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Healthy ageing in remote Cape York: a co-designed Integrated Allied Health Service Model

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ABSTRACT

Allied health services in rural and remote hospitals often work in siloed and solo discipline-specific positions. They are often part of general multi-disciplinary teams without a clearly articulated service model that integrates care for individuals and addresses broader community health needs. Integrated care service models for clients with complex disabilities or chronic health needs have demonstrated improved outcomes, but feasible service models are rarely described in the context of rural, remote and Aboriginal and Torres Strait Islander communities. Integration can support primary health care in remote communities where resources are thin, and the breadth of multidisciplinary service providers is not available. A remote health service, in collaboration with a University Department of Rural Health and community partners, developed a community rehabilitation and lifestyle service for adults who experience chronic disease, disability or were at risk of functional decline due to frailty. Using an integrated approach, this model of care improves access to specialist and primary healthcare services, delivers targeted group-based rehabilitation and preventative activities, and addresses community and workforce capacity to meet the needs of the remote community. This paper describes a remote primary health care, Integrated Allied Health Service Model, developed with a focus on the co-ordination and integration of care and resources between the health service, education and community.

Keywords: Aboriginal and Torres Strait Islander peoples, allied health services, community health care, consumer participation, delivery of health care, healthy ageing, integrated, rural and remote health services, student health services.

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Introduction

There is an urgent need in rural and remote communities to develop an evidence base that informs the unique health systems and develops optimal ways to address population need and workforce shortages. Around 50% of the global population lives rurally, but health outcomes continue to lag behind those of metropolitan areas (International Labour Organization 2015; United Nations Department of Economic and Social Affairs Population Division 2018). Despite poorer health outcomes and higher health need, workforce shortages and misdistribution mean rural communities do not have access to the range of services available in metropolitan centres (Adams *et al.* 2015). Suboptimal services widen the health and wellbeing gap (Australian Institute of Health and Welfare 2021); they are costly to the health system, disabling for the individual and produce unsustainable carer demands (Australian Institute of Health and Welfare 2019). In rural communities, where demand exceeds available resources, services can either resource ration (Adams *et al.* 2015) or innovate and redesign service models and workforce roles to meet the communities' needs (Dew *et al.* 2012).

In remote and very remote Aboriginal and Torres Strait Islander communities, allied health, mental health and disability services are often fragmented (Gilroy *et al.* 2020), under-resourced (O'Sullivan and Worley 2020), rationed (Adams *et al.* 2015) and delivered in Western-centric models that are culturally and spiritually at odds with Aboriginal and Torres Strait Islander peoples' beliefs on disability, collective wellbeing and reciprocity (Gilroy *et al.* 2020; Ridoutt and Nancarrow 2021). Yet, Aboriginal and Torres Strait

Islander peoples (hereafter respectfully referred to as First Nations Peoples) are twice as likely to experience disability across the lifespan compared with non-Indigenous peoples (Australian Bureau of Statistics 2015). Life expectancy for First Nations Peoples in remote and very remote areas is 13.8 years lower for men and 14.0 years lower for women than the national average (Australian Bureau of Statistics 2018). Social determinants of health are estimated to account for at least 34% of the health gap between First Nations and non-Indigenous Australians (Australian Institute of Health and Welfare 2020). Healthcare models for First Nations Peoples, especially those in rural and remote areas, must address social determinants to achieve greater health equity.

Rural and remote communities have consistently identified the need for co-ordinated, integrated and responsive services (Smith *et al.* 2011; Gilroy *et al.* 2020; Cairns *et al.* 2022; Bird *et al.* 2023). This is particularly true of remote First Nations communities who repeatedly call for service models that support self-determination and partnerships with service providers to improve health outcomes (Gilroy *et al.* 2020; Cairns *et al.* 2022). Integrated care models could address these needs and lead to better health outcomes and a reduction in healthcare costs (Dajczman *et al.* 2013; World Health Organization 2016; Bohanna, Harriss *et al.* 2021). Integration is most frequently used to describe harmonisation within health services or clinical integration but can also be used to describe collaboration between health and non-health sectors (community integration) (May 2015). Integrated care models streamline healthcare delivery across providers, specialties and locations (World Health Organization 2016). Their primary aim is to boost patient outcomes and experiences through the collaborative efforts of healthcare professionals and services (World Health Organization 2016).

Integrated care models involving students in rural and remote areas can positively impact healthcare access, workforce distribution, cultural competence and overall healthcare outcomes in underserved areas (Greenhill *et al.* 2015; Thackrah *et al.* 2017; Campbell *et al.* 2020; Reed *et al.* 2021). These models encourage students to choose rural practice, addressing workforce shortages (Greenhill *et al.* 2015; Campbell *et al.* 2020). Interprofessional education in rural settings fosters teamwork and improves care quality (Reed *et al.* 2021), and in First Nations communities, enhances cultural competence and culturally sensitive care (Thackrah *et al.* 2017). Additionally, student-led clinics in rural and remote Australia provide essential health care and engage local communities (Campbell *et al.* 2020; Barker *et al.* 2022); internationally, these clinics have demonstrated high patient satisfaction (Fröberg *et al.* 2018).

This article describes an Integrated Allied Health Service Model involving university students on clinical placement. The Service focused on healthy ageing for three remote communities in western Cape York, Far North Queensland.

Setting

The communities of Weipa, Napranum and Mapoon are very remote communities, classified as Modified Monash 7 (Department of Health and Aged Care 2021), located in the western region of Cape York, Far North Queensland. Weipa, with a population of around 4000 individuals (Australian Bureau of Statistics 2021), is considered one of Australia's most remote regions. It is 880 km from Cairns, a major regional centre. Napranum and Mapoon, both distinct Aboriginal communities, are characterised by an ageing population with a significant prevalence of chronic health conditions. Napranum, located just a 10 min drive from Weipa, is home to approximately 880 residents (Australian Bureau of Statistics 2021). The traditional owners of this country are the Alngith people. Meanwhile, Mapoon, situated 86 km north of Weipa, has a population of roughly 500 people (Australian Bureau of Statistics 2021). The traditional owners of this country are the Tjungundji people. Notably, for Mapoon, road accessibility is restricted during the 'wet' season.

Partners to an Integrated Allied Health Service Model in Cape York

The Service was co-designed by local community representatives including Elders, health services (public and community controlled), Aboriginal community Council services and a University Department of Rural Health (UDRH) (Cairns *et al.* 2022), and was piloted in 2018. Three key principles underpinning the Service model were derived from the National Aboriginal and Torres Strait Islander Health Plan 2013–2023 (Australian Government 2013) and the six key capabilities in the Indigenous Allied Health Australia, Cultural Responsiveness Framework (Cranney 2019). They included; ongoing and consistent community engagement, community-based and culturally responsive care, and flexible service delivery (Cairns *et al.* 2022).

The co-design process and the experience of the clients initially involved in the Service has previously been published (Cairns *et al.* 2022; Sarovich *et al.* 2024). Prior to the Service commencing, the local allied health workforce was made up of a full-time physiotherapist, dietitian, speech pathologist, social worker and occupational therapist and one part time podiatrist, working across the lifespan. These staff serviced the local multipurpose health service (hospital), with outreach responsibilities for up to six very geographically dispersed communities. The Service commenced as a continuous service in June 2019 co-funded by the North Queensland Primary Health Network (NQPHN) and James Cook University (JCU) with in-kind funding from Torres and Cape Hospital and Health Service (TCHHS). The focus of the Service was to promote healthy ageing.

For the first 2 years, the Service was delivered by JCU under a Memorandum of Understanding (MOU) with TCHHS.

TCHHS provided office space within the local hospital along with credentialing Service staff, inclusion in weekly multidisciplinary team (MDT) meetings, discipline-specific supervision and the use of Queensland Health patient information records for clinical documentation. JCU provided in-kind accommodation for students, a local on-site student coordinator and weekly cultural mentoring including local cultural orientation.

From June 2021, the Service transitioned to a co-funding arrangement with TCHHS and NQPHN. JCU continues to provide funding for student accommodation, a local multidisciplinary training facilitator, cultural mentoring and in-kind research and evaluation support and capacity building.

The Service: Integrated Allied Health Service Model

The Service was co-designed to be holistic and flexible, responding to the evolving needs of each community as described in Cairns *et al.* (2022). Central to the co-design process was the aim of pooling collective resources to support the community to enhance the wellbeing for all. In response to this an Integrated Allied Health Service Model (Fig. 1) was developed that prioritised relational care (relationships before business). The primary focus of this model was to enhance the health and wellbeing of the greatest number of people (population level). This approach involved the community and the Service working together to build the capacity of both groups to support community-based healthy ageing (Tier 1); co-facilitation of group programs by the Service and community organisations (Tier 2); and the delivery of individual rehabilitation or specialist care, coordinated through the Service (Tier 3).

The Service aimed to achieve both community integration and clinical integration. Clinical integration was delivered through an interprofessional team approach led by an Allied Health Clinical Lead (not a discipline-specific position) and an Indigenous Allied Health Co-worker (commonly referred to in health services as an Allied Health Assistant) (Cairns *et al.* 2022). Allied health students on their university placements assisted in the delivery of the Service including those studying occupational therapy, social work, nutrition and dietetics, physiotherapy and speech. Students were supervised by both the Service clinicians and a discipline-specific supervisor that was employed at the local public hospital. Students were also supported with weekly cultural mentoring by a local multidisciplinary training facilitator. Other aspects that facilitated clinical integration were weekly MDT meetings and shared clinical records.

Tier 1 – Capacity building

Community integration was prioritised through formal stakeholder reference groups and informal community engagement, which identified a need for the Service to support the broader community wellbeing (Cairns *et al.* 2022). Community integration was delivered through partnering with community organisations such as Council run aged and disabled services

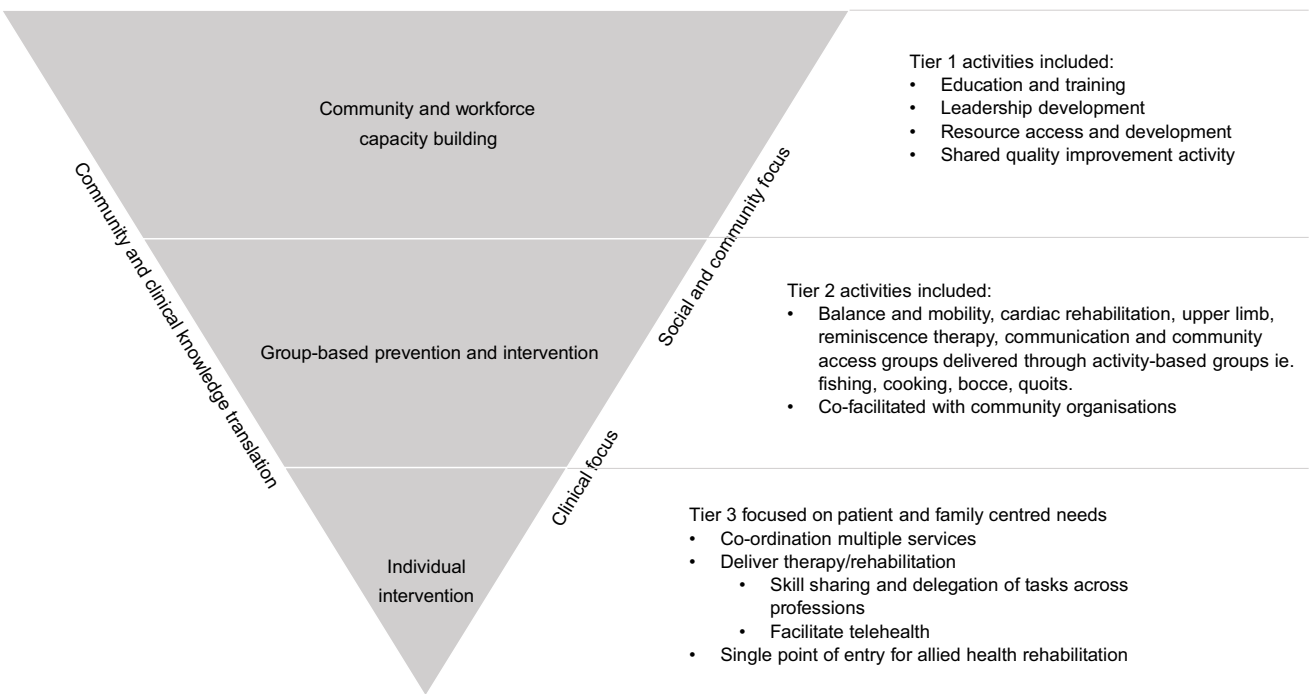

Fig. 1. Proposed Integrated Allied Health Service Model.

(previously Home and Community Care, HACC) and the Police Citizens Youth Club (PCYC). Collaboration with these organisations included weekly discussions with management and staff, which facilitated joint problem-solving focused on improving services for healthy ageing and subsequently creating mutual, quality improvement initiatives (two-way learning).

The pivotal leadership roles the Indigenous Allied Health Co-worker and the Allied Health Clinical Lead played in fostering relationships with community organisation managers were critical in maintaining the continuity of objectives of the Service despite a transient student, community and broader health workforce. The regular and consistent presence of Service staff and students within community organisations enabled them to witness and support day to day operations and provide considerable informal opportunities for two-way learning. Community staff would teach the Service staff and students about community and cultural knowledge that would support engagement with clients, their families and the wider community. They also co-facilitated groups and observed therapy sessions, acquiring skills and knowledge from the Service staff and students. These weekly interactions, co-facilitation of programs, shared quality improvement activities and the relationships that evolved were crucial to the success of the Service in supporting community wellbeing. Additionally, the Service maintained an active presence at local senior days, health expos, career days and many other community events where information, resources and educational materials about health and wellness where shared with the community.

Community capacity building example

Community organisations and the Service recognised barriers to older and disabled community members participating in activities. To address this, the Service staff and students secured grants with organisations to purchase specialised chairs, improving the safety, comfort and capacity of the community services to support better health and wellbeing of individuals.

Tier 2 – Group-based prevention and intervention

Community integration was delivered through group programs in partnership with community organisations and a residential aged care facility. This collaborative effort encompassed more than half of the clinical services offered and demonstrated culturally sensitive and resource-efficient delivery. The group interventions adopted a holistic approach, recognising that clients presented with a range of co-morbidities and broad needs. These group sessions often involved various therapeutic domains tailored to the needs of individual clients. Clinical work primarily fell within the following areas: balance and mobility, upper limb rehabilitation, falls prevention, cardiac rehabilitation, functional communication, and connecting with community (encompassing social engagement and community mobility). Furthermore, activities such as fishing, cooking, bocce and quoits were integrated into structured physical exercises to deliver therapy in a culturally responsive and motivational way.

Connecting with community

The Napranum Aged and Disability Service led a fishing group in response to male clients identifying fishing as a rehabilitation goal and social/cultural need. This weekly group supported clients with physical, social or cognitive limitations to access the beaches and perform fishing tasks. The Service co-facilitated this group, incorporating individual rehabilitation goals and therapy interventions into the fishing group such as mobility, upper limb, cognitive and communication skills.

Tier 3 – Individual intervention

The Service aimed to provide timely and comprehensive specialist care for individuals in community through the delivery of coordinated interprofessional care. Rehabilitation services were provided in collaboration with discipline-specific professionals, using a range of mechanisms including joint clinical sessions, telehealth, skill sharing, delegation and MDT reviews. At times, a person-centred approach necessitated the use of a case management style to address a client's needs.

Individual intervention: a case study

A 56-year-old First Nations man with multiple chronic health conditions and declining physical function was referred to the Service. Given his sporadic engagement with health care, establishing trust was crucial. The Service provided person-centred therapy twice weekly with flexible scheduling and location such as beach sessions and walking while talking, home visits and clinic sessions. Initially yarning focused on his goals, health conditions and upcoming appointments to build a shared understanding of his wellbeing.

With this understanding, the Service worked with other health services to align services with the patients' goals and to coordinate appointments to minimise the disruption caused by medical appointments on his life. Strategies included: (a) joint sessions with the Service and other health providers including diabetic education, nurse navigation and specialist medical services to reduce the number of appointments and to support health literacy; (b) coordination of his tertiary appointments to reduce patient travel burden; and (c) integrating allied health services through skill sharing or task delegation. For example, the podiatrists' shared their expertise in wound dressings and foot condition monitoring through in-person demonstrations, physiotherapy students, under supervision, prescribed mobility exercises and a treatment plan that were skill shared with the other Service students and staff to allow ongoing therapy. The interventions were continually monitored during MDT meetings and collaborative clinical reviews.

Coordination with community organisations included: connecting with Council services for meals, transport and participation in the fishing group; liaising with the Department of Housing for bathroom modifications and independent housing with social work support; and liaising with mining and employment agencies to support employment or volunteer opportunities.

Ethics approval

Ethical approval was granted by the Far North Queensland Human Research Ethics Committee (HREC/2018/QCH/46467 – 1291). Appropriate informed consent was provided by the Case Study Participant to publish their information relating to their engagement with the service.

Implications for practice

The Integrated Allied Health Service Model delivered a service that supported both clinical and community integration. Models such as this require health staff to work 'outside the box' and reorient the model of care to establish and maintain a shared vision with community organisations to address community-priortised needs. The blurring of clearly defined roles between health and social services into a more collective approach facilitated resource pooling and, in rural and remote communities with limited resources, it may be the only way to deliver consistent quality care.

In this context, the leadership role of the First Nations staff and community members were critical in aligning the model with a more culturally responsive practice that prioritised relational care and cross-sector relationships. The structure of the model, which addresses community, preventative and primary care needs, has the potential to be translatable to other rural and remote communities, with consideration of place-based needs. Models that include student placements are both a rural workforce recruitment strategy (Department of Health and Aged Care 2023) and can address health service gaps in remote communities with a limited local allied health workforce (Campbell *et al.* 2020).

A formal evaluation of the feasibility, acceptability and effectiveness of the service model is currently underway. Early analysis suggests that the service model is acceptable to all stakeholders. Its success was dependent on the integral role of the community partnerships, funding to deliver the program and supervise the students, and clear partnership arrangements. Role clarity between allied health professionals within the health service and their understanding of how the Service fitted into their workload and priorities was the main limitation.

Conclusion

Remote communities require primary healthcare services that are inclusive of allied health and can be responsive to individual and community needs. Services require a workforce model that can be creative and flexible. The Service described in this paper delivered a novel Integrated Health Service Model that complemented the primary healthcare services already being delivered, and focused on workforce and community capacity building.

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