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# The Marurra-U Partnership: providing a hybrid, multidisciplinary, wraparound model of care for Aboriginal children living with complex needs in the remote Fitzroy Valley, Australia

Thomas Stubbs<sup>1\*</sup> , Anita Pickard<sup>1\*</sup> , Emily Carter<sup>2</sup>, Sue Thomas<sup>2</sup>, Jadnah Davies<sup>2</sup>, Rosemary Evans<sup>3</sup>, Dagney Hopp<sup>3</sup>, Kim Casburn<sup>3</sup>, Tuguy Esgin<sup>1,4</sup>, Blake Angell<sup>5</sup>, Elizabeth J. Elliott<sup>6,7</sup>  and Alexandra Martiniuk<sup>1,8\*</sup> 

## Abstract

**Introduction** Aboriginal and Torres Strait Islander peoples have knowledge and strengths to promote health and wellbeing in their communities. There is a need to understand how multidisciplinary models of care and partnerships between Aboriginal Community-Controlled Organisations and health service providers can improve outcomes for children with complex needs. The aim of this study is to describe the development, characteristics, and implementation of the Marurra-U Partnership, which is a hybrid (telecare and in-person), multidisciplinary, wraparound model of care for children with complex neurodevelopmental needs and their families in the Fitzroy Valley, Kimberley Region, Western Australia.

**Methods** This study is part of a broader research program that used an Aboriginal Participatory Action Research approach. In-depth interviews were conducted with eleven staff involved in designing and implementing the Marurra-U Partnership. Data were analysed using reflexive thematic analysis.

**Results** Five themes were constructed relevant to the aim of the study: 1) responding to the need for multidisciplinary, wraparound services for Aboriginal children with complex needs in the Kimberley; 2) strengths, resilience, and future directions of the partnership; 3) principles and characteristics of the model of care; 4) climate change, environmental factors and geographic remoteness as consistent challenges to implementation of the model of care; and 5) shared recognition of the importance of genuine community partnership and leadership to implement models of care like Marurra-U.

\*Correspondence:

Thomas Stubbs  
thomas.stubbs@sydney.edu.au  
Anita Pickard  
anita.pickard@sydney.edu.a  
Alexandra Martiniuk  
Alexandra.Martiniuk@sydney.edu.au

Full list of author information is available at the end of the article



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**Discussion** The Marurra-U Partnership, between an Aboriginal Community-Controlled Organisation and a non-government organisation that provide neurodevelopmental services, has developed a model of care for delivering wraparound, trauma-informed, multi-disciplinary developmental health and capacity-building services. It offers insights for supporting Aboriginal children with complex neurodevelopmental needs and their families in remote Australia.

**Keywords** Australian Aboriginal and Torres Strait Islander peoples, Indigenous, Fetal alcohol spectrum disorder, Child health, Adolescent health, Health services, Wraparound, Telehealth, Rural and remote, Models of care

## Introduction

Aboriginal and Torres Strait Islander people<sup>1</sup> conceptualise health as collective social, emotional and cultural wellbeing [1]. Cultural determinants of health (connection to family/community, country, cultural identity and self-determination) influence wellbeing [2]. As the world's oldest continuing civilisation, with ancestry dating 75,000 years [3], Aboriginal and Torres Strait Islander people's connection to community and country provides strength to overcome the injustices of racism and colonisation [4]. Communities demonstrate resilience in the face of historical and ongoing challenges, preserving cultural identity, knowledge, and traditions across generations [5]. Research shows that strengthening these attributes and resources is vital to supporting the healthy development of Aboriginal children, particularly those at increased risk of developmental vulnerabilities [6]. By focusing on the inherent strengths within communities and community-based organisations, there is an opportunity to disrupt the status quo, promote positive health outcomes, and reduce disparities between Aboriginal and Torres Strait Islander people and non-Indigenous Australians.

In the very remote Fitzroy Valley, Kimberley region of Western Australia, the Lililwan project demonstrated the community's commitment to understanding and addressing challenges related to alcohol use during pregnancy and its impact on child development. Through identifying the high prevalence of alcohol use during pregnancy [7], neurodevelopmental disorders (including fetal alcohol spectrum disorder [FASD]) and early life trauma (ELT)<sup>2</sup> among the cohort [8–15], the Lililwan project highlighted the need to develop targeted education and support programs and strengthen multidisciplinary health services for children with chronic and complex needs. Other studies revealed gaps in accessible child health services in the Fitzroy Valley [16] and illustrated the salience

of a coordinated approach [17, 18], consistent with the limitations and challenges of delivering child healthcare in remote Aboriginal and Torres Strait Islander communities throughout Australia [19]. The Lililwan project is an example of how community-driven initiatives can pave the way for positive change and improve outcomes for Aboriginal and Torres Strait Islander peoples [20].

A complex relationship exists between FASD and ELT, with negative impacts on neurodevelopment, mental health, and wellbeing later in life. In Western Australia, one study showed a high proportion of young people (2–21 years) with FASD had adverse childhood experiences (ACEs), which were associated with an increased risk of engagement with child protection and justice systems [21]. Other research showed a high prevalence of severe neurodevelopmental impairment (89%) and FASD (36%) among young people (10–17 years; 74% Aboriginal) in youth detention [22]. Aboriginal and Torres Strait Islander young people (1–25 years) with FASD also have a higher prevalence of suicide and engagement with child welfare and justice systems [23–25]. Despite these challenges, international studies illustrate the strengths and capacities of people with FASD, including resilience, self-awareness, and adaptability. These studies highlight the need to shift to trauma-informed, strengths-based approaches in FASD discourse, research, and clinical programs [26, 27]. The Australian *National Fetal Alcohol Spectrum Disorder (FASD) Strategic Action Plan 2018–2028* prioritises support and management to improve outcomes for people with FASD and prevention of secondary disability, and calls for multidisciplinary models of care that address the diverse needs of individuals and are suitable and responsive to diverse settings and cultures [28].

Wraparound models of care, which include integrated and coordinated services, have been implemented to support Aboriginal and Torres Strait Islander and non-Indigenous people with FASD, ELT and other complex needs, including in Australia [29]. Studies highlight the importance of multidisciplinary teams and the need to understand and adapt models to local contexts and communities for the effective implementation of FASD models of care in Australia [30, 31]. School-based wraparound models of care are also effective in supporting remote/rural Australian children with complex needs,

<sup>1</sup>Note that hereafter, the term “Indigenous” will be used in an international context, “Aboriginal and Torres Strait Islander” refers to the First Peoples of Australia and the people of the Fitzroy Valley in the Kimberley region in Western Australia will be described as “Aboriginal” according to their preference.

<sup>2</sup>Adverse childhood experiences (ACEs) and ELT are closely linked. This team conceptualises that ACEs are events that can increase chances of experiencing ELT and use the term ELT as such in this paper.

highlighting the potential for arranging healthcare models around existing networks [32]. In addition, telecare has become an essential component of models of care for remote communities, particularly since the COVID-19 pandemic [33]. Adult and paediatric telecare services are effective in urban [34] and rural/remote Australia [35, 36] and internationally [37], including with Aboriginal and Torres Strait Islander people [38]. However, the use of this technology as part of a hybrid, wraparound model of care for Aboriginal and Torres Strait Islander children and families with complex needs has not been captured in research.

The *Australian FASD Indigenous Framework* proposes integrating Aboriginal and Torres Strait Islander wisdom and ways of being with Western knowledges and approaches to improve outcomes for families with lived experience of FASD [39]. Priority reform two of the *Closing the Gap Report* notes that Aboriginal and Torres Strait Islander community-controlled organisations are well-positioned to strengthen Aboriginal and Torres Strait Islander health because they recognise and promote the strengths, expertise, and self-determination of communities [40]. Partnerships between Aboriginal community-controlled organisations (ACCOs) and health service providers enable Aboriginal and Torres Strait Islander communities to be active participants in shared decision-making regarding programs and services that strengthen their health and wellbeing [41, 42]. Research demonstrates that culturally safe, holistic, and strengths-based approaches are essential for programs and services for Aboriginal and Torres Strait Islander peoples [43]. Although some studies have explored the dynamics of these partnerships [44–46], the implementation of such partnerships and their capacity to strengthen outcomes for children with FASD or complex needs in very remote Aboriginal and Torres Strait Islander communities have yet to be explored.

In response to the needs identified by the Lililwan project [20], community leaders in the Fitzroy Valley, in partnership with healthcare and research teams, developed the Marulu strategy, which aims to reduce the burden of FASD and ELT through prevention and support services for children, families, and communities [47]. Under the Marulu strategy, Marninwarntikura Women's Resource Centre (MWRC)—an ACCO that takes a rights-based approach to provide women and their families a place for safety, positive change, and leadership in the Fitzroy Valley—and Royal Far West (RFW)—a specialist developmental paediatric health service based in NSW—formed the Marurra-U Partnership in 2016. It aimed to '*improve support and outcomes for children and families with complex needs in the Fitzroy Valley, including early life trauma and FASD*' [48]. The partnership implemented a hybrid (in-person and telecare), multidisciplinary,

wraparound model of care for school-aged children with complex neurodevelopmental needs. It was co-designed and delivered by allied health professionals with paediatricians, psychologists, and Aboriginal family support workers. Activities include allied health assessments and the delivery of therapy in-person and via telecare, and service enhancements and education for families, teachers, and local community services on child brain development, emotional regulation, social-emotional wellbeing, and trauma. To prevent duplication of local services, the Marurra-U Partnership enhances existing services through clinical supervision and capacity building of local organisations and their staff on trauma-informed practice. Collaborations with local organisations include conducting trauma-informed audits and recommendations to improve service processes and spaces. The wraparound service, delivered by the Marurra-U Partnership, was initially piloted in Yiyili Aboriginal Community School, Fitzroy Valley. An internal assessment revealed that it was feasible, led to improvements in students' behaviour, and improved school staff and parents' understanding of trauma-informed care and their capacity to support children with complex needs [48]. Through a partnership grant awarded to the University of Sydney, MWRC, and RFW, the University of Sydney was then engaged in the Marurra-U Partnership to lead an evaluation of the model of care.

To date, no studies have investigated hybrid, multi-disciplinary, wraparound models of care for Aboriginal children and families with lived experience of FASD and other complex needs, or the implementation of models of care by an ACCO and health service provider partnership. Consequently, this research aims to investigate partners' perspectives on the development, characteristics, and implementation of the Marurra-U Partnership model of care, including the barriers and facilitators to effective and sustainable service delivery in remote communities in the Fitzroy Valley.

## Methods

### Study design

This study is the first phase of a larger research program led by the University of Sydney, in collaboration RFW and MWRC, to evaluate the development, implementation, and outcomes of the Marurra-U Partnership's wraparound model of care. The research partnership uses an Aboriginal Participatory Action Research (APAR) approach, an Indigenous research method grounded in Indigenous Standpoint Theory. APAR prioritises and addresses Indigenous community perspectives, focusing on decolonising and strengths-based approaches that benefit Indigenous communities [49]. This study was co-designed, conducted, and disseminated in collaboration with Aboriginal community leaders and researchers,

with the aim of influencing changes in service delivery in the Fitzroy Valley. The overall aim of the study was co-developed by the research partnership, privileging the voices, perspectives, and priorities of Aboriginal communities in the Fitzroy Valley, as represented by MWRC. This approach builds on a long-term research and health program partnership between the Fitzroy Valley communities, MWRC and the University of Sydney [20]. Ongoing community consultation and adaptation of the model coincided with the delivery of wraparound services.

The study was conducted in line with the National Health and Medical Research Council's (NHMRC) Ethical Conduct in Research with Aboriginal and Torres Strait Islander Peoples and Communities: Guidelines for Researchers and Stakeholders 2018 [50] and the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) Code of Ethics for Aboriginal and Torres Strait Islander Research [51]. The study is reported according to the Consolidated criteria for reporting qualitative research (COREQ) [52] (Supplementary Material 1).

### Setting

Fitzroy Crossing is a very remote town [53], 400 kms from Broome, in the Kimberley Region of Western Australia. It serves as the central hub for the Fitzroy Valley, which comprises 32 communities and is home to around 3,500 people (80% identify as Aboriginal) belonging to five predominant primary Aboriginal language groups (Bunuba, Walmajarri, Wangkatjunka, Nyikina, Gooniyandi) [54]. Aboriginal-led organisations in the Fitzroy Valley are internationally recognised for their endeavours to reduce alcohol-related harms and address FASD and ELT [55]. Based in Fitzroy Crossing, MWRC leads research and service partnerships to support children and families with complex needs.

### Data collection

The information shared in this paper was collected in August 2023 when two co-authors (AP & TS) joined MWRC and RFW staff in the Fitzroy Valley. In accordance with the study's APAR approach, data is owned by the Aboriginal communities of the Fitzroy Valley, represented by MWRC. As mutually agreed, data is stored on the University of Sydney network for security and confidentiality, with access requests approved by MWRC. Purposeful sampling was used to recruit participants [56], with RFW and MWRC introducing the researchers to staff involved in the development and implementation of the Marurra-U Partnership. These staff were then invited, either in person or via email, to join the study. A total of eleven participants agreed to join the study, which included most of the founders and implementers of the Marurra-U Partnership. There were more participants

from RFW ( $n=7$ ) than from MWRC ( $n=4$ ), consistent with the Marurra-U partnership, which was predominantly comprised clinicians at the time of interview. RFW participants included clinicians and leadership, and MWRC participants included Aboriginal family support workers and leadership. All participants were female, and three identified as Aboriginal people from Fitzroy Valley. The ratio of Aboriginal to non-Aboriginal participants is a potential limitation.

AP and TS conducted semi-structured interviews in person or via video conference, aligning with the interviewees' schedules and preferences, during September 2023. The interview guide (including interview topics, questions, and processes) was co-developed by the University of Sydney, RFW, and MWRC, with contributions from Aboriginal and Torres Strait Islander and non-Indigenous researchers and community members (Supplementary Material 2). At the request of these stakeholders, the interview guide covered the history and implementation of the Marurra-U project. It also includes an introductory phase to facilitate building rapport with participants and open-ended questions to enable participants to freely explore the research topics. In line with the study's approach of addressing power imbalances between researchers and community participants, the final question invited participants to ask the interviewers questions or raise any other topics they wished to discuss. Each interview lasted 40–80 min and was audio recorded, auto-transcribed, and manually corrected by the co-authors. Anonymised transcripts were shared with participants for checking, providing an opportunity for corrections, clarifications, additional data, or further insights into context or meaning. One participant provided feedback on their transcript.

### Data analysis

Interview transcripts were analysed using the six steps of reflexive thematic analysis. This method aims to identify, analyse, and report patterns (themes and sub-themes) in data, highlighting the researcher's active role in constructing meaning, while recognising that interpretations are shaped by their own perspectives, assumptions, and experiences [57]. Using NVivo R1 software, co-authors TS (cis-man) and AP (cis-female) inductively analysed the transcripts independently before meeting to discuss the construction of codes and themes. They also discussed how their positionality may have influenced data analysis [58]. Attributes that may have influenced TS's engagement with the data were his Australian, non-Indigenous background, education, and experience in public health research, qualitative methods, community-based projects, and experience in cross-cultural settings. AP's engagement with the data was shaped by her Australian, non-Indigenous background, education,

experience in biomedical engineering and public health research, including quantitative methods, and her experience in cross-cultural settings. Neither had prior experience in Aboriginal and Torres Strait Islander research. However, they had received extensive knowledge about the study setting's history, cultures and peoples during a three-week trip with MWRC staff to the Kimberley and Fitzroy Valley, and through deepening their relationship with Marurra-U staff and Aboriginal community members, consistent with the APAR and strengths-based methods employed in this study [49]. In prioritising relationships between non-Indigenous and Aboriginal researchers and community members, non-Indigenous researchers reflected on how their positionality might influence potential power imbalances within the team, and how this might affect their role in the study design, conduct, and analysis [59, 60]. In line with the APAR approach, initial research findings were discussed with MWRC, which included Aboriginal community members from Fitzroy Valley and a non-Indigenous researcher with extensive experience in the region, to help interpret and contextualise the data. The initial findings were also discussed among the coauthors (Aboriginal, non-Indigenous, clinical, and non-clinical staff) with knowledge of the Fitzroy Valley, Indigenous research, and APAR to contextualise the findings. These Aboriginal and non-Indigenous researchers and community members also co-authored the research findings to ensure they aligned with the perspectives and priorities of the Fitzroy Valley communities.

## Results

### Theme 1. Responding to the need for multidisciplinary, wraparound services for Aboriginal children with complex needs in the Kimberley

Senior Aboriginal leaders successfully lobbied the Western Australian government to introduce alcohol restrictions in 2007 in response to widespread harm across the community. Around that time, grandmothers in the community noticed their grandchildren were *'different to the way their children [behaved]... a lot more aggressive and just a lot harder to manage'* [P10, MWRC, Aboriginal]. As such, the community engaged University of Sydney researchers in 2009 [20] who found that alcohol use in pregnancy was impacting behaviours. Then, with Aboriginal community leaders, researchers, and clinicians, they determined the prevalence of FASD and the needs of children and families in the Fitzroy Valley in the Lililwan *'All the Little Ones'* project.

After identifying a high prevalence and impact of FASD among young children, the community developed the Marulu Strategy, meaning *'precious, worth nurturing'* in the Bunuba language, to prevent and mitigate the effects of FASD in the Fitzroy Valley. However, they identified

the lack of services needed to support children and families with lived experience of FASD in remote communities, noting that someone's *'postcode shouldn't determine the level of services we should be getting... our families don't know what good looks like'* [P1, MWRC, Aboriginal] in terms of services and supports. After senior community leaders visited RFW's clinical hub in Sydney and observed their services, they invited RFW to visit the Fitzroy Valley communities in 2015:

*'They had heard about us as a health service and that we were a multidisciplinary team and that we were looking at supporting kids from rural/remote areas and... did a lot of wraparound supports... they were interested to see what the model looked like or how we were delivering services, and so they came, and they visited... From that came the discussions around, okay, we really liked the way in which you work and how you work with communities and things like that. Would there be an opportunity for a partnership... why don't you come out and...see the community, to learn about the community and see if there could be a partnership... that's how it started.'* [P9, RFW, non-Aboriginal]

In 2015, community leaders, under the auspices of MWRC, invited RFW to support Fitzroy Valley families with complex needs and developed the Marurra-U Partnership, a Bunuba word that means *'to embrace with love and care.'*

### Theme 2. Strengths, resilience, and future directions of the Marurra-U partnership

The positive relationship between MWRC and RFW was a strength of the partnership. Various factors facilitated this strong partnership: trust between the organisations and staff, mutual respect, and a shared vision:

*'I think...putting kids at the centre of this... We all want the same thing, and that's better outcomes, better equity, better access for the kids. I think that's probably the number one thing.'* [P7, RFW, non-Aboriginal]

Another strength of the partnership was productive collaboration. This involved drawing on MWRC's knowledge of and relationships with the local community and culture, and RFW's clinical expertise to deliver trauma-informed, allied health services and capacity-building to families and support services in the Fitzroy Valley.

*'We do collaborate... I'm a local woman from here, so I just help [with]... the partnership... Royal Far West is an allied health team... They know a lot of*

*the clinical side... the health side of stuff, while we have our own local knowledge and a lot of family... We know most of everyone here... We... show them around, visiting communities... and even teach them about cultural safety, like culture.' [P3, MWRC, Aboriginal]*

Commitment was another cornerstone of the partnership. Some participants stated that the organisations' *'real commitment...from both sides, to want to support access to services in this area'* [P2, RFW, non-Aboriginal] contributed to the partnership's resilience to overcome challenges, including natural disasters and the COVID-19 pandemic. Despite these strengths, participants described the ongoing challenge of limited funding, noting that rigid grant requirements and short-term government funding cycles were incompatible with the partnership's flexible service delivery, need to adapt to cultural protocols, and relationship-focused engagement with communities.

The participants described potential future directions for the partnership. These included adapting services to support the changing needs of children transitioning into adolescence and young adulthood, introducing support for those impacted by the 2023 floods in the Fitzroy Valley, addressing the increasing effects of climate change, and scaling up services across the Kimberley. Some recalled the long-term vision of creating a healthcare training and service hub in Broome, where community members could be trained to serve their region.

*'We're seeding this idea around having something similar to RFW in the Kimberley that would support Kimberley kids... where we'd have similar services to what country New South Wales children enjoy in Manly, that we can have up here for our children and their families. So that's the ideal, that's the end goal, but also to have our Indigenous people, young people, whether it's young or old... trained so that they can go back into those communities and continue the work... We want to see that because we know that that's the sustainability of the workforce if we really build our own.' [P1, MWRC, Aboriginal]*

### **Theme 3. Principles and characteristics of the Marurra-U model of care**

Participants recalled the nine principles guiding the Marurra-U Partnership and the implementation of the model of care. Moreover, participants described how a trauma-informed approach underpins the partnership's model of care and engagement with other service providers and communities:

*'Being trauma-informed is understanding that everybody has their story and behaviour...comes from somewhere... they have a complex history... It's this idea that you approach everyone with compassion and curiosity, and the connection and the relationship is the most important thing... It really underpins everything that we do...how we work with schools, how we talk to teachers, how we talk to parents, how we interact with each other. It's being aware of what the fear response does to the brain and does to our ability to function and interact and think and plan and all of that stuff, and recognising that people need to be in a safe space before they can function to the best of their abilities.' [P5, RFW, non-Aboriginal]*

The partnership's wraparound model of care is an adaptive suite of services that positions children and families at the centre. Children are supported through school-based, hybrid, allied health therapy (combining telecare and in-person care) and family camps that involve therapist-facilitated, play-based activities. The aim of involving parents and caregivers in therapy, specific parenting support sessions, and in-the-moment modelling of therapeutic approaches is to deepen parent/caregiver understanding of their children's strengths and challenges, and how to support them. The model of care also focuses on strengthening the systems around children through capacity building of school and healthcare staff and conducting audits of classrooms, healthcare facilities and community spaces to ensure they are trauma-informed and socially and emotionally safe for children and families. Telecare enabled cost-effective, consistent delivery of allied health therapies to very remote communities that would otherwise not be possible through fly-in, fly-out (FIFO) or drive-in, drive-out (DIDO) services alone:

*'We can deliver these services...into [the] community in a consistent way, with consistent people that understand the context, because they've been there. And it's a game changer for people and financially, logistically, and the frequency is critical.' [P7, RFW, non-Aboriginal]*

### **Theme 4. Climate change, environmental factors, and geographic remoteness are consistent challenges to the delivery of the Marurra-U partnership**

Natural disasters, such as cyclones or the 2023 floods, have impacted project implementation. One Aboriginal MWRC staff member noted how the 2023 floods impacted the community: *'the floods and everything here that happened... There [was] no access to anything. There [was] no access to the roads... The food security was just going low and like everyone trying to ration out their*

foods and stuff'[P3, MWRC, Aboriginal]. These extreme weather events also shifted the community's priorities to immediate concerns, like housing and food security. The partnership quickly pivoted to respond to these immediate challenges:

*'The floods, I think, that was a really...huge, traumatic event for that whole Valley... I think that's where being able to pivot and say, okay, well, we're still here...we're still with you, let's talk about other things that we can do to support [the] community. Let's look at other ways that we can support the school and kids.'*[P6, RFW, non-Aboriginal]

Participants described the impact of the COVID-19 pandemic on the partnership, noting that community lockdowns and travel restrictions hindered direct therapy and capacity building. The remoteness of communities and schools was another barrier to implementation, particularly the high staff turnover in schools, which hindered the continuity of relationships and service provision. RFW's telecare infrastructure helped overcome some of these challenges to facilitate continuing direct therapy and capacity building:

*'COVID's been a major disruptor...but, interestingly, through that whole process... we were the only consistent [allied] health service over that period of time... we really had a sustainable model around telehealth by the time COVID hit... We had the technology, we had the processes, we had the staff, and so we just picked up straight away within 24 hours... I think that was a great support to the community, knowing that that's something that they could rely on.'* [P7, RFW, non-Aboriginal]

#### **Theme 5. The importance of genuine community partnership and leadership to implement the Marurra-U model of care**

Participants emphasised the importance of understanding and respecting communities' histories, cultures, and contexts, including intergenerational trauma, to engage with families in a culturally sensitive and safe manner. Some of the non-Indigenous participants reflected on their experience of learning and adapting their clinical practices to align with Aboriginal communities' ways of being that differed from their own:

*'I personally had a lot to learn in terms of understanding culture and the history and learning about trauma and intergenerational trauma and the impacts and how that might influence the work, but also in terms of language... what does supporting language, and language therapy, and communica-*

*tion... what does that mean for them and what does that look like.'*[P9, RFW, non-Aboriginal]

Project activities and delivery had to adapt to the socio-cultural and environmental dynamics of this setting. Relationships with communities enabled the partnership to access knowledge, cultural practices and norms, and to adapt project plans and timelines in line with the community's preferences. Community relationships and leadership by MWRC staff were crucial to delivering culturally appropriate information to families on sensitive and complex topics:

*"There's help in a culturally appropriate way that understands where you've come from, and your family's come from. I think that's what's needed... especially around that parenting and child development stuff... Those relationships are needed to help the kid."* [P10, MWRC, Aboriginal]

Community leadership was described as crucial. Local community navigators were essential in project design and delivery, particularly when working alongside non-Aboriginal project staff to communicate with Aboriginal families in a culturally safe way.

*'It's so important for us to have community navigators there, especially in the conversations with Aboriginal educators... We want to work in that collaborative way... There might be nuances of the conversation that, as "kartiya", as white people, we don't capture that our community navigators are able to help us understand.'* [P2, RFW, non-Aboriginal]

#### **Discussion**

The *National Fetal Alcohol Spectrum Disorder (FASD) Strategic Action Plan 2018–2028* calls for increased support and management for people with FASD to improve outcomes and prevent or limit potential secondary outcomes [28]. This study described the development, characteristics, and implementation of the Marurra-U Partnership, a hybrid, multidisciplinary, wraparound model of care for Aboriginal children living with complex needs in the remote Fitzroy Valley, Australia. While this study did not aim to evaluate the effectiveness of this model of care, as it is still in its early stages, the findings highlight its potential to improve children's health outcomes and reduce the impact of developmental delays [8, 9, 12–14]. This model of care could also be useful for limiting potential secondary adverse outcomes for children with FASD and other complex needs, such as challenges in school [15] and healthcare needs [17, 18], by providing capacity building for educators and health service providers in the Kimberley to increase understanding

of the unique needs of these children and families. The model could also provide an opportunity to offer trauma-informed support when additional or novel services are needed, such as diversionary programs or engagement with justice services [22–24].

A key feature of the Marurra-U Partnership model of care is its multidisciplinary team who deliver adaptive services tailored to the beneficiaries' unique needs and preferences. This approach aligns with the *National Fetal Alcohol Spectrum Disorder (FASD) Strategic Action Plan 2018–2028*'s call for multidisciplinary models of care that address the diverse needs of individuals and are responsive to various settings and cultures [28]. Further, the partnership's wraparound model of care situates the child at its centre and strengthens the parents, caregivers, and service providers surrounding the child—differing from sector-specific models of care, such as school-based [32] or healthcare-based models [30, 31]. Although the partnership team does coordinate with the Kimberley Aboriginal Medical Service (KAMS) and Western Australian Country Health Service (WACHS) to ensure services do not overlap, there is an opportunity to broaden the reach of the model of care by developing formal referral pathways to other service providers in health, justice, housing and social services. This approach is similar to the Pilbara Model of Care's multisectoral referral pathways for Aboriginal families with lived experience of FASD in remote Western Australia [29]. Although a psychologist has previously conducted assessments for Marurra-U, there is scope for the model of care to add a referral pathway to a clinical or neuropsychologist for formal assessments and management of children with potential neurodevelopmental conditions. This service may provide families with clarity about their children's diagnoses and management and the evidence required to obtain government-funded support, such as the National Disability Insurance Scheme.

The Marurra-U Partnerships' use of telecare helped to overcome some of the geographic barriers to services for remote Fitzroy Valley communities that were experienced during the COVID-19 pandemic lockdowns and natural disasters, including the catastrophic floods of 2023 [61]. The benefits of telecare in delivering health services during the COVID-19 pandemic [33, 34] and reaching remote communities [35–37], including Indigenous peoples [38], have been well established. This study furthers this evidence by showing how telecare can be woven into a hybrid model of care for ongoing support of Aboriginal children with FASD and complex needs and their families. The findings also underscore the significance of face-to-face interaction and sustained relationships with communities and cultures.

The *Australian FASD Indigenous Framework* calls for integration of Aboriginal and Western knowledges to

strengthen outcomes for Aboriginal and Torres Strait Islander people with FASD and their families [39]. Evidence shows that ACCO and service provider partnerships are effective in integrating Aboriginal and Torres Strait Islander and Western knowledge by promoting the self-determination of communities [40] and facilitating Aboriginal and Torres Strait Islander community leadership in the priority-setting, co-design, and implementation of solutions [41, 42]. The Marurra-U Partnership is an example of a collaboration between an ACCO and a health service provider to deliver wraparound support for remote Aboriginal children with FASD and other complex needs, with the model relying on each organisation's strengths and expertise to overcome unique challenges and deliver services in a remote setting. Previous studies have identified benefits of such partnerships: strengthening the cultural safety of health services and staff, building the capacity of Aboriginal staff, broadening the availability of services, addressing institutional racism, increasing the diversity of treatment approaches, and establishing more culturally safe ways of working [45]. Our study identified key factors contributing to the productive relationship between RFW and MWRC, including trust, mutual respect, a shared vision, flexibility, and long-term commitment. These attributes are consistent with other ACCO and health service partnerships [44]. Similar partnerships should aim to operationalise these attributes to optimise sustainable outcomes for communities.

This research – a partnership involving MWRC, RFW and the University of Sydney – highlights the importance of genuine community partnerships and local leadership, and the vital role of local community navigators in delivering services in a culturally safe and strengths-based manner. These characteristics were identified in previous research, from the perspective of Aboriginal people, as important to social and emotional wellbeing programs [43]. This approach aligns with best practices for community leadership, as shown in other Aboriginal health projects in the Fitzroy Valley [20]. The Marurra-U Partnership and others could extend this community collaboration by capturing the voices, capabilities, and strengths of families with lived experience of FASD [26, 27] or other complex needs.

#### Limitations

This study has several limitations. First, we only interviewed RFW and MWRC staff, so the findings are based on the perspectives of internal staff involved in the design and implementation of the partnership. Additional interviews to describe the experiences of children, families, and external stakeholders will be reported in the future. Second, most study participants were from RFW as the Marurra-U Partnership was comprised

predominantly non-Indigenous clinicians at the time of interviews, which means that RFW's perspectives may be overrepresented. The partnership has since hired three new Aboriginal staff members from the Fitzroy Valley. Further, this initial qualitative research only aimed to describe the partnership's development, characteristics, and implementation from the perspectives of RFW and MWRC staff. In subsequent phases of this research, robust quantitative and qualitative data collection might be collected to help determine the effectiveness and impact of the partnership on children, parents, service providers and the broader community. Finally, the co-authors who led the data collection and analysis were non-Indigenous Australians and consequently, their backgrounds and worldviews would have limited their ability to understand, interpret, and present the perspectives of Aboriginal people in the Fitzroy Valley. However, this research, in line with an APAR approach, was conducted under Aboriginal leadership, in partnership with MWRC, and with the involvement of Aboriginal community leaders and researchers involved in the study's design, implementation, analysis, and write-up. This design aimed to capture and elevate the community's cultures, context, perspectives, and priorities. The results of this research will be shared with RFW and MWRC staff and will inform the implementation and delivery of services in the partnership.

## Conclusion

Aboriginal and Torres Strait Islander communities possess knowledge and strengths to provide solutions, promote positive health, and reduce disparities. The Marurra-U Partnership is a hybrid, multidisciplinary, wraparound model of care for Aboriginal and Torres Strait Islander children and families with lived experience of FASD and other complex needs. It is a valuable example of a partnership between an ACCO and a service provider, with potential to foster community leadership and integrate Aboriginal and Torres Strait Islander and Western knowledge to strengthen health and wellbeing outcomes.

## Abbreviations

AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
ACCO	Aboriginal Community Controlled Organisation
ACE	Adverse childhood experience
ADHD	Attention-deficit/hyperactivity disorder
ASD	Autism spectrum disorder
COREQ	Consolidated criteria for reporting qualitative research
DIDO	Drive-in drive-out
FASD	Fetal Alcohol Spectrum Disorder
FIFO	Fly-in, fly-out
KAMS	Kimberley Aboriginal Medical Service
MWRC	Marninwarntikura Women's Resource Centre
NHMRC	National Health and Medical Research Council
RFW	Royal Far West
WACHS	Western Australian Country Health Service

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12913-025-13258-8>.

Supplementary Material 1.

Supplementary Material 2.

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## Authors' contributions

TS (non-Indigenous): Conceived the study, drafted study design and interview questions; conducted interviews; transcribed the interviews; designed and led the qualitative analysis; wrote the manuscript. AP (non-Indigenous): Conceived the study, drafted study design and interview questions; conducted interviews; transcribed the interviews; designed and conducted qualitative analysis; wrote the manuscript. EC (Aboriginal, Gooniyandi and Kija): conceived the project; assisted with the grant application; oversaw the project and contributed Aboriginal knowledge and lived experience. ST (non-Indigenous): assisted with the study design, grant application and grant management; helped identify key people for the interviews; critically reviewed the manuscript. JD (Aboriginal, Gooniyandi and Kija): assisted with the grant application; and contributed Aboriginal knowledge and lived experience, and critically reviewed the manuscript. RE (non-Indigenous): assisted with study design and development of interview questions, reviewed themes, and critically reviewed manuscript. DH (non-Indigenous): critically reviewed manuscript. KC: assisted with grant application, assisted with study design, reviewed manuscript. TE (Aboriginal, Noongar and Yamatji): Assisted with the grant application; and contributed Aboriginal knowledge and lived experience, critically reviewed manuscript. BA (non-Indigenous): Assisted with the grant application, critically reviewed manuscript. EE (non-Indigenous): Conceived the project, assisted with the grant application; provided expertise into the study design and critically reviewed the manuscript. AM (Canadian Inuit family): conceived the project, study design and interview questions; led the grant application; oversaw the project, reviewed themes, critically reviewed the manuscript and provided Indigenous knowledge and lived experience.

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## Data availability

The datasets generated and analysed during the current study are not publicly available due to security and confidentiality. Facilitated by MWRC, the data is owned by the communities of the Fitzroy Valley, and access is provided through MWRC and the University of Sydney.

## Declarations

### Ethics approval and consent to participate

This study was approved by the Western Australian Aboriginal Health Ethics Committee (HREC1246). All participants provided informed consent prior to participating in this study. The study was conducted in accordance with the Declaration of Helsinki.

### Consent for publication

Not Applicable.

### Competing interests

The authors declare no competing interests.

**Author details**

<sup>1</sup>Faculty of Medicine and Health, The University of Sydney, Sydney, NSW, Australia

<sup>2</sup>Marulu Team, Marninwarntikura Women's Resource Centre, Fitzroy Crossing, WA, Australia

<sup>3</sup>Royal Far West, Manly, NSW, Australia

<sup>4</sup>Indigenous Faculty of Business and Law, Curtin University, Perth, WA, Australia

<sup>5</sup>The George Institute for Global Health, UNSW Sydney, Sydney, NSW, Australia

<sup>6</sup>Faculty of Medicine and Health, Specialty of Child and Adolescent Health, The University of Sydney, Sydney, Australia

<sup>7</sup>Sydney Children's Hospitals Network (Westmead), Sydney, NSW, Australia

<sup>8</sup>Dalla Lana School of Public Health, The University of Toronto, Toronto, Canada

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