan which seamlessly mixes formal therapy with experiential learning both at home and out in the community. The activity program is designed to suit the individual's capability, interests, goals and lifestyle. It starts with small, achievable steps that steadily progress as the person's skills and capacity increases. Family and friends are encouraged to be very involved, so they can provide consistent support and help celebrate the wins.

The homely environment at Oats Street is a critical aspect of the program. Residents live in attractive, built-for-purpose houses that are an established part of the local community. Here, they learn the life skills they need to live outside the centre. A multi-disciplined professional team is always on hand to provide the level of support they need. For some, this is a need for constant, intense assistance with all the tasks of daily living. For others, who live independently in their own home, it is a routine check in with staff to help create opportunities for community connectedness and participation.

Brightwater's combination of time and an immersive rehabilitation experience is a far cry from traditional treatment programs, because it creates practical pathways to help people venture into the world, rather than introducing them to a new skill and moving them on.





## The Brightwater Oats Street rehabilitation model brings eight key elements together.

These are the elements that we believe help to achieve long-lasting rehabilitation and enable people to return to living a more independent life. The individual is at the centre of our model, and with support from their family and our interdisciplinary team, we're all working towards the same goals – goals which align with the individual's own interests and capabilities.



These are the elements that achieve long lasting rehabilitation and the ability for people to return to a more independent life. The individual is at the centre of the model, but supported by families and an interdisciplinary team all working towards the individual's goals.

## Hearts leading minds

The strength of the Brightwater model lies in its ability to help people with ABI to reach their potential and lead the fullest life they can. By its very nature, the concept of client-centred care is embedded in the program's DNA. Every participant has a huge say in what they want to learn and how they want to live. In fact, the whole rehabilitation program is tailored around the individual's personal goals and dreams, while giving them the time and support they need to recover and rebuild brain function.

The program focuses on learning for living, helping people to move beyond independence in physical areas such as mobility and self-care, to enjoy independent, community-based living.



Residents learn systems for self-management and organisation, develop skills to form and maintain interpersonal relationships, and are encouraged to build a lifestyle that is sustainable, with scope for them to keep growing into the future.

Each client's rehabilitation program is personalised and draws on things that are important to them - the ability to live on their own, work, cook, drive, play music - whatever their goals may be. The skills people learn in therapy are put into practice in real-world situations. Adding purpose to skills and encouraging each person to practise those skills in everyday living is highly motivating and a great stimulus for the brain to re-program.

Big goals are broken into small, manageable steps such as learning to use a diary or smartphone alerts, practising writing things down and leaving them in a visible place, or putting notes on the mirror so they are seen every morning to remind clients about tasks like taking medications.

Everyone has their own integrated rehabilitation team, with occupational and physiotherapists, social workers, speech pathologists a dietician, disability support workers, nurses and helping them every step of the way. All staff work in the same manner with each person to reinforce their learning, so effective teamwork is critical.

Every skill a person aims to attain starts with an agreed goal, and is then practised and modified or reinforced until the skill is mastered and embedded in the person's daily routine. By providing context, consistency, repetition, time and persistence, sustainable improvements occur in physical, social and cognitive function. This whole-of-life approach sets the scene for changes that take advantage of the brain's plasticity and the power of personal goals to build life-changing skills.

#### How it works

The Oats Street program is evidence-based and measured, underpinned by rigorous clinical research and evaluation. Graduation from the program is based on a comprehensive assessment of the client's skills and capacity in eight important areas:

- Mobility in the house
- Mobility in the community
- Household tasks
- Self-care
- Self-management
- Community involvement
- Problem solving and contingency planning
- Independent living

Individuals are encouraged to understand that their progression through the program depends on their ability to meet the criteria at key points. Regular feedback ensures they know when they are hitting targets and their achievements are celebrated. It is a unique model that enables clients to practise living the life they want while their brain rebuilds the capacity to make it happen.







## Home away from home

There is a rare atmosphere of community spirit and vitality at Oats Street. This is a place where people learn to live and enjoy life, and are supported to take careful risks to further their rehabilitation journey.

The centre is made up of eight purpose-built share houses, each one with accommodation for five residents. Attractive paths, with wayfinding clues, connect the houses to a central community hub with a gym, learning centre, basketball court and meeting spaces. Nearby is a separate group of independent living units.

Every detail of the centre's environment, from its tree-lined streets to the internal light fittings and furniture layout, has been carefully designed around the special needs of people with brain injuries, to create the best conditions for them to connect with each other and engage with their environment and community.

The eight houses are structured around three levels of staff support - high-care, mid-stage and community-based – and are designed to encourage people to initiate and complete key day-to-day activities that will progressively enable them to reclaim their independence. Each house has different internal features graded to suit different skill levels. As their capability improves, residents graduate through the houses, with many reaching either one of the final shared homes or an independent living unit, where they have full responsibility for looking after themselves and their home. This is the point at which they are ready to transition back into the wider community, with access to ongoing support.

The communal house system recognises that people with brain injuries need time and space to reconnect. People in the early stages of recovery from an ABI can often be overstimulated by their sensory environment, so the design and furnishing of each house has been carefully considered - with subdued colours, patterns, lighting and noise in the early stage houses, and a more vibrant and active atmosphere in the later houses.

The environment is ideal for those who struggle with social interaction, giving them the opportunity to practise forming and maintaining relationships, as well as learning to tolerate difference in others. Residents have their own room with décor they can personalise, while outdoor quiet areas offer privacy and space to relax.

Distinctive brickwork and different house colours help people to navigate the campus and encourage them to independently engage with their environment. Internally and externally, there are clear lines of sight to most functional spaces, which cues people to undertake tasks for themselves rather than wait for a staff member to do it for them.

Domestic facilities like kitchens and laundries are part of the house, and are there to be used, enabling the skills learned in therapy to be seamlessly integrated into daily life. For example, a person learning to stand in physiotherapy can practise standing while hanging out washing or doing the dishes. This combination of real-world context and repetition goes to the heart of the Brightwater model and is critical to the development of sustained changes in the brain.



We work with people to rebuild skills in a home-based setting and that's important because our focus is on life skills like shopping, cooking, self-care, household chores, budgeting, even driving for some people.

Our on-site independent living units are an especially wonderful and safe testing ground before someone moves back into the community, because it really helps them, and us, to understand what challenges are likely to arise and what level of support might be needed to give them the best start to a new and more independent life when they graduate from Brightwater's program.

Wendy Foote, Community Integration Coordinator



# There's a big world out there

Loneliness and social isolation are all too common for people with brain impairment. Venturing into the world is tough when the simple tasks everyone else takes for granted, like crossing the road, catching the bus or paying for shopping, are too difficult. Building relationships can seem impossible when others stare or avoid you entirely because you struggle to express your thoughts, are forgetful, distracted, moody or easily frustrated. The experience can be even more devastating for those who remember what life was like before their injury.

Finding a way back into the community is an essential part of the rehabilitation program for every resident at Oats Street. The model is unique in the way it integrates a full range of physical and mental, emotional and cognitive skills into a person's daily routine, then takes that experience into the real world. Clients learn a practical skill and are encouraged to use it to engage in purposeful activity. For example, if a client is (re)learning to walk, they may be given a goal such as walking to the kitchen or going to the shops. This contrasts with traditional hospital-based rehabilitation, where skills are taught in isolation and clients rarely get the opportunity to test themselves in the community.

Rather than relying on a simulated environment, the Brightwater program helps residents discover the real-life richness of its own neighbourhood in the cosmopolitan inner-city Perth suburb of East Victoria Park.

The program starts with small, supported steps, with participation and engagement levels increasing as a person's skills and confidence grows.

Next door to the Oats Street centre is a busy farmers' market, which is often the first place residents visit. The bustling atmosphere, tasty produce, opportunity to mix with people and enjoy a coffee, creates a vibrant learning environment. Public transport is within close proximity and provides direct access to major shopping centres, health campuses, government services, educational, vocational and recreational facilities when people are ready to venture further afield. Being a wellestablished area of Perth, there's also a range of nearby facilities such as cinemas, shops, cafes, and sporting facilities, enabling people to more easily reconnect with the parts of their past life that define them as individuals or to seek out new challenges.







## A son's perspective

Coming to Brightwater was a nice change for Mum. She had other people in the house that she could talk to and socialise with, rather than just being confined to a hospital room to look at the ceiling all day.

Ben Penna, Janet's son

It was tough for Jan because she was such an independent person beforehand and so involved on the farm doing a lot of active stuff... It is quite a grieving process for her because she has to understand that she's not the same as she was before, but she's still the same person that's wanting to achieve all those goals.

> Chelsea Parnell, Physiotherapist





Brightwater's specialist rehabilitation comes after an already long journey for most clients. The majority have completed acute hospital rehabilitation and are considered by health authorities to have limited potential to improve further, so they have reached the end of conventional treatment.

Regardless of how much time has elapsed since their injury, residents at Oats Street show remarkable growth and recovery thanks to the innovative program and its ability to tap into the unerring plasticity of the human brain.

Rigorous measures consistently demonstrate significant gains and improved quality of life for participants, regardless of their level of disability. For some, success means a return to independent living, fully participating in and contributing to their community; for others, it means a significant reduction in their need for assistance. From a purely economic point of view, this reduction in care and support means substantial cost savings for the community. For the individual, it is literally life changing.

Client assessments are standardised, with the overarching measures being functional and goal-based outcomes. This evaluation helps define and track a person's physical and cognitive abilities, emotional and psychological wellbeing and adaptation, social and community participation, and their progress towards goals. The measures are supported by a suite of discipline-specific assessment tools. Functional outcome measures are typically conducted every three months to coincide with client review meetings, and the results are discussed with the resident and their family.

One important evaluation instrument used by Brightwater is the Mayo-Portland Adaptability Inventory (MPAI-4). This respected clinical test measures the progress of people with brain injuries who have come to Brightwater for rehabilitation in a community setting, and tracks their progress. The tool looks at 29 physical, cognitive, emotional, behavioural and social problems that people may encounter after an ABI and scores their capacity to overcome these. There are three subscales: the Ability Index which tracks their productive activities; the Adjustment Index which tracks emotional and interpersonal factors, and how well an individual is adjusting to life with their brain injury; and the Participation Index which measures their potential for involvement in social and community activities.

Together they create a detailed picture of a client's individual strengths and challenges as they strive for independence, and provide a clear measure of the gains as they advance through the program.



We're able to demonstrate the value of focusing on rehabilitation activities that are genuinely meaningful because we track more than just ability. We also measure how a person copes with and compensates for the injury, the way they've adjusted to their physical and cognitive changes, and the level at which they are able to participate in activities that are happening around them.

> Dr Angelita Martini, Director, Brightwater Research Centre

<sup>1</sup> Malec J.F. (2011) Mayo-Portland Adaptability Inventory. In: Kreutzer J.S., DeLuca J., Caplan B. (eds) Encyclopedia of Clinical Neuropsychology. Springer, New York, NY.

As an innovator in ABI rehabilitation and neuroplasticity, Brightwater invests significant resources in research and evaluations to advance clinical practice, and to seek ongoing ways to support our clients, their families and our staff.

The Brightwater Research Centre was established in 2011. Its applied research contributes greatly to advances in brain injury rehabilitation, neurological conditions, dementia care and the design of living environments that benefit individuals and the wider community.

### **OUTCOME MEASUREMENT**

Brightwater employs validated measurement tools to:

- Assist in the evaluation of people's individual programs
- Monitor changes in function over time
- Enable people to evaluate their own progress and outcomes both in skills they are attaining and goals they are achieving
- Demonstrate the effectiveness of intervention and services
- Monitor quality of life outcomes to show people are not only making skill gains but also feeling better about their lives

- Provide clear evidence of the support requirements of an individual upon discharge
- Provide a common language for communicating with other service providers
- Report to funding bodies
- Enable quality improvement for service provision
- Ensure accountability through quantitative measures
- Inform services to ensure evidencebased practice

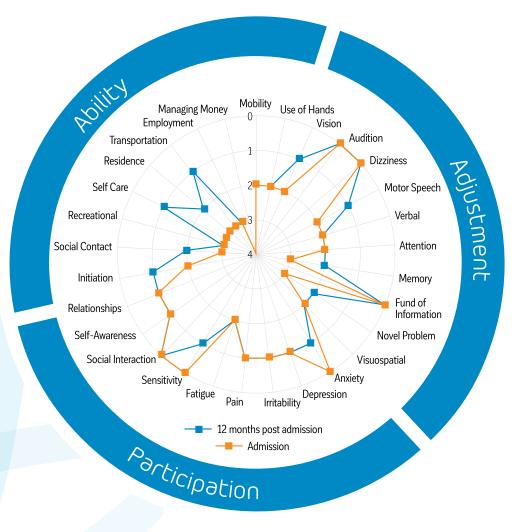
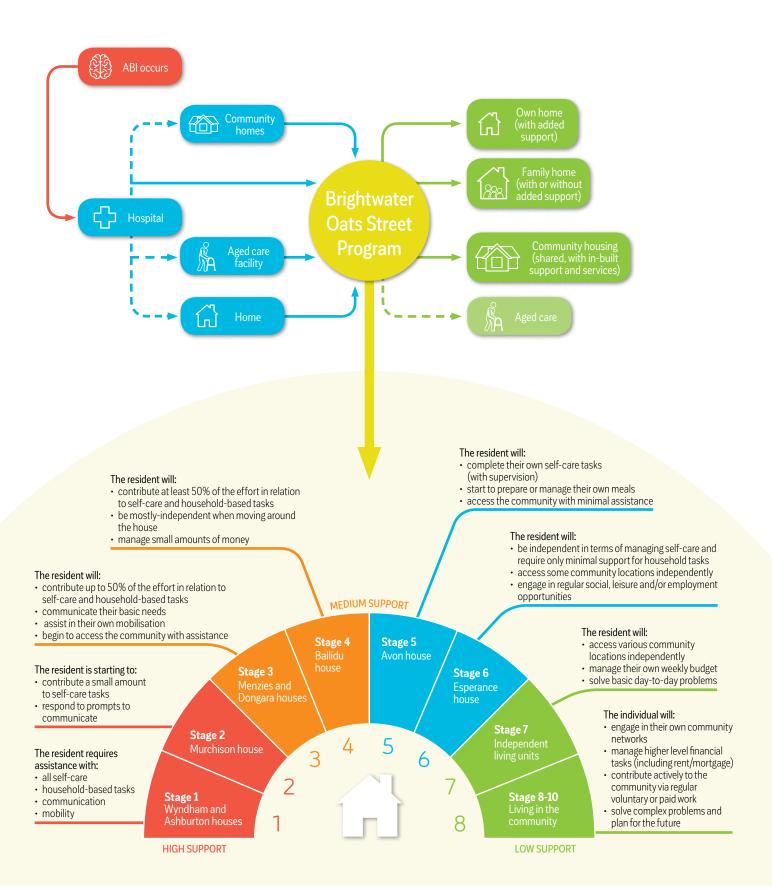
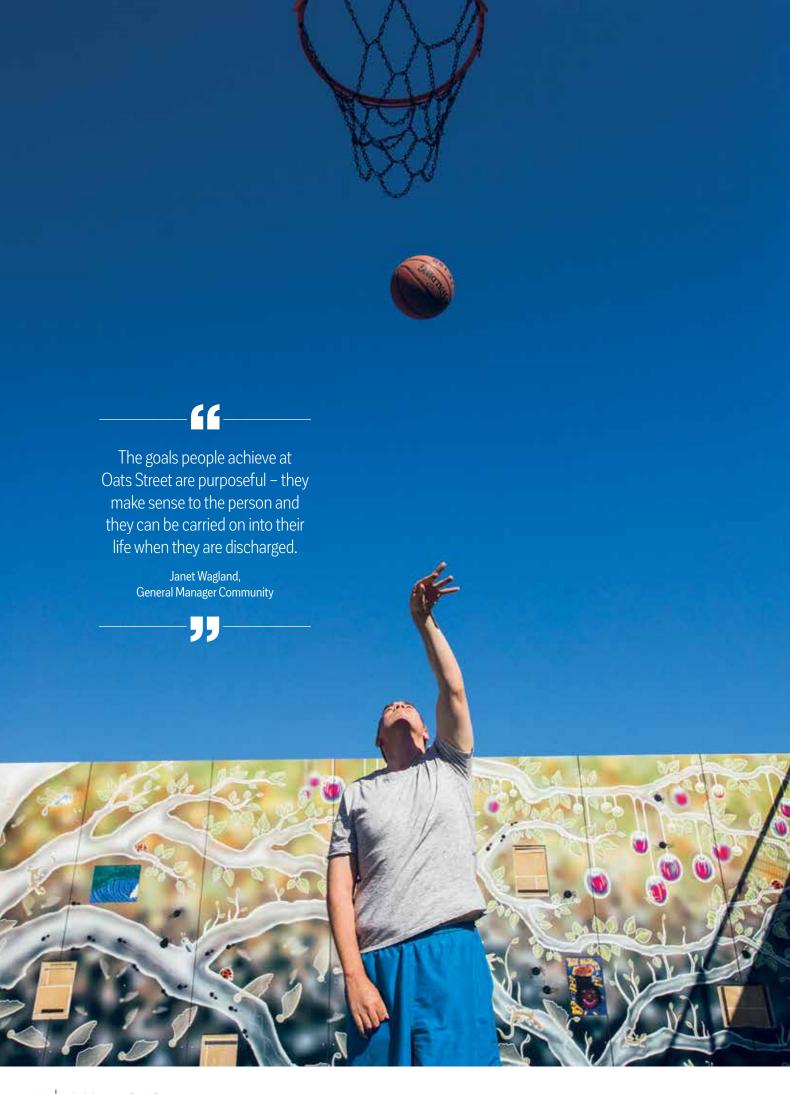


Figure 1: Transitional rehabilitation clients after one year at Brightwater Oats Street (n =17)

# Journey Journey









# Making a difference

The stories of human achievement. success and hope from Brightwater's acquired brain injury rehabilitation centre are powerful, but the body of scientific evidence, accumulated over 20 years, is even more powerful.

Helping people with a brain injury to live the best life they can has an ethical value that cannot be measured in dollars and cents, but the economic argument is also compelling. As well as the productivity gains from people who are able to work and make a valuable contribution to society, the benefits delivered by rehabilitation far outweigh its costs.

Every time a client with an ABI takes up an aged care bed, becomes homeless, needs additional acute care in hospital for injuries associated with their ABI, or goes to jail, it adds to the strain on our over-stretched justice, disability, healthcare and community services. It is up to the community as a whole to shoulder this cost and the responsibility that goes with it.

The Brightwater model is a particularly cost-effective way of delivering rehabilitation services for those with an ABI. A social impact assessment prepared by economic analysts ACIL Tasman, in 2010, looked at Oats Street's socio-economic contribution from three different angles:

- The costs of care flowing from successful rehabilitation
- Improvements in the quality of life for those undergoing rehabilitation
- Improvements in employment opportunities for the rehabilitated

The study found that the cost of treating a client at Oats Street was one-quarter of the costs taxpayers would otherwise pay for that client's lifetime care.

It showed that every cohort of 20 people taken into the Oats Street centre cost \$6.2 million to treat (\$7m in 2017) but would save \$25.67 million (\$29.22m in 2017) in reduced lifetime care. This is a massive saving of 75% for families, the government and the tax-paying public.

In addition to this, many families will attest that the increased independence achieved through Brightwater's rehabilitation approach improves their own potential to return to a more productive lifestyle. These flow-on benefits are valuable to both the micro and macro financial picture for families and the wider community.







It's about encouraging our clients to do more and more for themselves, not doing things for them.

Our psychologists, therapists social workers, support staff and our therapy assistants really work with clients on their journey of acceptance, helping them find a new identity and accept the person they are now - we work on the whole person.

I'm very proud of the outcomes we achieve and how we see people integrate back into the

> Curtis Reddell, Rehabilitation Coordinator





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