The Dunghutti Muri Project

Optimising access to the Mid North Coast Brain Injury Service for local Aboriginal people

Author: Craig Suosaari

Community Rehabilitation Clinician | Speech Pathologist

Mid North Coast Brain Injury Rehabilitation Service

MNCLHD | 20 Kemp St Port Macquarie New South Wales 2444

(02) 55250585 | 0447742646 | Craig.Suosaari@health.nsw.gov.au

ACKNOWLEDGEMENTS

The Dunghutti Muri Project has been very much a collaborative effort and just three years after its inception the list of people who have assisted is extensive. The author extends immense gratitude to everyone's contribution.

A special thanks to the people who participated in interviews but will remain anonymous. Without their generosity and willingness to participate this study would not have been possible.

Thank you to Vicki Solomon. She is a passionate advocate for people with a brain injury and her wealth of experience providing services meant she recognised an issue and sought out an innovative method to engage clients and their families immediately.

Professor Grahame Simpson's patience and expertise, continued advice and inspiration laden wisdom deserves more praise than a mere acknowledgement can possibly provide, but thank you Grahame.

Barby Strettles kick-started the project by encouraging our service to pursue an idea. Maysaa Daher offered much needed perspective and assistance when required.

From November 2017 funding from the MNCLHD Research Support Grant Programme (RSGP) contributed to employment of a Research Project Officer to manage and evaluate the project. In February 2018 a dedicated Aboriginal Health Worker commenced work with MNCBIRS using funding secured through an Agency for Clinical Innovation grant. Thank you to both ACI and MNCLHD for accepting our grant applications which provided this much needed funding.

Thank you to Kera Ritchie who started in the Aboriginal Health Worker role and David Kelly who stepped up to assist when required. Both provided vital guidance via expert cultural advice during the entire project, their connections throughout the local Dunghutti community was bewilderingly extensive.

Numerous Kempsey District Hospital and Aboriginal Health Staff were instrumental in providing local knowledge during the initial discussions and development of the project. Thank you to Michael 'TJ' Smith, Stephen McLeod, Jessica Morris, Marilyn Dean, Ben Somers, Denise Davis, Debbie Dunn Lloyd, Ro Sterling Kelly, Robyn Martin, Amanda Ryan and Clinton Gibbs. Ro Sterling Kelly also provided ideas relating to possible future planning and directions. Stephen McLeod kindly provided artwork for use with our resources.

Our BIRS manager Cassie Carswell bore the brunt of issues relating to recruitment and retention but persisted regardless of the frustration. Special thanks for her willingness to support the project and a fledgling researcher.

The author thanks all the members of the project steering committee for providing ongoing robust oversight during the entire period of the project; Michael TJ Smith, Kera Ritchie, Narelle Miller, Vicki Solomon, David Kelly, Barbara Strettles, Grahame Simpson, Orry Berry, Tristam Morris, Mandy Halpin, Kylie Randall, Cassandra Carswell, Michelle Cramer.

Mandy Halpin and Kylie Randall managed to penetrate the robust discussions occurring in committee meetings to write up minutes and gratefully transcribed interviews.

Local Synapse staff Megan Baker and Jemah Millerd generously donated the Indigenous All Stars shirts that attracted throngs of people to our stall at NAIDOC week celebrations.

The ethics approval process was made significantly easier with the assistance of Bec Lavery, Grahame Simpson, Maureen Lawrence, Sonny Green, Tim Agius and Kerith Duncanson. I appreciate all their support and assistance and the candid critical insights which refined the research component of the project.

Nicole Raschke was supportive throughout the entire process. She and Dr Tony Lower assisted with evaluation and future directions.

Helen Miles the MNCLHD librarian seemed alert, ready and responsive for any request made of her. Yay! For librarians.

Sincere thanks to Dr Kerith Duncanson and David Schmidt for their passion, common sense, efficiency and commitment to the Rural Research Capacity Building Programme. Kerith made the completion of this report such a competitive exercise – and I do like competition Kerith! As a natural extension of this, the presenters Catherine Bourke, Dr Emma Webster and Dr Emily Saurman deserve hearty thanks for their immense generosity. My fellow candidates in the 2018 cohort and previous RRCBP participants provided steadfast support; Grahame Fazio kindly provided apposite context at the start of the project.

To you dear reader – I know what you're accustomed to; you pick up a report haphazardly and glance at the dedication, perhaps read a few words and find that, once again, the author has dedicated it to everyone else but you. Not this time. I thank you for taking the time to read this report.

There are possibly many more people I could thank, but time, space, and modesty compel me to stop here.

Errors and omissions in this report are wholly my fault despite attempts to prevent these from occurring by the myriad of people who have assisted. Sorry.

ABBREVIATIONS

ABI	Acquired Brain Injury
ACI	Agency for Clinical Innovation
ACMS	Aboriginal Corporation Medical Service
AH&MRC	Aboriginal Health and Medical Research Council
BIRD	Brain Injury Rehabilitation Directorate
BIRP	Brain Injury Rehabilitation Programme
BIRRG	Brain Injury Rehabilitation Research Group
BIRS	Brain Injury Rehabilitation Service
ED	Emergency Department
GP	General Practitioner
HETI	Health Education and Training Institute
HREC	Human Research Ethics Committee
IPTAAS	Isolated Patients Travel and Accommodation Assistance Scheme
MNCBIRS	Mid North Coast Brain Injury Rehabilitation Service
MNCLHD	Mid North Coast Local Health District
MVA	Motor Vehicle Accident
NAIDOC	National Aboriginal and Islanders Day Observance Committee
Non-TBI	Non-Traumatic Brain Injury
PTA	Posttraumatic Amnesia
RRCBP	Rural Research Capacity Building Programme
RSGP	Research Support Grant Programme
SSA	Site Specific Application
TBI	Traumatic Brain Injury

LIST OF TABLES and FIGURES **Page**

CONTENTS **Page**

ABSTRACT

PROJECT NAME: Dunghutti Muri Project

KEY WORDS: Brain Injury Rehabilitation, Access, Aboriginal, Engagement

AIM: The NSW Aboriginal Health Plan 2013-2023 highlights that to address disparities changes must be made to the way Aboriginal health care is looked at and delivered. The Dunghutti Muri project aimed to optimise access to the Mid North Coast Brain Injury Rehabilitation Services (MNCBIRS) for local Aboriginal people via a range of culturally appropriate strategies. Potentially modifiable factors to optimise access were initially identified, then developed and implemented over 2017 - 2019. This included the employment of a dedicated Aboriginal Health Worker for MNCBIRS.

METHODS: We envisaged a range of culturally appropriate strategies would optimise access to MNCBIRS for local Aboriginal people. An action research methodology was utilised, involving the simultaneous process of taking action and doing research. The Theory of Access developed by Penchansky and Thomas (1981) and modified by Saurman (2016) enabled conceptualisation of the approach used for the Dunghutti Muri Project. A governing committee that includes local Aboriginal people and MNCBIRS clinicians was convened to oversee implementation of a range of culturally appropriate strategies including the employment of a dedicated Aboriginal Health Worker.

Research involved exploratory sequential mixed methods within a participatory action framework. A clinical file audit collected data from the health records of twenty-seven MNCBIRS clients who identified as Aboriginal and had accessed services within the period 2014 – 2019. A total of eight interviews with clients or family members occurred to discuss their health experience following the Brain Injury. An iterative process was used where interview data was initially inductively coded and categorised through thematic analysis then deductively mapped back to themes consistent with the Theory of Access framework.

RESULTS: The file audit identified general trends relating to clinical pathway and service usage. Themes identified through the interviews highlighted consistent factors that then contributed to improving access and influenced our ongoing service delivery to Aboriginal people. Principal study outcomes included;

* Access to a service can be optimised through an iterative process of developing a series of culturally appropriate strategies
* Culturally safe and responsive services encourage Aboriginal people to access services.
* Flexibility in service delivery is vital to ensuring a person-centred approach. Services should focus on and address what is important to the person including individual beliefs, needs and goals.
* Creation of a genuinely effective partnership between Brain Injury staff and clients is vital for rehabilitation to be effective.

CONCLUSIONS: The Dunghutti Muri Project has demonstrated that access to a service can be optimised through an iterative process of developing a series of culturally appropriate strategies including the employment of a dedicated Aboriginal Health Worker.

Adapting MNCBIRS service delivery and structure to meet the needs of Aboriginal people and improve health outcomes is consistent with the recommendations in the NSW Aboriginal Health Plan 2013-2023 to address Aboriginal health care disparities.

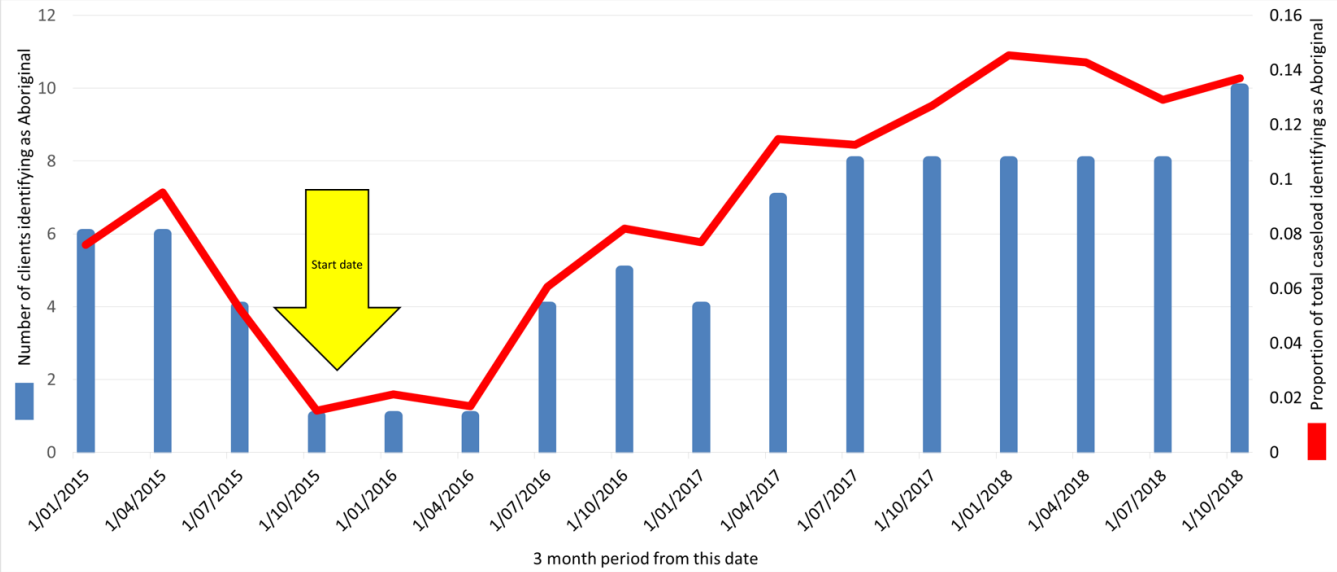
IMPLICATIONS FOR PRACTICE: The development of the project has created a collegial collaborative approach guided by local Aboriginal people.

Combining the experience of Aboriginal people with TBI with the cultural knowledge of local Aboriginal Communities and specific expertise of MNCBIRS clinicians will contribute to developing a framework for improving access to rehabilitation. This model has relevance and transferability to a multitude of clinical areas and settings.

EXECUTIVE SUMMARY

A noticeable but unexplained reduction in clients identifying as Aboriginal being referred to and accessing MNCBIRS occurred after mid-2015 (see Figure 1).

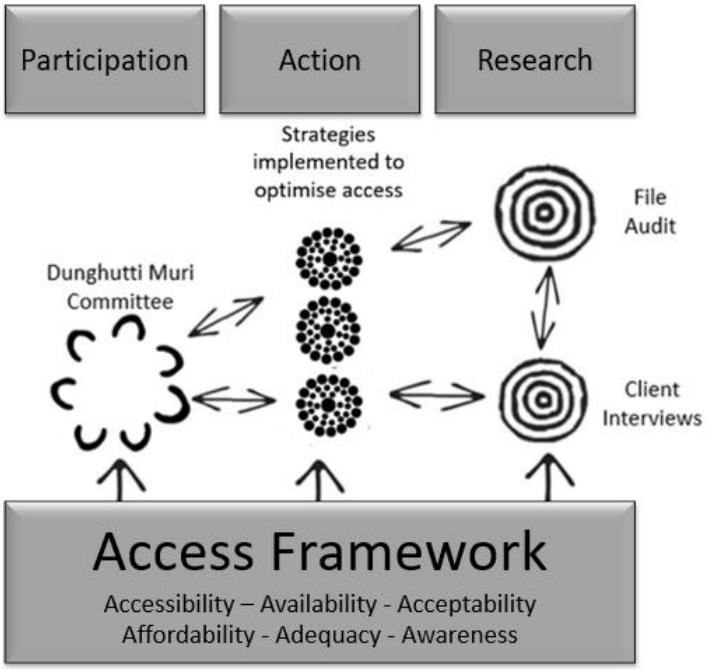
Figure 1. Hastings Macleay MNCBIRS Caseload per quarter - People Identifying as Aboriginal and Project Start Date



An audit of intake referrals indicated that very few Aboriginal clients were being referred from typical referral sources (such as local GPs and ED) and that Aboriginal clients were not remaining engaged with the service during the time rehabilitation works best.

The Dunghutti Muri project was initiated in October 2015 (see Figure 1) initially to improve referrals but evolved into a process aiming to optimise access to MNCBIRS for Aboriginal people through a range of culturally appropriate strategies (see Figure 2). This included the employment of a dedicated Aboriginal Health Worker during 2018 (see Table 1).

Figure 2. Dunghutti Muri Project Structure



The development of the project has created a collegial collaborative approach guided by local Aboriginal people.

☑ A governing committee that includes local Aboriginal people and clinicians with rehabilitation expertise was convened to develop the project and oversee project deliverables.

☑ Funding for a dedicated Aboriginal Health Worker was secured from ACI. The Aboriginal Health Worker helped facilitate culturally appropriate care, increase awareness of the benefits of accessing rehabilitation services and helped identify enablers and barriers for local Aboriginal people accessing and engaging with MNCBIRS.

☑ The MNCLHD - RSGP funding grant contributed to the employment of a Research Project Officer to evaluate the project.

Research activities included a file audit to identify general trends relating to clinical pathway and service usage. Previous and current clients of the service have also been interviewed about their health experience following Brain Injury. Themes identified through the interviews highlighted consistent factors that have optimised access and influenced our service delivery to Aboriginal people. Principal study outcomes included;

* Access to a service can be optimised through an iterative process of developing a series of culturally appropriate strategies

* Culturally safe and responsive services encourage Aboriginal people to access services.

* Flexibility in service delivery is vital to ensuring a person-centred approach. Services should focus on and address what is important to the person including individual beliefs, needs and goals.

* Creation of a genuinely effective partnership between Brain Injury staff and clients is vital for rehabilitation to be effective.

The project has support from the NSW Brain Injury Rehabilitation Program and as such will benefit from the rollout of a model of care and resources developed as part of this project. Although this project will apply specifically to MNCBIRS, we envisage the lessons are transferable across a variety of health settings.

The NSW Aboriginal Health Plan 2013-2023 highlights that it is clear that we need to change the way we look at and deliver Aboriginal health care to address disparities. Modifying our service delivery to meet the needs of Aboriginal people and improve health outcomes is consistent with this. The Dunghutti Muri Project highlights the need for ongoing action on behalf of service providers to optimise access for all people.

Combining the experience of Aboriginal people with TBI with the cultural knowledge of local Aboriginal Communities and specific expertise of MNCBIRS clinicians will contribute to the development of a framework for improving access to rehabilitation. This model has relevance and transferability to a multitude of clinical areas and settings.

INTRODUCTION

The Dunghutti Muri project specifically aimed to optimise access, patient experiences and therefore the broader health outcomes for Aboriginal people with a brain injury living within the MNCLHD. The initiative included carers and families of the people with a brain injury. The project was named during initial consultation with Aboriginal Health Workers in Kempsey; 'Muri' is the Dunghutti word for 'brain'.

This project arose from a perceived lack in engagement of local Aboriginal people with the Mid North Coast Brain Injury Rehabilitation Service (MNCBIRS). Rehabilitation that begins early produces better functional outcomes for almost all health conditions associated with disability (World Health Organization 2011). Rehabilitation services are most effective during the initial two-year period post brain injury. Lack of service engagement during this vital period was of concern.

In Mid 2017 caseload numbers of people identifying as Aboriginal from the Kempsey area was poor, referrals of Aboriginal people from typical referral agents were particularly poor (see Figure 1. and Table 1). Following implementation of a variety of strategies relatively prompt improvement in referral and caseload numbers was noted.

Table 1. Timeline of Dunghutti Muri Project with notable events

Oct 2015	Low caseload numbers identified Project initiated Meeting and education sessions at Durri ACMS
July 2016	Meetings at Kempsey District Hospital with ED staff and Aboriginal Health Staff
Mar 2017	Meetings at Kempsey District Hospital with ED staff and Aboriginal Health Staff
July 2017	Dunghutti Muri Project committee formed ACI research grant for 0.4 FTE Aboriginal Health Worker awarded MNCLHD - RSGP funding grant for 0.2 FTE Project Officer awarded
Oct 2017	0.2 FTE Project Officer employed
Feb 2018	Acceptance onto HETI Rural Research Capacity Building Programme (CS) 0.4 FTE Aboriginal Health Worker employed
Mar 2018	AH&MRC, HREC and SSA Ethics submission
May 2018	AH&MRC Ethics approval
July 2018	Participation in NAIDOC week family fun day
Aug 2018	HREC Ethics approval date Presentation and eposter at MNCLHD Innovation and Research Symposium
Sept 2018	SSA approval date Poster presentation at 7th Rural Health and Research Congress Presentation at Emerging Research breakfast 7th Rural Health and Research Congress File Audit and Interviews initiated
Feb 2019	Presentation to the ACI BIRD directors and managers meeting
June 2019	Completion of 8 interviews
July 2019	Participation in NAIDOC week family fun day Visit to Ingham Institute Brain Injury Rehabilitation Research Group Grahame Simpson
Aug 2019	Meeting with Tony Lower and Nicole Raschke re project and future directions
Sept 2019	Meeting with Ro Stirling Kelly Consumer Engagement Coordinator CTG application for project relating to DV submitted RRCBP draft report submitted
Oct 2019	Presentation at 8th Rural Health and Research Congress
Nov 2019	RRCBP final report submitted Presentation to ACI BIRD forum
May 2020	ACI Research Showcase presentation

Despite this improvement in caseload numbers it was anticipated that improved access and engagement of local Dunghutti Aboriginal people with the Mid North Coast Brain Injury Rehabilitation Service (BIRS) would improve overall health outcomes. The research component of the project aimed to determine the effect of a range of practical strategies relating to culturally appropriate care including the employment of a dedicated Aboriginal Health Worker (AHW) during 2018. This was consistent with contemporary NSW Health reform initiatives focusing on volume to value driven care (Koff 2016).

The Aboriginal Health Worker helped identify enablers and barriers for local Aboriginal people accessing and engaging with the service as well as increasing awareness of the benefits of accessing rehabilitation services. We envisaged the impact of employing a dedicated Aboriginal Health Worker may include facilitating culturally appropriate care, creation of culturally appropriate resources, bridging communication divides, reducing self-discharge prior to referral, providing cultural education, increasing patient contact time, improving notification from Emergency Department (ED), follow-up practices following discharge from ED and enhancing patient referral linkages such as through Durri the local Aboriginal Corporation Medical Service (ACMS).

The research agenda was deemed consistent with the needs of local Aboriginal people by the Durri Aboriginal Corporation Medical Service (ACMS) and a letter of support was provided by this organisation's Chief Executive Officer. To ensure the health needs and interests of Aboriginal people an Aboriginal Health Impact Statement was completed. Insights from the Aboriginal Cultural Security and Safety Framework Research Project informed the design and progress of the project. Membership of the committee overseeing the governance of Dunghutti Muri Project included Aboriginal Health Worker MNCBIRS, Indigenous Health Project Officer North Coast Primary Health Network, Aboriginal Project Officer Integrated Primary Care MNCLHD, Aboriginal Health Workers from MNCLHD and Acting Aboriginal Health Coordinator Hastings Macleay MNCLHD.

The Research Project Officer CS participated in HETI's 2018 Rural Research Capacity Building Programme. The two-year experiential research program is underpinned by a curriculum and a competency-based framework covering major aspects of the research process. Individuals are awarded a place in the Programme based on their involvement in a research project with direct relevance to advancing rural health. CS is a novice researcher with some project management experience.

The intended audience for this document includes researchers, health service directors, health managers and executives, health professionals and the broader community. The Dunghutti Muri project has support from the NSW Brain Injury Rehabilitation Programme, resources developed as part of this project will act as preliminary work for development of a model of care to improve health outcomes for Aboriginal communities across NSW. Although this project applied specifically to improving services and health outcomes specific to people with a brain injury, it is envisaged that the approach utilised during implementation of the Dunghutti Muri project is transferable across a variety of health settings.

LITERATURE REVIEW and RATIONALE

Acquired brain injury (ABI) refers to any damage to the brain that occurs after birth. That damage can be caused by trauma (i.e. traumatic brain injury or TBI), hypoxic injuries, brain tumours, vascular diseases such as a stroke, an infection such as meningitis, or by degenerative conditions such as Parkinson's disease (Synapse 2019). The degree of recovery after a brain injury is strongly influenced by rehabilitation - the process of restoring as much ability and quality of life as possible after an injury has occurred (Synapse 2019).

The concept of rehabilitation is broad. The World Health Organization (2011) defines rehabilitation as 'a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments'. Early, intensive rehabilitation aids recovery and improves outcomes for people with moderate to severe traumatic brain injury. (Königs M, Beurskens EA, Snoep L, et al. 2018).

NSW Brain Injury Rehabilitation Programme (NSW BIRP) has 15 dedicated specialised rehabilitation services for both adult and paediatric clients primarily with traumatic brain injury (TBI). The Mid North Coast Brain Injury Rehabilitation Service (MNCBIRS) provides rehabilitation services and short-term case management to people in the Mid North Coast Local Health District footprint. Practice guidelines developed by NSW BIRP highlight the priority criteria for accessing MNCBIRS:

- •Moderate to severe traumatic brain injury (up to 5 years post injury); and
- •Rehabilitation goals relating to cognitive or psycho-social dysfunction which is a result of the brain injury; or
- •Requiring assistance with transition from hospital to living back in the community
- •Aged 4 to 65 years

Acceptance and prioritisation of referrals outside of the core client group criteria is dependent upon service capacity.

The prevalence of brain injury in Aboriginal and Torres Strait Islander people is particularly high, with the community three times more likely to experience brain injury. (Katzenellenbogen et al., 2010; You, Condon, Zhao, & Guthridge, 2015). Figures are thought to underestimate the true incidence (Katzenellenbogen et al., 2016; Thrift, Cadilhac, & Eades, 2011). Existing literature suggests Indigenous Australian women are disproportionately represented among those hospitalised for head injury (Katzenellenbogen et al., 2018), with a significant proportion due to assault (Jamieson et al., 2008).

Despite the greater prevalence of brain injury, Armstrong (2019) found that Aboriginal people access rehabilitation services at a lower rate than the general population. Armstrong (2019) identified barriers to accessing health services related to communication breakdowns, distance from facilities, and previous negative experiences with services. Jesus and Hoenigh (2015) state that barriers impacting access for Aboriginal people to healthcare, and thereby rehabilitation services, include discrimination, lack of cultural safety, distance from home and out of pocket healthcare costs. Aboriginal people who have sustained a brain injury are even more vulnerable to these barriers (Armstrong 2019). Armstrong's (2019) research suggested the absence of Aboriginal people in rehabilitation services has often led largely non-Aboriginal practitioners to assume they simply do not want therapy. Armstrong's interviews with Aboriginal people with a brain injury in Western Australia found they wanted more information and education about brain injury, and more practical support along their rehabilitation journey.

The NSW Aboriginal Health Plan 2013-2023 highlights that to address disparities it is clear that changes must be made to the way Aboriginal health care is looked at and delivered. Ensuring service delivery through MNCBIRS is sufficiently flexible to meet the needs of Aboriginal people is consistent with this. It was envisaged that a range of culturally appropriate strategies would optimise access for Aboriginal people and therefore improve health outcomes. This included the employment of a dedicated Aboriginal Health Worker - a novel approach for any of the 15 Brain Injury Rehabilitation Services across NSW. The employment of a locally based dedicated Aboriginal Health Worker is well supported by culturally safe health practices. "First level contact with Aboriginal Health Workers gives Indigenous people some cultural safety and they usually feel more comfortable relating to another

Indigenous person…Cultural safety…refers to an environment where clients, families and community members have health care choices and their values and attitudes respected" (Tsey, 2006).

Penchansky and Thomas (1981) defined access as the degree of fit between the user and the service; the better the fit, the better the access. The Theory of Access developed by Penchansky and Thomas (1981) and modified by Saurman (2016) suggests access is optimised by accounting for a number of different dimensions including accessibility, availability, acceptability, affordability, awareness and adequacy in service design, implementation and evaluation. These dimensions are independent yet interconnected and each is important to assess the achievement of access. This theory enabled conceptualisation of the approach used for the Dunghutti Muri Project, most relevant are dimensions relating to the provision of culturally appropriate care and effective communication.

By its very nature, rehabilitation adopts a biopsychosocial model which works with, and recognises, the individual within their context and uses a person-centred approach. Strategies implemented during the Dunghutti Muri project were underpinned by a person-centred approach. The Clinical Excellence Commission (2019) highlights that providing care using a patient-based care model ensures that care is respectful of and responsive to individual patient preferences, needs, and values. The model focuses on the relationships clinicians build with patients, family and carers as partners in health care delivery. ACI Rehabilitation Network's document Principles to Support Rehabilitation Care (2019 seeks to address key service delivery principles for Aboriginal peoples to Close the Gap including engagement and access. The document outlines that to be effective, rehabilitation programs need to be holistic, culturally safe and centred on respect and trust. Rehabilitation programs should ensure they consider the following components;

- Have flexibility and a person-centred approach, focusing on the specific needs of the individual.
- Develop ways to build trust and relationships with patients, noting the importance of yarning.
- Develop rehabilitation programs for use by the whole family.
- Have both male and female Aboriginal health staff if possible.
- Provide participants with culturally appropriate information about managing their ongoing rehabilitation needs, including local content on who to access for post-discharge services.
- Develop cultural competencies among staff.
- Consider opportunities for rehabilitation program staff to partner with Aboriginal medical services, Aboriginal health workers, Aboriginal community-controlled health services and non-government organisations in the delivery of services.

We predicted that combining the experience of Aboriginal people with TBI with the cultural knowledge of local Aboriginal Communities and specific expertise of MNCBIRS clinicians would develop a framework for improving access to rehabilitation. The model has relevance and transferability to a multitude of clinical areas and settings.

RESEARCH AIM and QUESTION

The Dunghutti Muri project aimed to optimise access to the Mid North Coast Brain Injury Rehabilitation Services (MNCBIRS) for local Aboriginal people via a range of culturally appropriate strategies. Potentially modifiable factors to optimise access were initially identified, then developed and implemented over 2017 - 2019. This included the employment of a dedicated Aboriginal Health Worker for MNCBIRS.

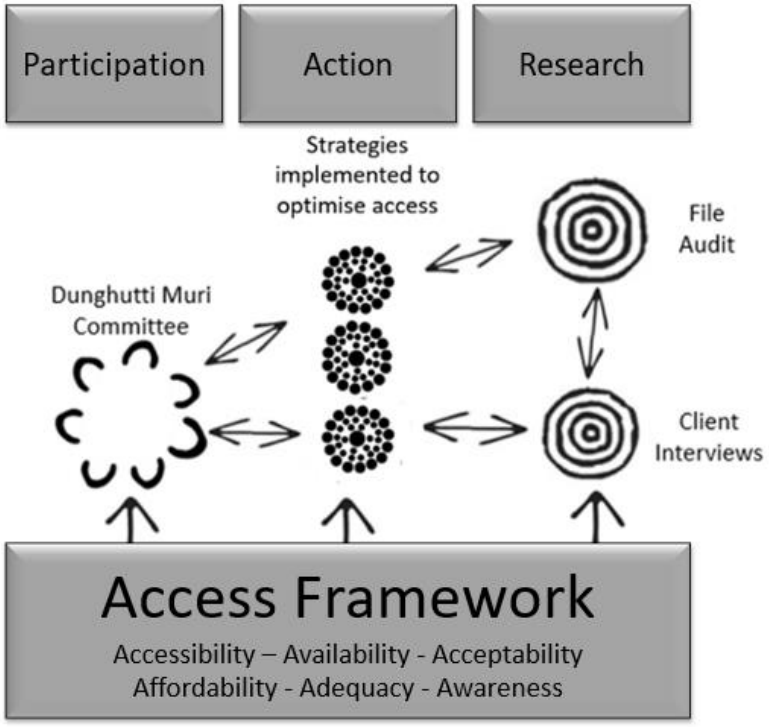
An investigation into the overall effectiveness of implemented strategies, users' opinions and experiences was the research focus.

METHOD

Theoretical Framework and Study Design

The Dunghutti Muri Project utilised an action research methodology seeking transformative change through the simultaneous process of taking action and doing research (Lewin 1946). Greenwood and Levin (2007) provide a definition of action research that involves the three elements of action, research and participation. Figure 1 illustrates the structure of the Dunghutti Muri Project and provides a diagrammatic representation of how the various critical elements interacted and informed each other, while being underpinned by a framework based on Theory of Access (Penchansky and Thomas 1981, Saurman 2016).

Figure 2. Dunghutti Muri Project Structure



The project was structured as a targeted recalibration to improve capacity. Elements were developed as the project progressed with lessons informing further refinement. This iterative approach employed a cyclic process of prototyping, implementing, evaluating, and refining actions informed by the ongoing research in consultation with the committee.

Participation; A governing committee that included local Aboriginal Health Staff, a Brain Injury researcher, Brain Injury Managers and Clinicians with expertise working in the field of Brain Injury was convened to oversee the project design, interpret the research findings, identify appropriate actions such as the implementation of a range of culturally appropriate strategies including the employment of a dedicated Aboriginal Health Worker.

Action; Examples of strategies implemented to optimise access are outlined in Appendix 1. Strategies were informed by the dimensions of access described by Saurman (2016). These activities occurred in the context of the governing committee providing ongoing consultation, cultural commentary and recommendations.

Research; Research activities included a file audit to identify general trends relating to clinical pathway and service usage. Previous and current clients of the service were interviewed about their experience accessing information, services, care and support following their Brain Injury. Exploratory thematic analysis (Braun & Clarke, 2006) was used to identify and analyse patterns within the interviews conducted as part of the research.

Participant Selection and Participants

Purposive sampling: interview participants were identified from MNCBIRS medical records; they had accessed services from MNCBIRS within the period 2014 – 2019 and identified as Aboriginal. A total of twenty-seven patient files were identified as meeting the criteria for file audit. A letter was posted to the home address these potential participants' inviting them to participate in an interview relating to their health experience following a brain injury including their perceptions of the service provided by MNCBIRS. The letter introduced the researcher and outlined the rationale for the study (see Appendix 2). Phone calls to potential participants inviting participation were then made. A total of eight interviews were conducted. Inability to contact was the primary reason for non-participation.

Methods of Data Collection

Pre-interviews

A baseline file audit was used to identify general trends relating to clinical pathway and service usage. Audit data was collected from clinical health records of twenty-seven MNCBIRS clients who identified as Aboriginal. Files were reviewed for general demographic information, patterns relating to referral sources, therapy and treatment, outcomes following rehabilitation and factors thought to indicate engagement such as occasions of service, services utilised and time from initial contact to discharge. Data extracted from medical records was entered into an Excel spreadsheet. This clinical data was aggregated and deidentified prior to analysis. Procedures complied with Privacy Manual for Health Information (2015).

Semi-structured interviews were used to explore the experiences of participants, the meanings they attribute to these experiences and their thoughts relating to the cultural appropriateness of service access. The ultimate intention of the interviews was to identify potentially modifiable factors for improving health care via the MNCBIRS. Participant preferences were considered and allowed for when organising interviews e.g. interviewer and interview setting. A framework of themes to be explored was adapted from an interview format developed by ACI to develop a model of care for acquired brain injury rehabilitation service in rural and remote NSW (see appendix 3). Open questions were constructed to encourage general discussion and candid comments regarding access. Interview questions and format were tested in a pilot interview and indicated no adjustments were deemed necessary.

Peri-interviews

Interviews were carried out by two members of the project team (VS and CS, both non Aboriginal MNCBIRS clinicians, a female OT and a male SP) and digitally recorded with the participants' consent. A description of the research study was repeated to interviewees prior to their participation in the interviews. An offer to return transcripts for comment and/or correction was made but not accepted by any participants. A semi structured interview method was selected to permit diversions, allowing new ideas from interviewee comments to be responded to and discussed. No repeat interviews were carried out. One interview was terminated early at the request of the participant (due to fatigue). Interviews varied in length from 9 – 150 minutes.

Post-interviews

Interviews were transcribed by KR and MH. Completed written transcripts were checked by CS and VS while listening to the recorded interview.

Analysis was informed by other sources of data included field notes and reflections taken for the duration of the project and research. Minutes of the Dunghutti Muri Committee meeting noted directions and discussions relating to the development of the project and ongoing feedback relating to actions taken as part of the project.

Data Analysis

Descriptive statistics were developed summarising file audit data.

All interviews were initially analysed inductively using an exploratory thematic analysis (Braun & Clarke, 2006), a method that identifies and analyses patterns within a dataset in order to identify meanings that are valid for the majority of participants. Braun and Clarke's (2006) six phases of thematic analysis guided the process of data analysis. Summary reports of the interviews were read by members of the research team (CS, VS, GS, DK) to identify initial ideas and trends in the data. Codes with similar content were grouped into potential themes and sub-themes via cut and paste from transcripts to a word document. A set of initial codes was generated collaboratively by two of the researchers (CS and DK). Three researchers (CS, VS, and GS) deductively mapped codes back to potential themes consistent with the Theory of Access framework. Additional identified themes that did not align directly with the Theory of Access framework were also identified. Potential themes were circulated for comments from the research team. Themes were collated and refined collaboratively during committee meetings and ongoing discussions with core members of the research team (particularly DK in the role of Aboriginal Health Worker to ensure a cultural lens was applied). Once clear, identifiable distinctions between themes were developed, a manuscript was circulated for comment among committee members. The final stage of analysis focussed on explaining the meaning and implications of each of these themes (Braun &Clarke, 2006).

Ethical Approval and Considerations

An Aboriginal Health Impact Statement was submitted on 15/3/18. This statement considered the health context for Aboriginal people, the potential impact of the study on Aboriginal people (including approaches to mitigate any potential undesired effects) and engagement with Aboriginal people.

The study was submitted for concurrent approval from AH&MRC, HREC and SSA on 6/3/18. Approval from AH&MRC was received on 16/5/18 (HREC Reference number: 1374/18). NCNSW HREC approval was received on 31/7/18 (approval number: 529N, reference number: HREC/18/NCC/36). Site Specific Assessment approval was received on 8/8/18 (HREC reference: HREC/18/NCC36, SSA reference: SSA/18/NCC/71). No variations regarding the study process were submitted. Normal ethical considerations such as informed consent, no deception, right to withdraw without consequence and confidentiality were maintained throughout the study.

FINDINGS

File Audit

A file audit of potential interview participants was conducted to elicit general trends relating to clinical pathway and service usage. All clients identified as Aboriginal and were seen in period 2014 – 2019.

Relevant additional information and interpretation of file audit;

In general, there were expected proportions of females (8/27) and children (10/27) included in the group accessing the service. Brain Injury Rehabilitation Directorate data indicates the ratio of patients is typically 3.4 males to 1 female, and that children 5-14 year olds accounted for 21% of all BIRP client intakes.

Compared to other BIRS, files examined for this study contained a relatively large proportion of non TBI brain injuries (6/27) and mild TBI (5/27). Although eligibility criteria for brain injury rehabilitation services is determined at a state-wide level there is some scope for flexibility at the local level with decisions able to be made on a case by case basis. This enabled acceptance of referrals for clients with mild brain injuries and clients with non TBIs and this was reflected in findings from the interviews. Interaction with local Aboriginal community members during surveys carried out during 2018 and 2019 NAIDOC week events indicated that brain injuries resulting from domestic and family violence (DFV) and assault go under-reported and people simply do not access appropriate services post injury. Brain Injury Rehabilitation Directorate data indicates that the prevalence of mild TBI is likely to be underestimated due to classification and diagnostic errors and because a large proportion of people with mild TBI do not present to hospital

Severity level of moderate to severe TBI is determined by alteration of consciousness/mental state, loss of consciousness, post-traumatic amnesia and Glasgow Coma Scale. The relatively high number of 'no data' 10/27 relating to severity of injury was due to non TBI diagnosis or incomplete file information.

Table 2. Summary of File Audit; demographics of clients and characteristics of their clinical pathway and service usage

Total client files audited			27 (100%)
Age at injury	Children (n = 10)	Mean	12.73 years
		Median	14.47 years
		Range	1.37 – 17.91 years
	Adults (n = 17)	Mean	32.56 years
		Median	28.66 years
		Range	18.09 – 53.97 years
Gender		Male	19 (70.3%)
		Female	8 (29.6%)
Cause of injury		TBI MVA	8 (29.6%)
		TBI Fall	6 (22.2%)
		non TBI	6 (22.2%)
		TBI Assault	3 (11.1%)
		TBI Sport	3 (11.1%)
		TBI Strike	1 (3.7%)
Severity of injury*		Mild	5 (18.5%)
		Moderate	5 (18.5%)
		Severe	7 (25.9%)
		No data or not applicable	10 (37%)
Referral sources		GP Durri ACMS	6 (22.2%)
		Kempsey District Hospital	2 (7.4%)
		Port Macquarie Base Hospital	8 (29.6%)
		Other	11 (40.7%)
Time from injury to referral		Mean	1.77 years
		Median	24 days
		Range	Same day – 15.77 years
		<7 days	5 (18.5%)
		week - month	9 (33.3%)
		month - year	6 (22.2%)
		1 year – 2 years	3 (11.1%)
		>2 years	4 (14.8%)
Time from referral to first contact		Mean	7 days
		Median	4 days
		Range	Same day – 47 days
		same day	8 (29.6%)
		1 day – week	9 (33.3%)
		week - fortnight	6 (22.2%)
		fortnight - month	3 (11.1%)
		>month	1 (3.7%)
Length of engagement**		Mean	2.22 years
		Median	0.85 years
		Range	0 days – 20.42 years
Discharge reason***		Treatment complete	14 (51.9%)
		No current goals	8 (29.6%)
		No contact	7 (25.9%)
		Other reason	9 (33.3%)

*Classified according to the definition used by the Veterans Health Administration and Department of Defense (VA/DoD)
** Initial referral to most recent discharge from service
*** May be multiple reasons
All results are n (%) unless stated

Interviews

Eight interviews occurred with previous Aboriginal clients or family members. Six out of eight interview participants were in carer roles or were parents of children or adults with a brain injury.

Interviews explored issues around access and appropriateness of service provision.

Table 3. Description of Interview Participants and Interview Circumstances

Participant number	Description of participants	Interview
001	Father of male child with TBI	Solo via phone
002	Adult female with non TBI and three other family members	Small group, face to face
003	Mother of male child with TBI	Solo via phone
004	Adult male with TBI	Solo, face to face
005	Adult male with TBI	Solo via phone
006	Mother of adult male with TBI	Solo via phone
007	Mother of male child with TBI	Solo via phone
008	Carer of adult female with non TBI	Solo via phone

Themes were identified that together characterised the experience of the participants. Many identified themes were consistent with dimensions described in Penchansky and Thomas' Access Framework adapted by Saurman (2016); accessibility; availability; acceptability; affordability; awareness; and adequacy in service design, implementation and evaluation. Saurman highlights that these dimensions are independent yet interconnected and each is important to assess the achievement of access. This was consistent with the themes that emerged from the research data; comments appeared to interact and overlap with each other. Not all dimensions were specifically mapped to comments in the interviews and this may be primarily related to the nature of MNCBIRS e.g. no relevant comments were identified regarding affordability (i.e. financial and incidental costs) but MNCBIRS is a free service. Other identified themes did not align with the Access Framework but appeared consistent with the overarching premise of Person Centred Care.

Access Related Themes

Accessibility i.e. Location; an accessible service is within reasonable proximity to the consumer in terms of time and distance. Convenience of appointment location; particularly the home environment, was considered important, particularly for parents and other carers who highlighted that home visits were convenient. MNCBIRS habitually offers appointments for Macleay clients in that locale. Home visits are offered as required.

> *Yeah, yeah because, especially after an accident or something, it's too hard to get out the door, it's too hard to go to a million appointments, you know, potentially with someone that's not well. Yes, it makes perfect sense for me, it makes it easier (003)*

> *I think it would be better if it was there because it's their place that they're comfortable in and they're not going to a new place that they know nothing about … like they would feel comfortable in their own setting and …you know you're always more comfortable and more receptive to…things that you will be doing if they were in their own environment, I think. If you're in your home where you feel safe … I think it's better (008)*

Availability i.e. Supply and demand; an available service has sufficient services and resources to meet the volume and needs of the consumers and communities served.

Participants particularly highlighted this as a helpful aspect, possibly due to previous negative experiences with other services. One interview participant highlighted the benefits of availability over a relatively lengthy period of

time, this was consistent with data from the file audit that showed ongoing contact with an MNCBIRS clinician over more than 20 years.

> *…she has been brilliant for twenty odd years and I dread the day when she hangs her hat up. …it's not like we have heaps of contact but whenever we need her she is always there with the door open, so there is nothing I can say but positivity about her. (006)*

One participant highlighted that although the client was initially not ready for appointments, they appreciated that services were still available.

> *I think that it was good that you were messaging, because we knew that you cared, we knew you still wanted to make an appointment, whereas with XXX, they rang once, she said she didn't want to do it and we didn't hear from them again. There was no further contact, where as you were messaging and saying are you ready for an appointment? It was good we knew that you were still there for her, whereas they went alright another person ticked off the box and moved onto the next person.(002)*

Acceptability i.e. Consumer perception; an acceptable service responds to the attitude of the provider and the consumer regarding characteristics of the service and social or cultural concerns.

This was the primary focus of the Dunghutti Muri Project. Ongoing consultation throughout the Dunghutti Muri Project occurred with the Aboriginal Health Worker to ensures culturally appropriate care. Although not all interview participants had contact with an Aboriginal Health Worker, their opinions regarding preferences were investigated particularly regarding an Aboriginal Health Worker making initial contact to establish trust.

> *It's just with the whole Kempsey dynamics it's very… Aboriginal and non-Aboriginal, it's like a very straight line down the middle. So to have … a non-Aboriginal turn up and could have a very negative impact where if an Aboriginal person turned up they'd be more welcoming and comfortable (007)*

> *I would at least like one Aboriginal worker, at least one… well they could take me fishing, they could take me to the beach even though I hate water, they could take me anywhere, who knows… because they're more energetic, they're more wanna have fun, a lot of fun, it's cool. (004)*

> *no Aboriginals had a career in doing that…and I thought that was unfair, truly (004)*

Culturally appropriate resources were developed for the project but discussions with Consumer Engagement Officers regarding culturally tailored resources indicated they were not always necessary and a person centred approach was most appropriate; simply enquiring about personal preferences for service delivery.

Initial consultation with a number of Aboriginal Health Staff suggested that the word 'rehabilitation' be omitted from communication due to connotations with drug rehabilitation. This strategy was incorporated into verbal communication with clients. However, interviews indicated this wasn't always necessary and personal preferences took precedence. Opinions regarding this were possibly affected by the relatively large proportion of interview participants who were parents and simply didn't think this was an issue for their child.

> *Not me personally but, I can see possibly where there coming from, personally I think they're being a bit over sensitive though. When people hear the word rehabilitation, they think drug and alcohol, a lot of people don't realise there's many different forms of rehabilitation. (007)*

Arrangements were also made to offer appointments in the Wutu room at Kempsey District Hospital if required (this is a culturally appropriate space specifically developed during the redevelopment of KDH).

> *yeah that room sounds awesome (007)*

The possibility of stigma associated with disability had been deliberated regularly during Dunghutti Muri Committee meetings as a barrier to accessing services. This was recognised and efforts were made to diminish this effect. However, one participant alluded to stigma while discussing the use of the Wutu room at KDH.

> *Yeah, I reckon that's good, but I wouldn't call it a 'special room'… it maybe should be known as the 'family room'… I think as long as people explain that, it's like a family room then I think that's a good idea (008)*

Affordability i.e. Financial and incidental costs; Affordable services examine the direct costs for both the service provider and the consumer.

The lack of comments regarding this area possibly related to the nature of MNCBIRS i.e. a free service. But in the context of Saurman's (2016) discussion of the dimensions of access, additional barriers relating to costs can only dissuade clients from service utilisation. The need to maintain affordability via continued provision of a free service is paramount for addressing equity of access.

> *I'm more than happy to travel for appointments, you live in a rural or semi-rural community, you have to be prepared to travel but then saying that if you get a referral through Durri, they help cover the cost of travel anyway (007)*

Adequacy / Accommodation i.e. Organisation; An adequate service is well organised to accept clients, and clients are able to use the services.

Ongoing efforts to create sustainable referral pathways occurred during the Dunghutti Muri Project.

> *Yeah, definitely, I didn't even know you guys existed until RRR (GP), he's amazing but I don't know about any of the other GPs, whether they … they're not that crash hot with referrals and stuff at the moment (007)*

Although eligibility criteria for brain injury rehabilitation services is determined at a state-wide level there is some scope for flexibility at the local level with decisions able to be made on a case by case basis. This enabled acceptance of referrals for Aboriginal clients with mild brain injuries and clients with non TBIs and this was reflected in findings from the file audit.

Interviews revealed that a client's initial resistance to use a service may require persistent effort on behalf of the clinician to enable use of the service.

> *…with VVV, she was just so persistent… and MMMM would be quite rude to her and she'd turn up the next week with that smile; "I'm back again MMMM"…But once she won him over he still has a very fond relationship with her, he still feels he can just ring up and say G'day (006)*

> *I think that it was good that you were messaging, because we knew that you cared, we knew you still wanted to make an appointment (002)*

Awareness i.e. Communication and information; A service maintains awareness through effective communication and information strategies with relevant users (clinicians, patients, the broader community), including consideration of context and health literacy.

The project initially targeted increased awareness of typical referral agents such as Kempsey ED and Durri ACMS. Local Aboriginal Health Workers likely to encourage appropriate referrals were also made aware of the service.

The role of the Aboriginal Health Worker making initial contact was highlighted by one participant.

> *that was good because that got the ball rolling – no that was excellent yeah (001)*

Throughout the project MNCBIRS participated at local events likely to be attended by Aboriginal people e.g. NAIDOC week activities, local sporting events.

Yeah, yeah, no, I think that's good 'cause I actually play rugby league myself and I had a bit of a concussion on the weekend, so yeah, I think that would be good, that'd be great (003)

Promotion of MNCBIRS via social media (Facebook) also occurred as indications were that due to relatively high usage this may be an effective communication tool with local Aboriginal people. Participants revealed that this may be dependent on individuals though.

I think that's a good idea, I think it's better to be known and people know that you are there if you're needed than people having no idea until they really need it (008)

If people think that their kids are going to be fine or that they're fine and they're in denial, seeing it on social media might not really hit home until the GP goes 'I think you need this', but then on the same token, if it's on social media and other people see it and think 'you might have a problem' then they can point you the direction, so a bit of both (007)

Other Person Centred Care Related Themes

Identified themes lying outside the Theory of Access included themes consistent with the underlying premises of person centred care:

Rapport;

Development of rapport between MNCBIRS staff and clients was considered the best way to develop trust and a working relationship. The use of a yarning to develop rapport and build a respectful relationship was referred to by participants.

...you're building rapport ...you find out what their interests are and then you can use it as examples in the things that you're working on ...and they would see that you've listened to them and find out what they like and what they don't like and you know they feel more trustworthy towards you (008)

Some clients who mentioned rapport as significant had a longevity of engagement with the service that was reflected in their file audit data.

...he still feels he can just ring up and say G'day (006)

I still ring Vicki whenever I've got issues, I'm her life time pimple (005)

Coordination and integration of care; particularly with provision of assistance with navigation of a complex system.

The benefits of MNCBIRS Clinicians and Aboriginal Health Workers enabling clients to use services by explaining and assisting with system navigation and recommendations was mentioned a number of times by participants.

...because when your brain's damaged people need answers, you know, they're confused on where to go, what to do and what's available to them and that's a life time frustration (005)

VVV always tries to point me in the right direction of this mob that mob (005)

Yeah it was all good mate yeah ...I understood most of it...why it was done...what was happening. When it was happening. Why we had to do 2 days for the assessment. Yeah ... I don't think you could've done anything more or anything different I think it was all excellent. I'm happy with the whole lot actually (001)

Provision of Information and Education;

The expert clinical knowledge and experience of MNCBIRS clinicians was considered noteworthy by participants.

…she was always there and if she didn't know she would certainly find out. The best thing was, she is so supportive and she won MMM over and that was no mean feat, (006)

I think that yous are doing are great job and I think that yous are trying really hard and doing all the right things and a fountain of information and yeah, I'm really glad to be a part of this (007)

Participants valued a genuinely effective partnership with Brain Injury staff clinicians and this engendered trust and made people feel comfortable. This also appeared to enhance compliance with recommendations and encourage long term engagement.

There's been other times that I, I don't remember them all off the top of my head but yeah I've rung her and asked her advice for this or that and she's referred me through to different mobs like Headway or I'm in a Steps programme as well and ARBIAS (005)

…no matter what it is you put to her, she will get it done or have a solution or an answer (005)

Respect for clients' values, preferences and expressed needs;

Clients that were involved in decisions about their care felt their own personal values and priorities were considered have some level of control over the process.

I just think if you get to know the person, you find out what's going to help them the most and what strategies will help them compared to another person (008)

she was very firm on and wanted to make her own decision when she was ready to do it. She knew of the importance of doing these things, we all knew of it, but it was when she was ready to it. (002)

She likes getting the texts but because she can't text you back properly, she can only text a few words and then she's scrambling trying to get the sentence together and then she gets up and 'why bother!', but that depends on what frame of mind she is in as well that day, but it's good she knows that you are there and gives her safety net. (002)

I was given two paths and I took one path which in all honesty, I feel is the right path (004)

DISCUSSION

Findings support the concept that a range of culturally appropriate strategies can optimise access to MNCBIRS for local Aboriginal people.

Consistent themes were identified that together characterised the experience of the participants. Many identified themes were consistent with dimensions described in Penchansky and Thomas' Access Framework adapted by Saurman (2016); accessibility; availability; acceptability; affordability; awareness; and adequacy in service design, implementation and evaluation. Saurman highlights that these dimensions are independent yet interconnected and each is important to assess the achievement of access. This was consistent with the themes that emerged from the research data; comments appeared to interact and overlap with each other. Prevalence of certain themes was noticeable but not all dimensions were specifically mapped to comments in the interviews and this may be primarily related to the nature of MNCBIRS e.g. no relevant comments were identified regarding affordability (i.e. financial and incidental costs) but MNCBIRS is a free service. Other identified themes did not align directly with the Access Framework but appeared consistent with the underlying premise of Person Centred Care; the importance of building rapport, coordination and integration of care, provision of information and education, respect for clients' values, preferences and expressed needs.

STRENGTHS and LIMITATIONS

Study strengths:

This study provides much needed qualitative research on the experience of Aboriginal people following a brain injury.

The development of the project created a collegial collaborative approach with the cultural knowledge of local Aboriginal people guiding MNCBIRS managers and clinicians which then directed the project and informed the research. This process is generalisable to other populations as outlined in the recommendations below.

Study limitations:

The limitations of this work and the dearth of literature speak to the importance and need for future work in this area. Lack of existing information regarding the topic required an initial exploratory framework. As information emerged a relevant theoretical framework regarding access was utilised to provide direction.

The advisory committee overseeing the Dunghutti Muri project did not include any service users (i.e. Aboriginal people with a brain injury or their family members). To compensate for this feedback from service users was sought in the project design and implementation phases.

Incomplete documentation, information that was unrecorded, problematic verification of information and variance in the quality of recorded information meant the clinical file audit had limitations with inapplicable or missing data. To mitigate this issue, missing data was replaced with values estimated from other available clinical data.

Sample size was relatively small and a larger number of interviewees may have provided a wider representation of views. It is believed data saturation was not reached. It is unknown if different information may have been obtained if there were more interviews with people with a brain injury. A larger and more diverse sample might have identified a greater range of factors and been able to give more insight into how factors interact with each other or work differently for different people. Further research might elucidate additional factors, such as the social stigma attached to disability as a consequence of a brain injury. Although small sample size is a common problem in research involving relatively small populations, discussions with committee members and community engagement staff suggested stigma associated with disability among the Aboriginal community would have had a detrimental effect on participation rates. Caregivers were the predominate interview participants (6/8). Possibly due to these caregiver roles interview participants were primarily females (5/8).

Although initial plans for interviews involved an informal round table discussion with an Aboriginal Health Worker present, circumstances necessitated that interviews were conducted solely by research team members of non-Indigenous background. This may have elicited socially desirable responses from participants, but every attempt was made to moderate this effect and allow frank responses. In 6/8 circumstances interviewees were known to interviewers.

Interview participants were asked to nominate their preference for how the interview occurred and phone interviews were primarily chosen. Each participant met with a research team member individually, which may have influenced what participants discussed during the interview.

Indications from our participation in NAIDOC week festivities suggested a TBIs resulting from domestic violence and assault go unreported and untreated. No opportunity to investigate this was available due to interview participants' underlying nature of diagnosis. More research is recommended into the experiences of Indigenous Australian women after TBI of this nature. Our service is currently examining feasibility of establishing clinical services via identified community-based supports.

Service providers' views of the processes involved with the project and cultural appropriateness of the service were not included in the scope of this research but may have diverged from the views of service users.

CONCLUSION and RECOMMENDATIONS

Findings from the Dunghutti Muri Project concur with existing literature that culturally safe and responsive services encourage Aboriginal people to access services.

The Dunghutti Muri Project has demonstrated that access to a service can be optimised through an iterative process of developing a series of culturally appropriate strategies. The project highlighted that this is the application of a general principle to generate tactics specific for the needs of a service rather than a set procedure that would be appropriate for all situations. Additionally, optimising access is a process of continuous capacity building rather than a set of one-off short-term tactics.

The formation an oversight committee for the Dunghutti Muri Project was a critical element of the process. Directing action, rather than just planning, was a key function of the committee. The combined expert clinical knowledge and experience of MNCBIRS clinicians with the cultural knowledge applicable to the local Aboriginal community established a feedback loop to generate culturally safe and responsive services.

Despite the small scale of this project it is our hope these findings will lead to appropriate application in decision-making, health care, health policy and future research.

Recommendations including an outline of the process used throughout the Dunghutti Muri Project is detailed below.

Key Findings with Recommendations

1. Access can be optimised through a process of developing a series of culturally appropriate strategies. This was viewed as targeted recalibration of the service to improve capacity. Elements were developed as the project progressed with lessons informing further refinement.

   Recommendations for other BIRS, LHDs and BIRD;

   - Examine service usage, demographics and referral patterns to establish context and a profile of service use.
   - Establish an underpinning principle; a central reference point that allows connection to all other project elements and allows development of appropriate strategies. This allows simplification of a particularly complicated phenomenon. The Dunghutti Muri Project examined the context of the service utilising a dimension of access framework.
   - Assemble and establish an oversight committee. The Dunghutti Muri Committee included input from Researchers, ACI and BIRS managers, BIRS clinicians, local Aboriginal Health staff, Primary Health Network, Aboriginal Health Workers. Families of people with a brain injury, Durri ACMS and Consumer Engagement personnel also provided input as required. Most importantly the committee combined the expert clinical knowledge and experience of MNCBIRS clinicians with cultural knowledge applicable to the local Aboriginal community. For the duration of the project the committee met monthly but also communicated via email.
   - Develop and enact suitable strategies personalised to the service accounting for capacity and needs to optimise the various dimension of access (see Appendix 1 for examples developed as part of the project).

2. Culturally safe and responsive services encourage Aboriginal people to access services. Adapting service delivery and structure to meet the needs of Aboriginal people is consistent with the recommendations in the NSW Aboriginal Health Plan 2013-2023 to address Aboriginal health care disparities. Individual clinicians should also examine and modify practice to provide culturally secure services.

   Recommendations for LHDs, services and clinicians;

   - Seek assistance from people who know the local culture. The Dunghutti Muri Project steering committee providing ongoing robust governance, consultation, cultural commentary and recommendations relating to

the project. Our Aboriginal Health Worker provided assistance with suggested approaches for making clinical services culturally appropriate.

- Optimise access through the application of a range of culturally appropriate strategies. The Dunghutti Muri Project utilised a suite of strategies (see Appendix 1) including the employment of a dedicated Aboriginal Health Worker.
- Consider opportunities for rehabilitation programme staff to partner with Aboriginal Medical Services, Aboriginal Health Workers, Aboriginal Community controlled health services and non-government organisations in the delivery of services.
- Encourage proactive responses – anticipate issues and initiate change that creates the best possible outcomes as soon as possible. The Dunghutti Muri Project was initiated during the drop in referral rate of Aboriginal people.
- MNCBIRS develop and maintain a relationship with AHWs to utilise when needed. Smaller services may be dependent on generalist AHWs.
- Ongoing Cultural Responsiveness focusing on practical strategies to strengthen the cultural capabilities of MNCBIRS staff providing culturally safe and responsive health care that meets the needs of Aboriginal peoples e.g. practical strategies such as the use of yarning could be built into training.
- Self-Awareness – the continuous development of self-knowledge, including understanding personal beliefs, assumptions, values, perceptions, attitudes and expectations, and how they impact relationships with Aboriginal peoples. Cultural competence is an ongoing process and requires clinicians to participate in ongoing reflection.
- Develop cultural competencies among staff through ongoing cultural awareness / cultural competency education and training.
- Cultivate confidence of non-Aboriginal working with Aboriginal patients and families.
- Develop skills in positively engaging and communicating with Aboriginal people, a fear of offending, and recognition that their largely Western knowledge base may not be appropriate when delivering medical care to Aboriginal patients.
- Have both male and female Aboriginal health staff accessible if possible.
- Provide participants with culturally appropriate information about managing their ongoing rehabilitation needs, including appropriate services to access in the local community.
- Culturally appropriate resources such as a service brochure were developed for the project but ongoing discussions regarding this indicated that resources such as these need not always be culturally tailored. Simply focusing on needs via a person centred approach was more appropriate

3. Services should focus on and address what is important to the person including individual beliefs, needs and goals. This is consistent with a person centred approach. Flexibility in service delivery is vital to ensuring this.

   Recommendations for services and clinicians;

   - A strong focus for rehabilitation is that it should be specifically tailored to a person's own goals. Establish how people prefer services delivered and what they want from the service from the outset. Initial contact should incorporate the discovery of what is important to the person (their values: valued activities, people, places and beliefs) along with the biological, psychological, social and spiritual aspects of the person. The Dunghutti Muri Project advocated a simple process of enquiry i.e. "How can we make the service more suitable for you?" based on the TOP 5 initiative that was conceived and piloted in hospitals in the Central Coast Local Health District (CCLHD).
   - Involve family members in the development and implementation of rehabilitation programmes.

- Clinicians should consider personal and environmental factors of relevance to the individual. Clients of ours highlighted that they refused service initially simply because they were not ready and wanted time with their family.
- If appropriate initial contact should be made via Aboriginal Health Worker.
- Offer new clients option of joint initial appointment with AHW.

4. Develop an effective partnership between clinicians and clients. A genuinely effective partnership makes people feel comfortable and assists with navigation of a complex system.

   Recommendations for clinicians;

   - Allow time to develop rapport. The concept of yarning was relevant for the Dunghutti Muri Project and is a likely area for further investigation.
   - Armstrong 2016 highlights that the first point of contact after a brain injury is critical in determining the person's ongoing rehabilitation journey. If information and support are made accessible from the outset, and cultural security guaranteed, follow-up and two-way engagement will be more likely.
   - Develop ways to build trust and relationships with clients. Utilising Aboriginal Health Workers to assist in the initial stages may be the most appropriate.
   - Engaging clients in meaningful and supportive ways while reducing barriers and providing opportunities to participate by is consistent with inclusive engagement.
   - Treatment must be informed by the person's values when addressing the biopsychosocial aspects of care.
   - Ensure provision of practical information about services available to the client.
   - Recognition that preconceived ideas about service delivery may not be considered the most appropriate from the client's standpoint will require ongoing self-reflection. Regular consultation with Aboriginal Health staff supports this process.

5. Ensure coordination and integration of care.

   Recommendations for services and clinicians;

   - Provide assistance with understanding of technical explanations, treatment and recovery.
   - Consider that follow up assistance may not be accepted initially but should be offered.
   - Ensure support for families in the short term This includes short stay accommodation and financial support in metropolitan centres for families travelling from rural/remote centres (e.g. IPTAAS).
   - Utilise alternatives to face to face appointments; including use of FaceTime and mobile phones as instruments for interactions.

6. Ensure appropriate provision of information and education.

   Recommendations for services and clinicians;

   - Provide training regarding brain injury for staff (medical, nursing, allied health and Aboriginal Health Workers). Such training should aim to increase awareness of brain injury effects, e.g. personality /memory/ behavioural/ communication changes, and to train staff in facilitatory methods of communication.
   - Utilise long-term support educational materials (including available resources online, e.g. TBI Express)
   - Local allied health services and telemedicine options for accessing advice and support remotely to avoid unnecessary travel.

- Consider that follow up assistance may not be accepted initially but should be offered at multiple times.
- Identify potential navigators to assist the person with TBI and their family. These could include: Aboriginal Hospital Liaison Officer, Community Nurses, Community Aboriginal Health Workers or local primary care service providers providing support. advocate organisations such as Synapse, 'buddies' and local social networks.

Future Directions

Lessons learned during implementation of the Dunghutti Muri Project have generated a myriad of possible opportunities to add value. Some of these lessons lie outside the immediate scope of the project but provide invaluable directions for future work.

- Further investigation and efforts into the sustainability of the initiative will occur. Particularly the concept of ongoing cultural oversight to service provision.
- With the specific funding for an Aboriginal Health Worker now exhausted, options for ongoing access to an Aboriginal Health Worker are required. Elsa Dixon traineeships have been discussed as one possible solution. Informal arrangements with Aboriginal Health Staff during the project's duration need further discussion and clarification prior to long term arrangements.
- Deliverables for the project included presentations and reports to contributing organisations. Submission to an appropriate journal is also considered viable.
- Investigations into the longer-term effect of this initiative is warranted.
- Comparative analysis of data utilised for the Dunghutti Muri Project with other populations is indicated. This will enhance generalisability of recommendations.
- MNCBIRS has identified that improved services for people with TBI due to Domestic and Family Violence should occur. Involvement of the recently appointed Part Time Social Worker will establish effective use of referrals pathways and identify the education needs of existing services. A Closing the Gap Funding application has been submitted.
- The collaborative work of local Aboriginal staff, academic researchers, BIRS clinicians and BIRP managers during this project has forged partnerships that have proved immensely beneficial. Considerable efforts will be made to maintain links with members of the Dunghutti Muri Committee; e.g. ongoing contact with Aboriginal Health Staff and Integrated Care Staff, active participation and input in Aboriginal Health Planning days, other relevant projects.
- MNCBIRS will consider opportunities for rehabilitation programme staff to partner with Aboriginal Medical Services, Aboriginal Health Workers, Aboriginal Community controlled health services and non-government organisations in the delivery of all future services.

REFERENCES

Agency for Clinical Innovation (2019). ACI Rehabilitation Network. Principles to Support Rehabilitation Care. Sydney: ACI; (2019). Available from: https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0014/500900/rehabilitation-principles.pdf

Armstrong E, Coffin J, McAllister M, Hersh D, Katzenellenbogen JM, Thompson SC, Ciccone N, Flicker L, Cross N, Arabi L, Woods D, and Hayward C. (2019). 'I've got to row the boat on my own, more or less': aboriginal Australian experiences of traumatic brain injury. *Brain Impairment.* https://doi.org/10.1017/BrImp.2019.19

Armstrong E, McKay G, & Hersh D (2017). Assessment and treatment of aphasia in Aboriginal Australians: linguistic considerations and broader implications for cross-cultural practice. *Journal of Clinical Practice in Speech-Language Pathology*; 19: (27-34)

Elizabeth M Armstrong, Natalie Ciccone, Deborah Hersh, Judith Katzenellebogen, Juli Coffin, Sandra Thompson, Leon Flicker, Colleen Hayward, Deborah Woods & Meaghan McAllister (2017) Development of the Aboriginal Communication Assessment After Brain Injury (ACAABI): A screening tool for identifying acquired communication disorders in Aboriginal Australians, *International Journal of Speech-Language Pathology*, 19:3, 297-308, DOI: https://10.1080/17549507.2017.1290136

Brain Injury Rehabilitation Service (2019). *Criteria for Referral to the Service*. Viewed 30 August 2019. https://mnclhd.health.nsw.gov.au/services/brain-injury-service/

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

Clinical Excellence Commission (2019). Person Centred Care TOP5. Viewed 30 August 2019. http://www.cec.health.nsw.gov.au/quality-improvement/people-and-culture/person-centred-care

Creswell JW. (2003). *Research design: qualitative, quantitative & mixed methods approaches.* 2nd ed. Thousand Oaks: Sage Publications;

Durey, A. and McEvoy, S. and Swift-Otero, V. and Taylor, K. and Katzenellenbogen, J. and Bessarab, D. (2016). Improving healthcare for Aboriginal Australians through effective engagement between community and health services. *BMC Health Services Research*. 16 (1): pp. 1-13.

Greenwood, D.J. and Levin, M. (2007) *Introduction to action research: Social research for social change.* Sage Publications, Thousand Oaks. CA.

Jesus T, Hoenigh H. (2015) Postacute rehabilitation quality of care: Towards a shared conceptual framework. *Archives of Physical Medicine and Rehabilitation*. 2015;96:960-969.

Katzenellenbogen JM, Vos T, Somerford P, Begg S, Semmens JB & Codde JP (2011). Burden of stroke in Indigenous Western Australians: a study using data linkage. *Stroke* 42:1515–21

Katzenellenbogen, J. M., Atkins, E., Thompson, S. C., Hersh, D., Coffin, J., Flicker, L., … Armstrong, E. M. (2018). Missing Voices: Profile, extent, and 12-month outcomes of nonfatal traumatic brain injury in Aboriginal and Non-Aboriginal adults in Western Australia using linked administrative records. *Journal of Head Trauma and Rehabilitation*, 33(6), 412–423. https://10.1097/HTR.0000000000000371

Koff, E, (2016). NSW Health Innovation Symposium presentation. Available from: https://www.health.nsw.gov.au/innovation/2016symposium/Documents/presentations/elizabeth-koff.pdf

Lewin K. (1946) Action research and minority problems. *J Soc Issues.* 1946;2(4):34–46. https://doi.org/10.1111/j.1540-4560.1946.tb02295.x.

NSW Aboriginal Health Plan 2013-2023 (2012) NSW Ministry of Health. https://www.health.nsw.gov.au/aboriginal/Publications/aboriginal-health-plan-2013-2023.pdf

Penchansky R and Thomas JW. (1981). The concept of access: Definition and relationship to consumer satisfaction. *Med Care*; 19: 127–140.

Patton MQ (2002). *Qualitative research and evaluation methods.* 3rd ed. Thousand Oaks: Sage Publications.

Privacy Manual for Health Information (2015). NSW Ministry of Health. https://www.health.nsw.gov.au/policies/manuals/Documents/privacy-manual-for-health-information.pdf

Saurman, E. (2016). Improving access: modifying Penchansky and Thomas's Theory of Access. *Journal of Health Services Research & Policy*, *21*(1), 36–39. https://doi.org/10.1177/1355819615600001

Synapse (2019) https://synapse.org.au/

Thrift AG, Cadilhac DA, Eades S. (2011). Excess Risk of Stroke in Australia's Aboriginal and Torres Strait Islander Populations. *Stroke* 2011;42:1501–1502 https://doi.org/10.1161/STROKEAHA.111.617746Stroke.

TOP5 Toolkit (2019) https://mnclhd.health.nsw.gov.au/wp-content/uploads/TOOLKIT-FOR-COMMUNITY-SERVICES.pdf

Tsey, K. in National Rural Health Alliance (2006). *Aboriginal and Torres Strait Islander Health Workers*, National Rural Health Alliance. ACT. https://www.ruralhealth.org.au/sites/default/files/position-papers/position-paper-06-08-21.pdf

Wengraf T. (2001). *Qualitative research interviewing: biographic narrative and semi-structured methods*. London: Sage Publications;.

Armstrong, E., Ciccone, N., Hersh, D., Katzenellenbogen, J., Coffin, J., Thompson, S., & McAllister, M. (2017). Development of the Aboriginal Communication Assessment after Brain Injury (ACAABI) a screening tool for identifying acquired communication disorders in Aboriginal Australians. *International Journal of Speech Language Pathology*, 19, 297–308. https://doi.org/10.1080/17549507.2017.1290136

World Health Organization. (2011). *World Report on Disability*. Geneva, Switzerland: World Health Organization;.

World Health Organisation. (2001). *International classification of functioning, disability and health (ICF).* Geneva, Switzerland: World Health Organisation.

You J, Condon JR, Zhao Y, Guthridge SL. (2015) Stroke incidence and case-fatality among Indigenous and non-Indigenous populations in the Northern Territory of Australia, 1999-2011. *Int J Stroke*. 2015 Jul;10(5):716-22. https://doi.org/10.1111/ijs.12429

Potential Conflict of Interest

No conflict of interest was determined or declared.

APPENDICES

Appendix 1. Application of the dimensions of access for the Dunghutti Muri Project

Dimension of access **(Definition)**	**Dimension components**	**Specific examples employed for the Dunghutti Muri Project**
Accessibility (Location)	An accessible service is within reasonable proximity to the consumer in terms of time and distance.	Appointments for Macleay clients are organised in that locale. Home visits are offered as required.
Availability (Supply and demand)	An available service has sufficient services and resources to meet the volume and needs of the consumers and communities served.	An additional 0.2 FTE Project Officer and 0.4 FTE Aboriginal Health Worker have been employed to support the project.
Acceptability (Consumer perception)	An acceptable service responds to the attitude of the provider and the consumer regarding characteristics of the service and social or cultural concerns.	Clients are involved in decisions about their care with personal values and priorities considered (as consistent with person centred care). Development of rapport between BIRS staff and clients is considered vital to effective service provision. Creation of a relaxed working relationship is considered essential to establish an acceptable service. Ongoing consultation with Aboriginal Health Worker ensures culturally appropriate care. If considered appropriate, Aboriginal Health Worker makes initial contact with Aboriginal clients. Possible stigma associated with disability is recognised and efforts are made to avoid issues relating to this. If preferred, use of the word *rehabilitation* is omitted from communication due to connotations with drug rehabilitation. Appointments can be held in the *Wutu* room (this is a culturally appropriate space at Kempsey District Hospital). Culturally appropriate resources developed for the project are offered. Gender preference for case worker is taken into account.

		Non-attendance, refusals of individual appointments and preferences regarding timing of intervention are considered and do not result in discharge from the service. Aboriginal administrative staff for MNCBIRS employed in last year. Staff are Indigenous Allied Health Australia (IAHA) members.
Affordability (Financial and incidental costs)	Affordable services examine the direct costs for both the service provider and the consumer.	No costs are associated with the service. Travel costs are minimal due to appointments being held at a client's home or convenient locale. Clients are assisted with access to schemes providing financial assistance towards travel and accommodation costs when long distance travel is required for treatment that is not available locally e.g. IPTAAS
Adequacy (Accommodation / Organisation)	An adequate service is well organized to accept clients, and clients are able to use the services.	Sustainable referral pathways are being developed in conjunction with referral agents. Accommodations to create a relaxed & working relationship are considered essential for clients being able to use services. AHW assists clients with system navigation and recommendations as required. Current referral criteria were examined as part of the project. Suitable referrals for people with ABIs who have identified rehabilitation needs are accepted. Referrals for people with brain injuries with milder severity are accepted if there is capacity.
Awareness (Communication and information)	A service maintains awareness through effective communication and information strategies with relevant users (clinicians, patients, the broader community), including consideration of context and health literacy.	BIRS is promoted at local events likely to be attended by Aboriginal people e.g. NAIDOC week activities, local sporting events. Targeted promotion to typical referral agents such as ED and Durri ACMS. Local Aboriginal Health Workers likely to encourage appropriate referrals are aware of the service. Promotion of service via social media (Facebook) has occurred. Video displays in ED waiting areas etc. are being investigated as part of the project. Investigations into automatic prompts to refer based on diagnostic codes have been investigated.

Appendix 2. Potential Participants

The Dunghutti Muri Project

Health
Mid North Coast
Local Health District

The Mid North Coast Brain Injury Rehabilitation Service has recently initiated the Dunghutti Muri project – this aims to improve engagement of local Dunghutti Aboriginal people with our service.

Current referral rate of people identifying as Aboriginal from the Kempsey area to Mid North Coast Brain Injury Rehabilitation Service is poor, referrals of Aboriginal people from the Kempsey Emergency department are particularly poor with one referral over a 2 year period.

Funding has employed a dedicated Aboriginal Health Worker who will help identify enablers and barriers for local Aboriginal people accessing and engaging with the service as well as increasing awareness of the benefits of accessing rehabilitation services.

You are invited to participate in this research project by participating in a survey, interview or focus group. Your experience of the service provided by Mid North Coast Brain Injury Rehabilitation Service will help improve services for others.

If you would like to be involved or require further information about the project, please contact any of the following people:

Craig Suosaari
Project Officer / Community Rehabilitation Clinician
Mid North Coast Brain Injury Rehabilitation Service
Craig.Suosaari@ncahs.health.nsw.gov.au
0447742646

Vicki Solomon
Occupational Therapist / Community Rehabilitation Clinician
Mid North Coast Brain Injury Rehabilitation Service
Vicki.Solomon@ncahs.health.nsw.gov.au
0417261418

Barbara Strettles
Network Manager Brain Injury Rehabilitation Directorate
Agency for Clinical Innovation
Barbara.Strettles@health.nsw.gov.au

Grahame Simpson
Director, Brain Injury Rehabilitation Research Group
Ingham Institute of Applied Medical Research
Grahame.Simpson@sswahs.nsw.gov.au

Further information:
This research is being conducted Brain Injury Rehabilitation Research Group at the Ingham Institute of Applied Medical Research. This project has been approved by the University of Sydney's Human Research Ethics Committee, Approval No. *******, the North Coast Health Human Research Ethics Committee, Reference No. *******, the Aboriginal Health and Medical Research Council Human Research Ethics Committee, Reference No. *******. Should you have concerns about your rights as a participant in this research, or you have a complaint about the way the research is conducted, contact the Aboriginal Health and Medical Research Council (AH&MRC) Ethics Committee on (02) 9212 4777.

Appendix 3. Interview Guide

Dunghutti Muri Project

Guideline for Interview with Family Members and Participants.

(Based on interview format – family members and interview format consumers ACI acquired brain injury rehabilitation service delivery project - developing a model of care for rural and remote NSW)

Distress Protocol:

1. The importance of location for meetings is recognised and all attempts will be made to ensure discussions will be held in a convenient and culturally safe place chosen by the participant. The Wutu room at Kempsey District Hospital is a culturally appropriate space for use as required:

2. Modifications to our proposed approach were developed in conjunction with our Aboriginal Health Worker. The Aboriginal Health Worker will ensure participants are aware of the research process including the slight possibility of experiencing distress and their preference for dealing with that eventuality if it occurs.

3. The Aboriginal Health Worker will participate actively in face to face interviews to ensure culturally appropriate processes are adhered to. If any transient distress is evident the Aboriginal Health Worker will take the lead from this point. Participants will be given ample opportunity to compose themselves and given the chance to postpone the interview if necessary.

4. In the unlikely event the participant does experience significant distress the interview will be terminated and appropriate support will be arranged such as a family member, friend or counselling services.

INTERVIEW FORMAT – FAMILY MEMBERS

Note – this is for the purpose of a guideline rather than a checklist.

The interview is divided into sections; however the interview discussion may jump between these sections. The aim is to achieve as much descriptive and reflective data as possible and therefore prompts may be needed for examples or to further explore the topic.

1. Introduction:
   - Aims of the study.
   - Phases of the study.
   - Overview of what will be covered.

2. Injury details and acute hospital experience:
   - Where did you go when your relative or significant other had their injury?

3. Rehabilitation:
   - Did your relative or significant other have rehabilitation?

- Where was it?
- If they didn't have rehabilitation what happened?

4. Going home:
    - When was your relative/significant other able to go home?
    - Who do you think helped you when they went home?
    - What services were you offered?
    - Did you accept them?
    - How did they find out about you?
    - Where did the service come from?
    - How long did you receive that service for?
    - Are you still receiving services?

5. What did you think of the help you received?
    - Were you happy with the services you received?
    - Was it the right sort of help?
    - What else could have helped your family?

6. Summary and explanation of next step in project.

INTERVIEW FORMAT CONSUMERS

Note – this is for the purpose of a guideline rather than a checklist.

The interview is divided into sections; however the interview discussion may jump between these sections. The aim is to achieve as much descriptive and reflective data as possible and therefore prompts may be needed for examples or to further explore the topic.

1. Introduction:
    - Aims of the study.
    - Overview of what will be covered.
    - Broader background
    - What happening prior to the injury?
        - Where living at time?
        - Family
        - How things have changed?
        - Focus on specifics

2. Injury details and acute hospital experience:
    - Old injuries?
    - More than one Brain Injury?
    - Referrals? Source of referral
    - Clinical pathway?
    - Acute injury
    - Severity of injury
    - Date of admission
    - Date of discharge
    - Where did you go when it first happened? What hospital?
    - Where and how did the brain injury occur?
    - What was the post injury pathway?

3. Rehabilitation:
    - General questions relating to effects of the brain injury
    - What was happening prior to the injury? Pre morbid status?
    - What is happening now?
    - How has the brain injury affected your life?
    - What has changed?
    - What goals set?
    - Did you have rehabilitation?
    - How did you access the service?
    - Where was it?
    - If you didn't have rehabilitation what happened?
    - Support and intervention post brain injury
    - Perspectives re services
    - Any correlation
        - impairment
        - ATSI status
    - Services accessed
    - How much from service
    - If haven't accepted service
        - don't feel needed or required?
        - difficult to access?
        - Another reason?
    - Prompts – do you feel …..
        - ?decision related to being aboriginal?
        - ?needed it
        - ?services appropriate

4. Going home:
    - When were you able to go home?
    - What did you remember of that time when you first come back?
    - Who do you think helped you when you went home?
    - What services were you offered?
    - Did you accept them?
    - How did they find out about you?
    - Where did the service come from?
    - How long did you receive that service for?
    - Are you still receiving services?

5. What did you think of the help you received?
    - Were you happy with the services you received?
    - Was it the right sort of help?
    - What else could have helped you and your family?

6. Opinion of strategies:

    Appointments for Macleay clients are organised in that locale.

    Home visits are offered as required.

    An additional 0.2 FTE Project Officer and 0.4 FTE Aboriginal Health Worker have been employed to support the project.

Clients are involved in decisions about their care with personal values and priorities considered (as consistent with person centred care).

Development of rapport between BIRS staff and clients is considered vital to effective service provision.

Creation of a relaxed working relationship is considered essential to establish an acceptable service.

Ongoing consultation with Aboriginal Health Worker ensures culturally appropriate care.

If considered appropriate, Aboriginal Health Worker makes initial contact with Aboriginal clients.

Possible stigma associated with disability is recognised and efforts are made to avoid issues relating to this.

If preferred, use of the word rehabilitation is omitted from communication due to connotations with drug rehabilitation.

Appointments can be held in the Wutu room (this is a culturally appropriate space at Kempsey District Hospital).

Culturally appropriate resources developed for the project are offered.

Gender preference for case worker is taken into account.

Non-attendance, refusals of individual appointments and preferences regarding timing of intervention are considered and do not result in discharge from the service.

Aboriginal administrative staff for MNCBIRS employed in last year.

No costs are associated with the service.

Travel costs are minimal due to appointments being held at a client's home or convenient locale.

Clients are assisted with access to schemes providing financial assistance towards travel and accommodation costs when long distance travel is required for treatment that is not available locally e.g. IPTAAS

Sustainable referral pathways are being developed in conjunction with referral agents.

Accommodations to create a relaxed & working relationship are considered essential for clients being able to use services.

AHW assists clients with system navigation and recommendations as required.

Current referral criteria were examined as part of the project. Suitable referrals for people with ABIs who have identified rehabilitation needs are accepted. Referrals for people with brain injuries with milder severity are accepted if there is capacity.

BIRS is promoted at local events likely to be attended by Aboriginal people e.g. NAIDOC week activities, local sporting events.

Targeted promotion to typical referral agents such as ED and Durri ACMS.

Local Aboriginal Health Workers likely to encourage appropriate referrals are aware of the service.

Promotion of service via social media (Facebook) has occurred.

Video displays in ED waiting areas etc. are being investigated as part of the project.

Investigations into automatic prompts to refer based on diagnostic codes have been investigated.

7. Summary and explanation of next step in project.