

2022

Developing a community rehabilitation and lifestyle service for a remote Indigenous community

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[10.1080/09638288.2021.1900416](https://doi.org/10.1080/09638288.2021.1900416)

This is an Accepted Manuscript of an article published by Taylor & Francis in DISABILITY AND REHABILITATION on 23/03/2021, available online: <http://www.tandfonline.com/10.1080/09638288.2021.1900416>.

Cairns, A., Geia, L., Kris, S., Armstrong, E., O'Hara, A., Rodda, D., ... Barker, R. (2022). Developing a community rehabilitation and lifestyle service for a remote Indigenous community. *Disability and Rehabilitation*, 44(16), 4266-4274.

<https://doi.org/10.1080/09638288.2021.1900416>

This Journal Article is posted at Research Online.

<https://ro.ecu.edu.au/ecuworkspost2013/10051>

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1 **Developing a community rehabilitation and lifestyle service for a**
2 **remote Indigenous community**

3
4 **Running title:** Indigenous community rehabilitation

5 **Article category type:** Research Paper

6 **Purpose:** Community rehabilitation is an essential health service that is often not
7 available to remote Australians. This paper describes the first cycle of a
8 collaborative project, between local community members, allied health
9 professionals and a university, to co-design a community rehabilitation and
10 lifestyle service to support adults and older people to stay strong and age well in
11 place.

12 **Methods:** An action research framework was used to develop the service for
13 adults in two remote communities, one being a discrete Aboriginal community.
14 The first cycle involved planning for, and trialling of a service, with observations,
15 reflections and feedback from clients, community members, university students
16 and health service providers, to inform the subsequent service.

17 **Results:** Over two years, stakeholders worked collaboratively to plan, trial,
18 reflect and replan an allied health student-assisted community rehabilitation
19 service. The trial identified the need for dedicated clinical and cultural
20 supervision. During replanning, three key elements for culturally responsive care
21 were embedded into the service: reciprocity and yarning; holistic community-
22 wide service; and Aboriginal and Torres Strait Islander mentorship.

23 **Conclusions:** An action-research approach to co-design has led to the
24 establishment of a unique community rehabilitation service to address disability
25 and rehabilitation needs in two remote Australian communities.

26 **Keywords:** Aboriginal, Torres Strait Islander, First Nations, allied health,
27 rehabilitation, community rehabilitation, rural, action research, cultural safety.

31 **Introduction**

32 Enabling individuals to optimise their physical, cognitive and emotional health and
33 wellbeing is one of society's greatest challenges. To meet that challenge, community
34 rehabilitation services aim to improve or maintain function and promote quality of life
35 for children with developmental disorders, adult conditions such as stroke or cardiac
36 event or with deterioration due to aging. [1] Community rehabilitation services are
37 readily available in metropolitan areas [2] however, people living in remote
38 communities throughout Australia have very limited access to community rehabilitation
39 services, despite the WHO recommendations for disability services to be available for
40 all. [3] This is in part due to the limited number and fluctuating availability of allied
41 health professionals that usually provide these services. [4, 5] This is particularly
42 evident in Northern Australia, a very sparsely populated area that includes a high
43 proportion of Indigenous people. Consequently, in these communities, services are
44 commonly fragmented, sporadic and inflexible to demand, in part due to inflexible
45 organisational policies [6].

46 The need for community rehabilitation and disability services in remote
47 Indigenous communities is largely undocumented. [7] However, Indigenous
48 Australians, who make up 18% of remote and 47% of the very remote population living
49 in Australia, are up to 2.9 times more likely than non-Indigenous Australians to have a
50 disability or restrictive long-term health condition and need assistance with self-care,
51 mobility or communication.[8] Long-term disability affects almost half (45%) of
52 Indigenous Australians who are at greater risk of disability earlier in life due to the high
53 rates of chronic disease, infectious diseases, accident related trauma and injury from
54 substance use.[9, 10, 11] Generally, age-related conditions affect Aboriginal and Torres
55 Strait Islander people at a younger age than non-Indigenous Australians. For example,

56 the rate of dementia in people aged 45+ years is five times higher for Aboriginal and
57 Torres Strait Islander people, than for the Australian population overall. [12, 13]
58 Furthermore, the experience of disability is known to increase with increasing
59 remoteness. [14]

60 Allied health professionals (AHPs) working in rural communities across
61 Australia have reported being unable to support demand for rehabilitation and disability
62 services.[15] Innovative models of rehabilitation service delivery in remote and
63 resource poor communities within Australia have explored the use of Community
64 Rehabilitation Assistants [16], allied health assistants and Community-Based
65 Rehabilitation (CBR). [2, 17, 18, 19] The translation of this research and other
66 innovative models however, have not achieved widespread application and considerable
67 work is required to develop sustainable models for remote Australia.[20] Lastly, other
68 models such as student-assisted or implemented rehabilitation services have been
69 trialled in other regional and rural areas within Australia.[21, 22, 23] This is an
70 emerging field of practice that requires ongoing evaluation of the feasibility,
71 acceptability and effectiveness of student-assisted models.

72 Evidence of implementation and evaluation of community rehabilitation models
73 that are sustainable, culturally responsive, acceptable, accessible and effective in remote
74 Australia is limited though emerging.[19, 24, 25, 26, 27] There is considerable research,
75 however, drawing on client, family and community perspectives on what culturally
76 responsive disability, aged care and rehabilitation services may look like, building the
77 evidence for a change in current practice. [6, 26, 27, 28, 29, 30] Culturally safe service
78 provision for Indigenous people requires a philosophical shift in practice away from a
79 biomedical, neoliberal discourse on health provision to one that positions an Indigenous
80 perspective of health, which is holistic and collective, at the centre.[31, 32]

81 Cultural safety is central to effective health care. Developed by Maori nurse
82 Irihapeti Ramsden, its tenet is challenging issues of power, in knowledge and other
83 inherent power relations in health service provision [33]. Ramsden theorised that health
84 care provision for all peoples need to recognise and work with a person's humanity in
85 their unique culture. Cultural safety shines the spotlight on non-Indigenous practitioners
86 to reflect on the self, the rights of others (Indigenous people), the legitimacy of
87 difference, and its application to all relationships and structures in developing a
88 culturally safe workforce and safe service delivery. [33]

89 Researchers and clinicians often recognise the need for culturally safe practice to
90 reduce health inequities between Indigenous and non-Indigenous Australians [34, 35]
91 but stop short of documenting the daily practices to support this.[34, 36] A recent
92 scoping review on cultural competence in rehabilitation services identified key
93 facilitators for service provision including increasing cultural awareness amongst
94 clinicians (e.g. recording cultural diversity, encouraging reflective practice), fostering a
95 culturally competent work environment (e.g. diverse workforce, flexible appointment
96 time and place, partnering with cultural organisations) and supporting the navigation of
97 the health system.[35] Barriers to access rehabilitation services or therapy for
98 Indigenous people have been reported as transport to services, unwelcoming clinic
99 space and family obligations.[25, 37] In Australian mainstream health services, the
100 responsibility for the delivery of culturally safe services is embedded in the role of
101 Aboriginal Health Workers.[38] This sense of responsibility by Aboriginal Health
102 Workers for ensuring services are safe and accessible has been reported previously, they
103 become 'everything to everybody'. [38] However, a culturally safe service, particularly
104 in remote Indigenous communities, will require a more structural change of practice,
105 where the provision of culturally safe services is embedded in the inception of every

106 aspect of service development, design, delivery and evaluation. The current practice of
107 positioning one group of people (Aboriginal Health Workers) to be responsible for this
108 change potentially absolves the rest of the service from taking responsibility for meeting
109 this requirement.

110 To address the lack of culturally safe and accessible community rehabilitation
111 services, community members in two remote Northern Australian communities
112 collaborated with allied health professionals and a university to develop a locally based
113 community rehabilitation and lifestyle service. This project is the outcome of
114 engagement and discussions between stakeholder groups and individual community
115 elders who identified the need to support older people to age well in community.

116

117 ***Indigenous research framework***

118 This project was the result of people and organisations coming together to explore a
119 better way to support adults and older people to live a strong and healthy life. While
120 community consultation was an integral part of this project from the outset, the project
121 was initially dominated by non-Indigenous researchers and health service providers,
122 creating a power imbalance rooted in colonial structures. Recognising the risk of
123 developing a service that would fit a western world view of health service delivery,
124 changes were made to align the research with an Aboriginal Research Framework [39].
125 This approach incorporates a Strengths-based Approach [40] to explore the capacity and
126 resilience within the communities to improve the health and wellbeing of the whole
127 community. This included leadership by Aboriginal researchers in the research team at
128 both the academic and community level, representation of the diversity of Indigenous
129 people within the community, and the impact on colonisation on the social determinant
130 of disability.

131 The purpose of this paper is to describe the first cycle of the development of this
132 service. The aim of the first cycle was to explore the opportunity for, a culturally-
133 responsive community rehabilitation service for the two remote northern Australian
134 communities.

135 **Methods**

136 *Study Design*

137 A mixed-method action research approach was employed to develop a co-designed
138 community rehabilitation service. Action research is a participative methodology, which
139 aims to facilitate innovation and change.[41] It is increasingly been used in healthcare
140 as a process-oriented approach to problem solving complex, systems-based, health
141 service issues.[41, 42] The action research process entails an iterative cyclical process
142 of planning, acting, observing, reflecting and replanning, where findings are fed back to
143 stakeholders to inform decisions about subsequent stages of the study.[42]

144 The focus of this paper is on the first action-research cycle as follow: (figure 1):
145 i) planning –formation of a stakeholder group, community consultation, and
146 development of an innovative service model. ii) trialling of the service whilst observing,
147 reflecting and obtaining feedback from all stakeholders on the acceptability and
148 feasibility of the service model. iii) replanning the service based on the trial experience.

149 For the purpose of this project, community rehabilitation was defined as ‘a
150 process that seeks to equip, empower and provide education and training for
151 rehabilitation clients, carers, family, community members and the community sector to
152 take on appropriate roles in the delivery of health and rehabilitation services to achieve
153 enhanced and sustainable client outcomes’. [43] Although elements of community-
154 based rehabilitation are reflected in the project, CBR was not the underpinning

155 philosophy. [44] Instead we focused on a culturally responsive approach to address the
156 needs of the community by drawing on the Indigenous Allied Health Australia (IAHA)
157 framework.

158 ***Guiding Principle - Cultural Safety***

159 The Indigenous Allied Health Australia (IAHA) cultural responsiveness framework [45]
160 was used as the guide for embedding culturally responsiveness into the service. IAHA
161 asserts that “cultural responsiveness has cultural safety at its core”, it aims to transform
162 the way people practice by incorporating knowledge (knowing), self-knowledge and
163 behaviour (being) and action (doing).[45]

164 The IAHA cultural responsiveness framework has three driving principles –
165 Being, Knowing and Doing. and key capabilities; respect for the centrality of cultures,
166 self-awareness, proactivity, inclusive engagement, leadership and, responsibility and
167 accountability were explored and incorporated into the service philosophy and
168 model.[45] The stakeholder group used an iterative process, involving constant
169 reflection and rechecking of the service model.

170 The Aboriginal view of health, “not just the physical well-being of an individual
171 but refers to the social, emotional and cultural wellbeing of the whole Community in
172 which each individual is able to achieve their full potential as a human being thereby
173 bringing about the total well-being of their Community”,[46] was recognised as the key
174 philosophy for the service.

175 Ethical approval was obtained from the Far North Queensland Human Research
176 Ethics Committee (HREC/2018/QCH/46467 - 1291) with support from the local
177 Aboriginal Community Controlled Health Service and local council.

178 ***Setting***

179 This project was undertaken in two communities in Northern Queensland, Australia.
180 These two communities are classified as very remote (Modified Monash 7) and are over
181 800km by road from the nearest regional centre [47]. The larger of the two communities
182 (population 3500) has approximately 20% Indigenous residents and is a mining town. A
183 small hospital functions as the ‘hub’ for local allied health services. The smaller of the
184 two communities (population approximately 1000) is a discrete Aboriginal community
185 that also has a significant Torres Strait Islander presence. The two communities are
186 10kms apart and are accessible to each other by road all year. The discrete Aboriginal
187 community became the focus and ‘hub’ for the community rehabilitation and lifestyle
188 service however, both communities had access to the newly developing service. At the
189 commencement of the project, no additional financial resources were available to
190 develop this project. Members of the stakeholder group used existing resources within
191 their facilities to participate, demonstrating a genuine commitment for change by all
192 parties involved.

193 ***Stakeholder Group***

194 This project was a collaboration between the key stakeholder organisations: local health
195 services, Aboriginal community council services, community organisations such as the
196 Police-Citizens Youth Club (PCYC), and the local University Department of Rural
197 Health (UDRH). A stakeholder group with representation from all collaborating
198 organisations was established to guide the development and implementation of the
199 service and to provide oversight of the entire project. Consisting of both Indigenous and
200 non-Indigenous people, the members of the stakeholder group who all lived and worked
201 within the region, included: allied health staff employed by the state government health

202 service; the manager and health staff employed by the local Aboriginal Community
203 Controlled Health Service; the managers of key community organisations (PCYC and
204 the Aged and Disability Services); executive members of the Regional Council; and, a
205 researcher and student co-ordinator for the UDRH. Mentorship and supervision for the
206 project was sought from experienced researchers and rehabilitation clinicians across
207 Northern Australia.

208 The stakeholder group provided the formal process of community consultation
209 and engagement. In addition, informal engagement was constantly used by all members
210 of the stakeholder group to explore ideas and receive feedback from a large number of
211 community members, including students, health staff and clients. This included
212 community members with disabilities and frail age and their carers, support workers
213 from various organisations, disability service providers, representatives from other
214 community organisations such as the local church, community elders, and non-allied
215 health primary care health providers.

216 The procedure for informal feedback and adjustment to service delivery during
217 this time was iterative and constant requiring a fluidity of service development and
218 management. Collation of this process was formally feedback to the stakeholder group
219 at the end of the service trial period. Successes and challenges of the trial were
220 discussed and documented. The stakeholder group then determined key areas for service
221 improvement and redesigned the service accordingly.

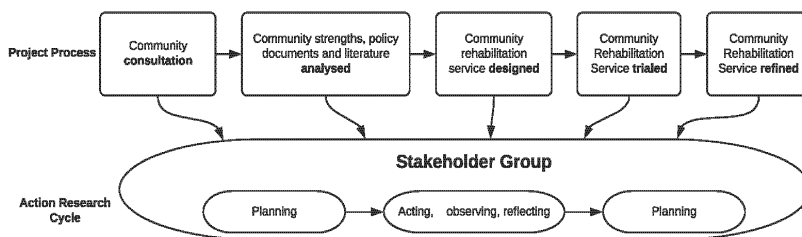
222 ***Project Procedure***

223 The project planning, action, reflection and replanning process is illustrated in figure 1.
224 The planning process for the service model consisted of formal stakeholder meetings
225 where members discussed their experiences of rehabilitation services, including

226 findings in the scientific literature and key policy documents on rehabilitation services
 227 and healthy aging; explored community strengths for supporting healthy aging; and
 228 provided feedback from their informal community consultations. The formal
 229 stakeholder group meetings initially occurred monthly, then transitioned to a minimum
 230 of three times a year. Informal engagement across the stakeholder group and the wider
 231 community was constant and fluid. Through yarning and informal conversations,
 232 members of the stakeholder group explored other community member's ideas,
 233 aspirations, experiences and preferences for rehabilitation and healthy aging services.
 234 Yarning is a storytelling process, grounded in Indigenous methodology, for developing
 235 a shared understanding between researcher and participant, [32] and in this case, a
 236 shared understanding with members of the stakeholder group and the broader
 237 community. Information gathered between stakeholder meetings was collated by the PI
 238 and presented to the stakeholder group during formal meetings, and included in the
 239 minutes for each meeting.

240 **Figure 1: Procedure and action-research steps described in this project.**

241



242 **Results**

243 *Planning: Reviewing literature, identifying community strengths, developing a*
244 *model*

245 Reviewing literature: Members of the stakeholder group reviewed the key strategies to
246 achieve healthy aging outlined in the National Aboriginal and Torres Strait Islander
247 Health Plan 2013-2023. [48, 49] The underlying principles for the rehabilitation service
248 were derived from these strategies [49], the six key capabilities identified in the IAHA
249 culturally responsive framework, [45] and previous research exploring key elements for
250 successful rehabilitation services in remote Indigenous communities. [19, 25, 26, 27,
251 29] These documents and the feedback from the wider community consultations were
252 used to develop three key principles for the service which included; ongoing and
253 consistent community engagement, community-based and culturally responsive care,
254 and flexible service delivery.

255 The strengths of existing community resources were explored, recognising the
256 current efforts being made by each of the contributing stakeholders to support healthy
257 ageing. Such efforts included delivery of primary health care services, existing
258 partnerships between allied health staff and local aged and disability services, health
259 service partnerships with the local UDRH to support allied health student placements,
260 social activity programs run by local aged and disability service, and PCYC funding to
261 support recreation across the lifespan.

262 *Components of the community rehabilitation service model*

263 During the planning process the opportunity for an allied health student-led community
264 rehabilitation service was discussed and considered a feasible option. Local government
265 health services and the local UDRH agreed to arrange for allied health students

266 (physiotherapy, occupational therapy, social work, dietetics and speech pathology) to
267 complete university clinical placements in the two remote communities. Student
268 placements ranged from 5-14 weeks in length, and a portion of the student's time (up to
269 3 days/week) could be dedicated to providing a student-assisted rehabilitation service, a
270 process successfully trialled elsewhere.[22, 50, 51]

271 Local allied health professionals agreed to provide supervision of students using
272 an inter-professional model of supervision depending on which allied health profession
273 was available to supervise the students on any given day. This model also involved
274 students receiving discipline-specific placement opportunities and supervision while
275 they were not providing the community rehabilitation service and at least once a week
276 their discipline supervisor provided the community rehabilitation supervision.

277 To support a trial of a student-assisted service, the community aged and
278 disability service, run by the Regional Council as well as the residential aged care
279 service, recognised an opportunity to 'host' the service. These community organisations
280 became the base for the allied health professionals and students providing community
281 rehabilitation. This meant allied health professionals and students could work alongside
282 the support workers at the aged and disability service and aged care facility to provide
283 individual and group rehabilitation services in a way that it would be embedded in the
284 community. Students completed mandatory online cultural awareness training prior to
285 arriving on site. During their first week they received up to three hours of local cultural
286 awareness training from an Indigenous Liaison Officer, based at the local health service.
287 Students had weekly formal Interprofessional Education Sessions that included cultural
288 mentoring from a local Aboriginal and/or Torres Strait Islander Health Workers or the
289 Indigenous Liaison Officer.

290 Support also came from health services for local Aboriginal and/or Torres Strait
291 Islander Health Workers based at the primary health care clinics to act as key personnel
292 for students in the role of ‘cultural brokers’ [38], supporting students to engage with
293 clients in their homes or in community spaces external to the residential and aged care
294 disability service.

295 *Delivery of services*

296 A decision was made by the stakeholder group that anyone in the community was able
297 to refer to the service including self-referral. Once a referral was received, engagement
298 of clients in the service involved three stages; an engagement phase, therapy phase, and
299 review phase. The engagement phase involved introducing the client to the service, to
300 the allied health professionals and students followed by completion of an allied health
301 assessment, a quality of life measure, and goal setting with the client.

302 During the therapy phase, the client participated in a service that was tailored to
303 suit their needs and goals. Goals varied and included; throwing a fishing cast net off the
304 beach; shopping independently; remain living at home. Therapy involved a mix of
305 individual and group sessions, including (but not limited to) balance and mobility
306 activities, upper limb activities, social engagement and cognitive maintenance, with the
307 intensity and duration of therapy dependent on client needs, wishes, goals and progress.
308 The service was delivered wherever was most appropriate for the client and this
309 included, in the community, at the client’s homes, recreational areas (e.g. beaches),
310 shops and community meeting places.

311 During the review phase, the client’s goals and quality of life measures were
312 reviewed, and then the client would decide if they wanted to continue with the service
313 or be discharged. Clients were welcome to re-engage with the service at any time.

314 Group rehabilitation sessions, such as balance and mobility groups, were open groups,
315 allowing people without a formal rehabilitation plan to attend.

316 *Acting, Observing and Reflecting: Delivering the service, gathering, presenting*
317 *and discussing feedback.*

318 The student-assisted service was trialled for a six-month period between July and
319 November 2018. The successes and challenges of providing the student-assisted
320 community rehabilitation and lifestyle service three days/week were explored by the
321 stakeholder group. Dietetics, occupational therapy and social work students were
322 available to be involved, with the shortest placement being seven weeks. Using a
323 collaborative framework, the local allied health professionals coordinated their time to
324 provide interprofessional supervision to the service, relying on the Aboriginal and/or
325 Torres Strait Islander Health Workers to support home visits and the host organisations
326 to provide the environment for group and individual therapy for their clients and
327 residents.

328 Successes that were reported during stakeholder meetings included clients and
329 their families being very receptive to the service, reporting to the Aboriginal and/or
330 Torres Strait Islander Health Workers they enjoyed the students company and the
331 support they gave them. Allied health staff were of the opinion that the students were
332 offering a proactive approach to health and wellbeing and there was great potential with
333 the service model. Students reported feeling more confident in managing caseloads
334 independently and working in a culturally diverse environment.

335 Challenges reported in stakeholder meetings focused on for the need for more
336 adequate cultural and professional supervision of the students who were implementing
337 the service. Allied health staff were supervising the students as well as trying to manage
338 a full acute caseload at the local hospital as well as outreach services to neighbouring

339 communities. This was considered unfeasible by the allied health team if the service
340 was to be a continuous service (as requested by the community) without greater
341 resources. Likewise, the local primary health care clinics experienced a significant
342 reduction in their Aboriginal and/or Torres Strait Islander Health workforce during the
343 trial period, creating a challenge for the students and staff to continue to provide
344 services outside of the 'host' organisations (e.g. home visits). Although the Aboriginal
345 and/or Torres Strait Islander Health Workers were supportive of the service trial, it
346 increased their workload which raised obvious sustainability issues.

347 There was also challenges around the process for delivery of services. Initially, a
348 locally developed allied health comprehensive assessment was used, based on the WHO
349 International Classification for Functioning, Disability and Health (ICF) [52]
350 framework. Use of a resource that was based on the ICF was initially seen as important
351 for novice clinicians (e.g. students) to improve their comfort to lead discussions with
352 clients. Consistent with previous findings however, we found that the ICF had
353 considerable limitations in aiding clinicians to interpret the Indigenous context and the
354 impact of colonisation on the experience and understanding of disability. [53] Despite
355 the best intentions on how the assessment form should be used (flexibly) it quickly
356 became clear that its use led to a structured assessment process that only reinforced
357 perceptions of asymmetric power relations and did not support a culturally responsive
358 service.

359 ***Replanning: Identifying changes required to service model, planning for***
360 ***sustainability.***

361 After the initial service trial, the stakeholder group confirmed their commitment to
362 continue to develop a local service model. Informed by the challenges,
363 recommendations for changes to the service model were developed. These

364 recommendations included:

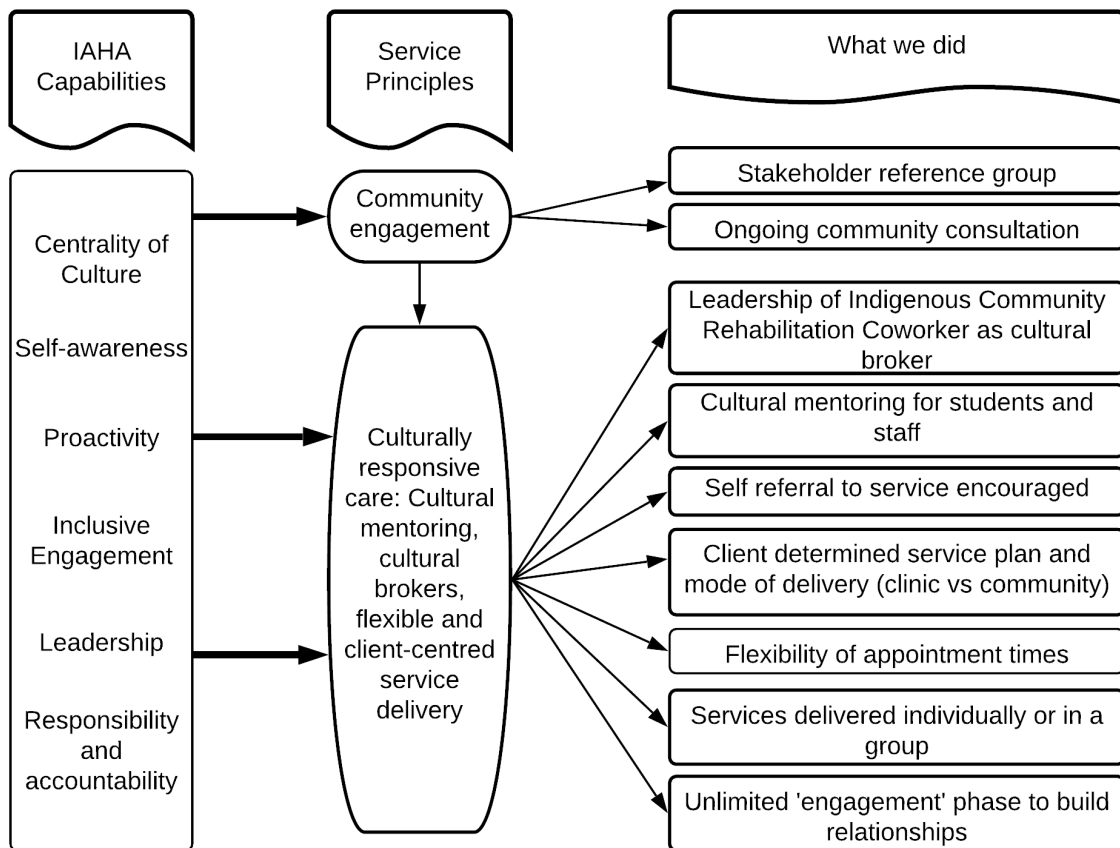
365 (1) Providing adequate clinical and cultural supervision.

366 (2) Adapting clinical processes to support culturally responsive care.

367 To provide adequate clinical and cultural supervision and support for the
368 service, the stakeholder group recommended the appointment of a dedicated allied
369 health rehabilitation supervisor, and a local Indigenous community rehabilitation co-
370 worker (assistant). The role of the allied health rehabilitation supervisor was to provide
371 overall management of service referrals and patient flow, supervision of students while
372 they were working in the community rehabilitation and lifestyle service, development of
373 clear documentation guidelines for students, facilitation of a weekly student multi-
374 disciplinary team meeting and interprofessional education (IPE) sessions. All students
375 also received discipline-specific supervision from local allied health staff. The role of
376 the Indigenous community rehabilitation co-worker was to support the process of
377 cultural brokerage for the students and allied health supervisor, formal weekly cultural
378 mentoring within the student multi-disciplinary team meetings and IPE sessions, and
379 informal cultural mentoring through role modelling communication styles, advising of
380 any community or family barriers to clients accessing the service. It was anticipated that
381 the Indigenous community rehabilitation co-worker would undertake a formal allied
382 health assistant certificate or similar education to allow greater delivery and supervision
383 of clinical practice as the service developed. Both of these positions were responsible
384 for the continuation of the clinical service in between student placement blocks. This
385 was to provide continuity of care for clients, families, other service providers and
386 community organisations.

387 Application for funding for the new positions and supporting infrastructure (eg.
 388 mobile phones, therapy consumables, and vehicle) were made to the local Primary
 389 Health Network (PHN) to improve sustainability of the service. Once the application for
 390 funding and recruitment to both positions was successful, the stakeholder group
 391 confirmed their commitment to the service and reinforced the importance of culturally
 392 responsive care, and flexible service delivery in the local community (Figure 2). The
 393 newly appointed allied health rehabilitation supervisor and Indigenous community
 394 rehabilitation co-worker undertook considerable consultation and planning to ensure
 395 these principles alongside community engagement were upheld.

396 **Figure 2: Application of IAHA Capabilities [45] to the service principles and**
 397 **service model.**



398

399

400 The adaption of clinical processes to support culturally responsive care focused
401 on promoting reciprocity between the students and the clients, their families and the
402 wider community. This included adapting student communication with clients to a
403 yarning approach and allowing for an extended client engagement phase. This approach
404 reframed the initial assessment phase to a story-telling communication style where
405 allied health professionals and students have equal responsibility to share stories about
406 themselves and the service to build reciprocity within the relationship. Orientation of
407 new students to the model was redesigned to focus on students developing their own
408 stories and introduction to yarning. All three key elements of clinical yarning (social,
409 diagnostic and management) [25, 54] were incorporated into this new process, aimed to
410 build a trusting therapeutic relationship, explore client priorities for their therapy,
411 identify students skills and knowledge that might be beneficial, and develop a
412 collaborative, shared plan.

413 Honouring the philosophy of holistic and collective wellbeing, meant the service
414 had to expand to incorporate a community wide approach. Consistent with the IAHA
415 cultural responsiveness framework this involved members of the stakeholder reference
416 group conducting multiple informal community meetings to discuss priorities for the
417 community, and to identify barriers and facilitators for people experiencing frail age
418 and/or disability participating in community activities. From this broad consultation,
419 key community organisations worked with the community rehabilitation service to
420 identify ways people with disability could engage with their service and ways the
421 community organisations could support healthy aging. The process for each
422 organisation was different depending on the organisation, the activities they undertook,
423 and the needs of the clients or families.

424 **Discussion**

425 Rehabilitation is a fundamental health intervention for people living with conditions that
426 are associated with disability. [3] There is considerable literature highlighting the need
427 for innovative models of care for rehabilitation and disability services for remote
428 communities in developed countries like Australia, where maldistribution of the health
429 workforce and inadequate allied health service models for remote communities, create
430 service inequity. [5, 6, 20, 24] While the complexity of providing responsive and
431 timely health care to diverse, remote and sparsely populated regions of Australia has
432 resulted in various models of service, there is limited documented evidence to support
433 the impact of these services on the health and wellbeing of the clients and their families.
434 [20, 24] Clearly, there is an undeniable need for evidence-informed, culturally safe
435 rehabilitation services for remote communities. [24, 35, 55] Hence, this paper details the
436 first cycle of an action-research process, for the development and evaluation of a
437 community rehabilitation and lifestyle service in two remote communities in northern
438 Australia.

439 The co-design of the service that is the subject of this paper emerged from an
440 amalgamation of learnings from a range of sources (community consultation,
441 government policy, scientific literature, local Indigenous knowledge, IAHA framework
442 and student-assisted services) to develop a unique and culturally responsive service for
443 the communities for which it has been designed. What emerged from the co-design
444 community development process was the centrality of cultural responsiveness, with the
445 Aboriginal view of health at the heart. This centrality of culture sits above any other
446 professional ideology or evidence base. To achieve this, all six areas of the IAHA
447 framework [45] were incorporated into the service design (Figure 2). In addition,
448 through continuous informal consultation, the inclusivity of the community in the initial

449 design, reflection and redesign of the service was prioritized, elements are identified in
450 competencies developed for CR practitioners [56]. This process was possible due to the
451 stakeholder group living and working in the communities concerned, being able to
452 connect with community members regularly about their experiences. Changes resulting
453 from the service trial also led to further embedding of all elements of the IAHA
454 framework [45] (brackets denote the main connection to the framework): yarning and
455 reciprocity in relationships (respect for centrality of cultures); community-wide service
456 philosophy and provision (inclusive engagement); and the employment of an
457 Indigenous community rehabilitation co-worker as a cultural mentor and broker
458 (leadership and self-awareness). This is unique in allied health (and most mainstream
459 remote health services) where cultural safety is often an afterthought to the design or
460 delivery of a service. [35]

461 The co-design process in this instance enabled the allied health professionals
462 and students to reframe clinical processes (such as the initial assessment phase), to
463 challenge the privileged discourse of the allied health professionals and students.[57]
464 This introduced an Indigenous standpoint on disability [53] into the daily discourse of
465 how, when and why a primarily Western-model for a community rehabilitation service
466 could support inclusivity, and improve outcomes for Indigenous people experiencing
467 disability. The importance of yarning and the equal responsibility of two parties (student
468 or allied health professional and client and family) to share stories about themselves and
469 the service to demonstrate reciprocity within the relationship is considered essential in
470 the provision of culturally responsive health care and other community-organisation
471 partnerships.[32, 54, 58] Sharing knowledge (*sharing together*) and developing mutual
472 understanding is imperative to building strengths-based approaches to what living a
473 good life means.[59] This requires much greater time with clients and their families

474 than typically afforded to allied health professionals working in remote communities.
475 [60] This co-design process took two years, much longer than most project or research
476 funding allows and short-term funding initiatives do not usually support the time
477 required for this work. Considerable in-kind funding was provided in time and resources
478 to develop the relationships needed to initiate and progress this genuine co-designed
479 service. It is not difficult to anticipate the challenge this raises for the development and
480 ongoing funding of a service such as this one.

481 Through an action research process, the innovative student-assisted allied health
482 service design that has been generated has been supported with funding for a two year
483 period. This funding will enable appropriate clinical and cultural supervision and
484 continuity of service provision. Formal discipline-specific supervision, clinical and
485 cultural mentorship and support as well as community and ‘host organisation’ support
486 have all been recognised as essential to developing student services. [61, 62] Funding
487 beyond the two year period will be dependent on a fit-for-purpose evaluation that is able
488 to demonstrate the value of the service to the community, the students and to the
489 funding bodies.

490 The unique evolution of this service poses a significant challenge. The collective
491 and holistic approach taken to design and delivery of disability services stands in
492 contrast to the NDIS, the individualized funding approach taken by the Australian
493 Government and the primary funding source for remote disability and rehabilitation
494 services.[63] Maintaining the philosophy of the service and the intentions of community
495 capacity building, while ensuring Indigenous people can access and benefit from current
496 funding structures such as the NDIS, will challenge local health services and funding
497 bodies to consider their responsibility to support communities to determine the services
498 that best fit their needs. [6]

499 **Conclusion**

500 The development of community rehabilitation service models that are feasible in remote
501 communities is complex, particularly in Indigenous remote communities where cultural
502 safety is essential. This work requires a flexible approach to support a continuous cycle
503 of trialing ideas to gain consensus on what works for the community, the clients, their
504 families and the health services and other agencies that support them. This service,
505 based on the co-design described in this paper is currently being implemented and
506 evaluated under the next action research cycle.

507

508 Terminology

509 The term ‘Indigenous people’ is used, respectfully, in places in this paper to refer to the
510 Aboriginal and Torres Strait Islander peoples or First Nations people of Australia.

511

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725

726 **Figure 1: Procedure and action-research steps described in this project.**

727 **Figure 2: Application of IAHA Capabilities [45] to the service principles and**
728 **service model.**

