Received: 10 March 2021 | Revised: 1 July 2021 | Accepted: 12 August 2021

DOI: 10.1111/ajr.12796

ORIGINAL RESEARCH

AJRH National Rural Health Alliance WILEY

Collaborative care: Primary health workforce and service delivery in Western New South Wales—A case study

Robyn Ramsden PhD[1] | Sarah Davies MPH[1] | Richard Colbran BA Human Movement[1] | Amelia Haigh B Int Studies(Hons)[2] | Meegan Connors Masters of Health Service Management[2] | Shannon Nott MPH[2] | Estrella Lowe PhD[1] | Michael Edwards BSC[1] | Richard Clegg[3] | Sharif Bagnulo MBA[1] | Sabrina Pit PhD[1]

[1]NSW Rural Doctors Network, Newcastle, NSW, Australia

[2]Western Local Health District, Dubbo, NSW, Australia

[3]Tottenham Doctors Support Group, Tottenham Health Advisory Council – WNSW LHD, Dubbo, NSW, Australia

Correspondence
Robyn Ramsden, NSW Rural Doctors Network, Newcastle, NSW, Australia.
Email: rramsden@nswrdn.com.au

Funding information
Australia Government Department of Health

Abstract

Objective: To explore how four small towns in rural New South Wales known as the 4Ts are addressing challenges accessing quality care and sustainable health services through a collaborative approach to workforce planning using the collaborative care framework.

Design: Descriptive case study approach.

Setting: The collaborative care project was developed as a result of ongoing partnerships between 2 rural Local Health Districts, 2 Primary Health Networks and a non-governmental health workforce organisation. The collaboration works with 5 subregions each comprising 2 or more rural communities. This paper focuses on the 4Ts subregion.

Participants: Stakeholders of the collaborative design including organisations and the community.

Intervention: A place-based approach to co-designing health services with community in one sub-region of Western New South Wales.

Main outcome measures: A synthesis of field observations and experiences of community and jurisdictional partners in implementation of the 4Ts subregional model. Mapping of implementation processes against the collaborative care framework.

Results: The collaborative care framework is a useful planning and community engagement tool to build health workforce literacy and to impact on system change at the local level. We identify key elements of effectiveness in establishing the 4Ts model, including the need for coordinated health system planning, better integrating existing resources to deliver services, community engagement, building health workforce literacy and town-based planning.

Conclusion: This study adds to the body of knowledge about how to successfully develop a collaborative primary health care workforce model in practice. The findings demonstrate that the implementation of a collaborative primary health

care workforce model using the collaborative care framework can improve service access and quality, which in turn might facilitate workforce sustainability.

KEYWORDS

collaborative models of care, community-based development, rural, rural health workforce framework, rural primary health care

1 | INTRODUCTION

Lack of access to quality health care providers is one of the primary root causes of health inequity globally and is disproportionately experienced by people living in remote and rural communities.[1] Policy-makers face significant problems in ensuring equitable access to sustainable primary health care (PHC) services in rural and remote areas, including the lack of locally available services, insufficient workforce, inadequate infrastructure, high costs and long distances.[2] The problem of how to provide accessible, sustainable, and appropriate PHC services is most acute in small rural and remote communities, where the increased costs and difficulties of workforce recruitment and retention are compounded by the lack of economies of scale associated with servicing small populations dispersed over vast distances.[3]

1.1 | Need for new health workforce models

A simple but universal truth is that there can be no health without a workforce.[4] The health workforce can be defined as 'all people engaged in actions whose primary intent is to enhance health.'[5p4] While it is acknowledged in the evidence that there are multiple innovative primary care solutions to rural health workforce challenges,[6] definitions of a health workforce model are scarce and little evidence exists to detail how these have been successfully implemented in practice to meet the health requirements of small rural communities.[5] In this paper, we define a health workforce model as a proactive and creative solution to attract, develop and retain the skills, capabilities and talent needed to deliver services.[7] Workforce models include many elements, which are tailored to the needs of each community with a strong focus on diversity and inclusion.[7] A workforce model might involve service redesign,[8] optimising employment models and models of technology-enhanced practice, promoting cross-government and cross-sector collaboration,[7] training aligned to need to enable the right skills at the right time,[9] extending scope of practice[6] and flexible resourcing.[8]

What is already known on this subject:

- Rural health workforce models should be designed to:
  a. Enable provision of health care and continuity of patient care
  b. Be sustainable
  c. Attract and retain health professionals
- Not all rural communities have the same health service delivery profile
- Alternative models of health workforce service provision are required in some rural areas to suit local contexts
- Health workforce development is inextricably linked to workforce recruitment and retention
- The workforce must have a critical mass to ensure sustainability and retention

What this study adds:

- It is important that rural communities are partners in health service model design
- The collaborative care approach to improving primary health care workforce demonstrates that a community-based development approach must be married with service expertise to achieve quality sustainable health care services in rural and remote New South Wales
- Strengthening health workforce literacy builds community and sector capability to participate in a community-based development approach to modifying or designing a new workforce model for that community
- A community-based development framework integrates a health workforce planning framework developed by a range of western New South Wales stakeholders with a view to using it more broadly
- While workforce is one part of the solution, workforce alone will not make a model that meets the community's needs

Health workforce is a critical component of well-functioning models of care; therefore, workforce planning must be underpinned by an understanding of the context and systems in which that workforce operate.[6] As Davidson et al[8] suggest models of care are often historically based and subsequently not responsive to the changing needs of contemporary health systems. There is little evidence about how to develop successful collaborative PHC workforce models,[10] and much of the existing literature on workforce redesign is based on a single setting, profession or type of role.[11] The challenges associated with recruitment and retention of rural health professionals are enduring, and it has become increasingly clear that no one model of engaging health professionals will be successful in all contexts. Instead, there needs to be a variety of models that can be tailored to suit the community and the health professionals.

1.2 | Theories of health workforce change

There is a dearth of theory relating specifically to health workforce change initiatives.[11] Nancarrow et al[11] describe learnings from pilot sites of large-scale workforce changes implemented in Australia, some of which implemented allied health workforce models. The drivers of the successful outcomes of workforce pilots included full engagement at all levels of the change process, local engagement and ownership, workforce models appropriate for the context, bottom-up drivers with top-down support, clearly defined roles and legislative scaffolding. Humphreys et al[3] state that successful models are characterised by macro-scale environmental enablers (supportive health policy, federal-state relations and community readiness) and 5 essential service requirements (workforce organisation and supply; funding; governance, management and leadership; linkages; and infrastructure). Segal et al,[12] and Segal and Leach[13] focus on a needs-based approach that reflects the complexity of the community, and clinical population is the only evidence-based approach to health workforce planning.[9,14] The authors highlighted a number of key drivers in health workforce change including the importance of a practice environment that is responsive to change, a service system consistent with the delivery of best practice care, adequate health funding, understanding of a community's health needs and strong clinical leadership and governance.[9,14]

Veitch and Battye[15,p114] suggest that as well as movement away from 'the shrunken urban model' towards more sustainable rural workforce models that match the needs of rural communities, community involvement in service planning has also increased. In this paper, we propose that in addition to understanding the health needs of each subregion, a rural health service model benefits from direct participation by the local people. This provides a way of facilitating attainment of the change and ensures a greater understanding of the reason for the model, which increases the potential to sustain it. Therefore, there is a strong role for community-based development (CBD) in emerging workforce models. While there are some theoretical examples of rural health workforce models or frameworks involving community,[9,12,13] there are few peer-reviewed articles exploring practical examples of how to develop workforce models to address rural workforce shortage or maldistribution using a CBD approach.[16,17] This paper addresses this gap by delineating a CBD approach to improving health workforce provision in a hard-to-resource rural setting.

1.3 | Community-based development (CBD) approach

Community-based development is an approach to implementing local development projects that advocates for community participation in decision-making and management and using local knowledge and resources to run more effective projects.[14] Community participation is widely believed to be beneficial to the development, implementation and evaluation of health services.[18] The final goal of CBD is empowering communities and improving the quality of their lives. But it is impossible to achieve this goal without participation and involvement of the community in particular projects.[19] CBD takes place when people are empowered with knowledge and the means to decide their own priorities, improve their capacities and address their own problems.[20,21]

A consideration for CBD initiatives is that in order for communities to act, they must have the capacity to do so.[22] Baldwin et al[14] note that CBD contributes to a communities' capacity to act and their well-being by increasing resources directed to programs that are important to the community and might improve efficiency of expenditures. This consists of the human, physical, financial and social resources available to a given community that can be mobilised to meet local needs.[22] Specifically, in a CBD approach these resources can foster leadership skills and community engagement at the local level, increase social networks and trust and expose citizens to the political process.[22] The authors of this paper believe that a fourth pathway to building community capacity to address health workforce needs is through fostering health workforce literacy. Rural Doctors Network (RDN) proposes improving literacy about health workforce in the community will support the development and acceptance of innovative

solutions to health workforce crises such as new models of care.[23] This is different to health literacy, which is typically presented as: 'the personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health.'[24] The information and actions in health workforce literacy are not about a particular health condition but instead aim to improve knowledge about the health needs of the rural community, options for addressing these needs, and how to work proactively with government, key health workforce agencies and other necessary, interacting groups to recruit a new health professional into a role that is appropriate and sustainable. This gives community members the tools to be involved in the health workforce and health system support decisions that affect them, including understanding the type of health workforce that is needed to best suit their needs.

1.4 | Bringing the collaborative care framework together (Appendix 1)

The collaborative care project was developed as a result of ongoing partnerships between western New South Wales (NSW), Far Western NSW and Murrumbidgee Local Health Districts (LHDs), Western NSW and Murrumbidgee Primary Health Networks (PHNs) and NSW RDN. While the challenges to partnership working are substantial, the benefits of collaboration can also be considerable.[25,26] The collaborative care project draws on the experiences of small rural communities such as those described in the 4Ts project and from RDN's 30 plus years of experience working with rural and remote communities to undertake town-based health workforce planning and health access service design. The collaborative care framework (Appendix 1) is an emerging framework to be applied and tested as part of this project. It grew out of a need to bring together and document some of the workforce planning processes already developed and used by the collaboration. It has input from all of the partner organisations based on their experience in the field.

1.5 | Town-based planning for health—method

Town-based planning is an approach grounded in CBD principles and used by RDN for many years. This is an extension of the Easy Entry, Gracious Exit model RDN created in the 1990s, which has proven to be effective in attracting and retaining doctors.[27] The approach concentrated on the continuity of the service rather than the continuity of the doctor.

Town-based planning recognises that workforce problems, and the resources available to deal with them, vary from time to time and community to community. This means that solutions need to be crafted to respond to the realities of each town at a particular time. It involves facilitating town- or region-level PHC workforce consultations, aggregating local data to provide a solid evidence base for conversations and problem-solving, and employing a strong approach to collaboration that engages stakeholders.

1.6 | The western NSW primary health workforce planning framework

An additional element to the collaborative care framework draws on work undertaken with a wide range of stakeholders in western NSW to consider broadly the factors that contribute to attracting and retaining primary health workforce in rural areas.[25] The western NSW primary health workforce planning framework identifies 6 priority action areas that highlight that sustainable workforce solutions require broader consideration than a focus on recruitment alone. It also relies on attention to factors that influence retention and the partnerships and coordination which when well-functioning will positively influence sustainable improvements. Enablers and quality improvement measures were also identified as core elements of the framework. It is useful as a tool to engage stakeholders in discussion about effective strategies in the rural context and to ensure that actions are sustainable and linked to an overall direction.

1.7 | Introduction to the 4Ts

The 5 subregions included in the collaborative care project face challenges in PHC service access and sustainability and are testing models to support health workforce and health service delivery. The 4Ts is one of 5 subregions being supported as part of the project comprising four small rural and remote communities Tottenham, Trundle, Tullamore and Trangie in western NSW. The area covered by the western NSW LHD is one of the largest in NSW covering 246 676 km^2, serving approximately 276 000 people and containing some of the most vulnerable population in NSW and Australia.

The 4Ts subregion was selected due to a market failure leaving a gap in PHC services with flow-on effects to acute care provision. Communities sought easy access to quality PHC services including general practitioners (GPs), allied health, emergency care and pharmaceuticals and felt a full-time GP in their own town was central to addressing their health needs. With none of the four towns able to sustain a

full-time GP, this single vision of how PHC services could be delivered was a barrier. Other barriers included the fact that 2 of the towns were too small to sustain a pharmacy and there was initial community scepticism of the LHD.

Each of these four towns has a multipurpose service (MPS) with GP clinic space, an emergency department, limited acute care beds and residential aged care. The medical services for these LHD facilities have traditionally been provided by local GPs in private practice who have visiting medical officer (VMO)[1] rights to the MPS. Informed by health needs data, the western NSW LHD has led the project since mid-2017, using a place-based approach to co-design services with community with coordination across providers, disciplines and sectors. The resulting model was a combination of community consultation and collaboration. Ideas were tested with the community, but as well community representatives collaborated by giving iterative feedback and suggestions as different activities were implemented that supported the model.

1.8 | The purpose of the paper

The aim of this paper was to report on the findings from recent work in the 4Ts subregion in relation to implementing the collaborative care framework to inform future implementation and scaling.

2 | METHODS

This paper uses a case study approach. Case study research is appropriate when exploring questions that require a detailed understanding of social or organisational process,[28] or studies that seek to answer a 'how' or 'why' question.[29] It is an illustrative case study bounded by activity over time, within a specific context.[30] The research aimed to illuminate and examine the implementation of processes was not evaluative and did not seek to identify the impact or outcomes of a CBD approach to building a health workforce model. It is designed to understand the implementation processes.

The epistemological orientation adopted was a pragmatic constructivist approach. Like Yin,[29] Merriam[30] asserts that when information is plentiful and concepts are abstract, it is important to use processes that help interpret, sort and manage information and that adapt findings to convey clarity and applicability to the results. In this way, the authors brought a pragmatic approach to constructivist inquiry. The researchers explored and understood participants' perceptions and interpretations, and as a result, a subjective and interpretive orientation flowed throughout the inquiry.[31] This reality was constructed through meanings, understandings and interpretations developed socially and experientially.[30] The aim was to provide a rich holistic description to derive knowledge,[30]about the implementation of a health workforce model.

The paper synthesises field observations, which occurred as part of more than 30 visits and meetings in the four communities to engage and capture feedback from staff and community partners supporting the implementation of the 4Ts model between June 2018 and June 2020. This engagement occurred via a series of open-invitation public meetings, community group meetings (including one Local Doctor Support Group), Local Health Advisory Committees and also workforce interviews. Over 29 written communication assets were provided to wider community members, local government officials and Local Health Advisory Councils for feedback in the form of community newsletters and flyers, email progress updates and project reports. The health needs assessment was also conducted within this time frame using data on community health outcomes, service activity and patient experience across primary and acute care in these communities: a mixture of quantitative desk-based data and community feedback. This desk-based analysis was then presented back to communities in four open-invitation community meetings in December 2019 for feedback, review, validation and identification of gaps. Implementation processes are mapped against the collaborative care framework, which brings together the key steps in CBD, the western NSW primary health workforce planning framework and town-based planning processes.

2.1 | Ethics approval

The paper does not report original data, and therefore, ethics approval was not required.

3 | FINDINGS

The lack of access to GPs in the 4Ts towns and its implications for the LHD in staffing VMO positions precipitated the design and testing of a single-employer model whereby the LHD became involved in the provision of PHC workforce and services. Early recognition of the need to engage the community in the process of workforce model development and testing meant that project planning and implementation aligned with a CBD approach. At the same time, it was acknowledged that the complexities of navigating the health system and funding related to health

[1]A visiting medical officer is a medical practitioner in private practice who also provides medical services in a public hospital.

care service provision meant that expertise was needed to enable informed decision-making by the community in model development, as well as iterative implementation.

An operational working group and a group of subject-matter experts were bought together at the commencement of the project, which included staff from the western NSW LHD, the western NSW PHN and RDN and community and workforce representatives. Executive support was also achieved through establishment of a collaborative governance committee, which enabled resources to be committed for implementation and key issues to be resolved. RDN's experience in town-based planning for GP workforce, an approach based on community development principles, assisted in informing project implementation. As a result of this collaboration, an emerging collaborative care framework was developed, which can be further tested and applied in other rural communities. The 4Ts case study is described below through the lens of this framework highlighting critical characteristics, key activities and important factors for success at each step.

3.1 | Assessment/Needs

The first area under the collaborative care framework is identifying issues with health workforce or health service delivery that are impacting a community. The western NSW LHD was aware of workforce issues in the 4Ts subregion, and RDN had been working in this region for many years. However, when private general practice services closed or left town in all four communities, gaps in primary care were identified in private practice GP services, allied health and pharmacy services. The communities identified challenges in readily accessing quality PHC and felt a full-time GP in each separate community would be central to addressing health needs. LHDs are usually not involved in general practice service provision, and no model existed as a basis for the western NSW LHD to design, implement and fund a single-employer LHD-based GP model. Leadership and commitment from the LHD to support the investment of resources into a new and untested way of working were found to be crucial. Further, it became clear that a new workforce model would not be successful without building relationships and exchanging information with the community to reach a common understanding about the shortfalls of the existing model and agreement about the potential solutions.

3.2 | Engagement/Goals

The second area of the framework involves work to engage stakeholders, test the initial information collected on issues and develop a common understanding of needs, context and objectives. Early relationships were fostered in this subregion by members of the western NSW LHD in an effort to understand the issues and build trust and visibility. Central to success was that community members were engaged in regular communication. Engagement with communities occurred to build health workforce literacy including an understanding of service delivery implications and constraints. This enabled the communities to assess options and make an informed decision to support a joint approach to address their common challenge of primary care market failure. Involvement in decision-making was measured by participation of community members in regular forums and meetings and translation of decisions into implementation by the project team. Employment of a dedicated project manager and strong partnerships with RDN and the PHN were central to facilitating engagement with a wide range of local stakeholders. As a result of this engagement, the western NSW LHD accepted the request from participating community groups and Local Health Advisory Councils to provide primary care services and test a single-employer model with opportunities to partner for additional services. Agreement on project objectives and time frames was achieved, commencing with a 2-year pilot and 3 part-time GP roles to be shared across the communities. Involvement in decision-making was measured by participation of community members in regular forums and meetings and translation of decisions into implementation by the project team. None of this could have been achieved without the investment of time and resources in consultation and communication from the project team and members of the community. Trust in the collaboration led to the establishment of a joint health council committee across the four towns in the second year of the project.

3.3 | Connect and empower/Planning

The third area of the framework involves detailed planning fostering collaboration to investigate options and potential contributions from the different stakeholders. Collaborative regional governance was established at this stage through the project governance committee, project working group and subject-matter expert working parties to strengthen coordination of traditionally private and public systems. Feedback and user testing was sought from community stakeholders including Local Health Advisory Councils and local government officials. In-kind co-contributions were also secured from project partners (through expertise and workforce), local government (through an infrastructure grant) and community groups (through rental accommodation provision for medical

staff). It was important to maintain services during this stage to ensure continuity in community access to services using locum medical staff until a more regular workforce could be recruited and retained. An agile project management approach was decided upon as the model was new and untested and progression would be iterative. Good leadership and governance were found to be critical throughout this stage to facilitate collaboration and to aid service planning and design.

3.4 | Deliver/Implementation

The fourth area of the framework involves implementing plans, allocating roles and responsibilities for activities and working together to adapt as ideas are tested and feedback received. Through the collaborative and iterative approach, different initiatives were successful in supporting the model across the four towns. This included employment of a practice manager and practice staff and developing non-standard integrated primary care nurse roles with an aim to have staff who could work across general practice and MPS, facilitating workforce agility and reduction in duplication of effort. The versatility of staff in these roles has been essential to the functioning of the model. There was also change to the subregional management structure of the MPS so that a single health service manager oversees 3 of them.

To find sustainable workforce solutions in the 4Ts, concepts and ideas were tested including telehealth support for occasions when doctors could not be on site. Further, 19 (2) exemptions[2] were obtained to allow sites to claim against the Medicare Benefits Scheme. Experts in primary care provided advice on key areas of activity that had been identified such as systems to standardise practice management, and incremental improvements in practice operations were implemented to prepare for the Royal Australian College of General Practice Accreditation. Other operational milestones included implementation of models of service integration and contracts for GPs and general practice support staff. The agile and responsive approach has provided the opportunity to demonstrate small 'wins,' which has helped to build confidence and trust among the working group and the wider community. However, change of this nature takes time. Strategic milestones include a whole-of-government approach to scope out potential new models of funding and explore non-standard employment approaches. A new recruitment package for doctors and a marketing strategy tailored to the locations are currently in development. Strong leadership and good governance structures are central to these innovations. As with findings in the planning stage, strong leadership and governance were also central to delivering these innovations in the implementation stage.

[2]Section 19(2) Health Insurance Act 1973 (the Act) prohibits the payment of Medicare benefits where other government funding is provided for that service.

3.5 | Reflect and learn/Maintenance

During the final stage of the framework, progress is evaluated, positive change is promoted, and longer-term sustainability is planned for. Work in the 4Ts is currently ongoing in this stage. There are still a wide range of factors and many areas of activity to consider if solutions are to be long-lasting. The establishment and strengthening of PHC services across the 4 towns has laid the foundation for continued collaboration to improve financial and operational sustainability with support from the collaborative care program. A key finding at this point in the 4Ts project is that investment in key operational resources to support stakeholder engagement and change management, implementation and the integration of public and private PHC models is critical to building viability. There is opportunity to review available funding models in small rural communities, to broaden the scope and recognition of the work primary care practice nurses do to support improvement in health outcomes and access to care, and to further evaluate the project impact over time. Sustainability of the 4Ts model is yet to be realised.

4 | DISCUSSION

The case study describes experiences of PHC provision in the 4Ts project through the lens of the collaborative care framework. This framework blends the principles of CBD with RDN's town planning approach and the western NSW primary health workforce planning framework. The town-based planning approach provides a method for implementing the CBD principles to the subregional needs and circumstances, and the western NSW primary health workforce planning framework identifies key areas of action. This presents a new and effective way of approaching health workforce planning. The performance of the framework was assessed in terms of capacity for implementation. However, there are certain learnings from operationalising the model that can be applied more broadly.

Firstly, when working on the issue of primary health workforce and service provision for a community, there are a wide range of factors to consider and potential areas of activity if solutions are to be long-lasting and provide

more than a short-term response to an immediate need. Implementing and securing acceptance of new solutions is difficult unless community is involved in making decisions.[13] Central to this approach is an emphasis on building relationships to effectively engage community members and service providers to reach a common understanding of priority issues and to work collaboratively on solutions. As Davidson et al[8] point out, models of care have often developed to bridge service delivery gaps rather than as a planned strategic response to an identified local need.[32] Without engaging the community in workforce planning to address need, we found that workforce and service sustainability could not begin to be realised.

Secondly, the evidence for good leadership and governance to support a community-based approach is strong. Effective change leaders can enable broad communication of the work to mitigate barriers and secure buy-in.[33] In fact, heterogeneous organisational behaviour undermines the effectiveness of collaboration.[34] In the 4Ts case study, strong leadership provided by the western NSW LHD ensured that community stakeholders remained engaged over time and continued to build capability to manage and mitigate challenges. Collaborative governance arrangements were introduced at the operational, tactical and strategic levels to ensure all voices, including government, other partnership agencies and community had an opportunity to contribute. The governance structure is underpinned at each level by information sharing, collaboration and agreement on the goals of the model, service planning and design using local data and service monitoring and evaluation. This aligns with evidence that successful collaborative governance structures should be focused on providing opportunities to debate solutions to local problems, articulate and resolve tensions between sectors and develop trust between members through honesty, respect and reflection on power imbalances.[35]

Thirdly, having community as co-drivers of the locally identified and owned new workforce model of care in a rural community was a critical factor. Braithwaite[10] notes that acceptance of decisions comes when people are involved in the decisions and activities that affect them, but they resist when change is imposed by others. Further, Reeve et al[16] suggest the critical factor enabling health service change is the alignment of a strong local community and health service vision with the goals underpinning state and Commonwealth government health policies. In the 4Ts, little could be achieved without the joint commitment from government, relevant health service and workforce organisations and community. This supports Reeve et al,[16] who suggest the critical factor enabling health service change is the alignment of a strong local community and health service vision with the goals underpinning state and Commonwealth government health policies. This required considerable early work with community to develop health workforce literacy to ensure understanding of system constraints and opportunities at state and federal levels. This is important because health systems function to either support or disincentivise the recruitment and retention of health professionals. Health workforce literacy is a process through which individuals and communities become aware of issues and inequities, participate in critical dialogue and become involved in decision-making and action for health.[36] It created a level-playing field for engagement, debate and ownership of the new model of care. We argue that health workforce literacy shows an affinity with the goals and processes of community development. Health workforce literacy requires a cognitive skillset that exists at the community level and that is oriented towards social and political action on workforce factors and understanding affecting health in a community. This has important implications for effective ways of working towards change in rural communities and supports the use of a CBD approach that fosters collaboration and engagement.

Finally, the 4Ts case study gives us insights into the potential for replicability, scalability and sustainability of this approach. Those involved in supporting the 4Ts implementation feel that it is scalable if resourced and well supported. The collaborative care framework enables the model to be replicated in other communities or subregions by providing principles and processes for guiding action. Modifications can be made to suit the specific community needs. There is flexibility to work within the guiding steps. This is important as Braithwaite[10] points out that 'one-size-fits-all' templates of change, represented by standardisation and generic strategies, too often fail when applied elsewhere due to the fact that meaningful improvement is centred on local and natural networks. The 4Ts model is in its second year; however, sustainability is not yet guaranteed. It is considered to be dependent on the funding model and ability to optimise revenue streams within current constraints including limitations of 19.2 items. However, some aspects of the approach are linked to sustainability such as being community driven with top-down support to underpin change, engagement, building trust derived from genuine collaboration, reduced duplication of effort across communities, the reconciliation of divergent goals and a search for mutual value.[37] While there is a recognised gap in the peer-reviewed

literature about how to co-design and collaborate well,[17] this approach has helped to achieve sustainable social impact.[38]

4.1 | Limitations/further research

The use of an illustrative case study has offered the opportunity to examine in detail the processes used in developing each of the characteristics of the CBD approach. While Ebneyamini et al[39] suggest the case study is one of the most powerful methods used by researchers to realise both practical and theoretical aims, other researchers suggest that a case study approach has limitations. It can be difficult to replicate,[40] and hence is not generalisable,[41] and the volume of data can impact on the depth of analysis.[39,40] Using multiple sources of data in a case study,[29] including observation and interview or using multiple case studies enables the research to explore differences within and between cases.[42]

A major limitation is that this project is still in progress and the outcomes of the model and community satisfaction with services in the longer term are not known. Over time, we might demonstrate the effectiveness of the collaborative care framework in guiding health workforce change. While the framework was very useful in guiding the necessary steps and processes with the 4Ts community, it is still to be tested with other communities or subregions. The tools for monitoring and evaluating impact beyond process measures are still in development, which will inform our understanding of what has been effective and guide further developments.

5 | CONCLUSION

The implementation of a new model of care is a complex process, and broad principles of change management apply. The 4Ts case study used a CBD framework to engage community in building appropriate and accessible PHC in communities seeking to address health service gaps in line with local needs. Understanding how this innovative PHC workforce model suited to the local context evolved, and the factors instrumental in bringing it about, provided important insights into the requirements for effective health service change and sustainability for other small, rural communities. The findings demonstrate that a collaborative PHC workforce model might improve service access and quality, which in turn might facilitate workforce sustainability and enable broader application in the future.

ACKNOWLEDGEMENTS

The 4Ts project was funded by NSW Health, and collaborative care project was funded by the Australian Government Department of Health.

CONFLICT OF INTEREST

There is no conflict of interest.

AUTHOR CONTRIBUTIONS

RR: Writing—original draft; conceptualisation. SD: Writing—original draft; conceptualisation of framework. RC: Conceptualisation; creation of collaborative care models; review and editing. MC: Conceptualisation; responsibility for execution of the model; review and editing. SN: Conceptualisation and creation of 4Ts model; design of methodology. EL: Conceptualisation; review and editing. ME: Review and editing. AH: Responsibility for execution of the model; review and editing. RC: Review and editing. SB: Review and editing. SP: Review and editing.

ORCID

Robyn Ramsden https://orcid.org/0000-0002-0418-9280

REFERENCES

1. World Health Organization. Closing the gap in a generation: health equity through action on the social determinants of health. Geneva: WHO; 2010. http://www.who.int/social_determinants/thecommission/finalreport/en/index.html. Accessed January 5, 2021.
2. Bywood P, Katterl R, Lunnay B. Disparities in primary health care utilisation: Who are the disadvantaged groups? How are they disadvantaged? What interventions work? *PHC RIS Policy Issue Review*. Adelaide: Primary Health Care Research & Information Service; 2011:1-138.
3. Wakerman J, Humphreys J, Wells R, Kunipers P, Entwistle P, Jones J. Primary health care delivery models in rural and remote Australia – a systematic review. *BMC Health Serv Res*. 2008;8:276.
4. Campbell J, Dussault G, Buchan J, Pozo-Martin F, Guerra-Arias M, Leone C, Siyam A & Cometto G. A Universal Truth: No Health without a Workforce. Forum Report, Third Global Forum on Human Resources for Health, Recife, Brazil. Geneva, Global Health Workforce Alliance and World Health Organization; 2013.
5. World Health Organization. The world health report 2006 – working together for health. Geneva: WHO; 2006. http://www.who.int/whr/2006/en/index.html. Accessed 12 June 2021.
6. Segal L, Leach MJ. An evidence-based health workforce model for primary and community care. *Implement Sci*. 2011;6(1):93.
7. Hamer B, Guilfoyle C. Health Matters 2019 - Planning for the healthcare workforce of the future; 2019. https://www.pwc.com.au/health/health-matters/workforce-healthcare.html. Accessed June 15, 2021
8. Davidson P, Halcomb E, Hickman L, Phillips J, Graham B. Beyond the rhetoric: what do we mean by a 'model of care'? *Aust J Adv Nurs*. 2006;23(3):47-55.

9. Birch S, Kephart G, Murphy GT, O'Brien-Pallas L, Alder R, MacKenzie A. Health human resources planning and the production of health: development of an extended analytical framework for needs-based health human resources planning. *J Public Health Manage Pract*. 2009;15:S56-S61.
10. Braithwaite J. Changing how we think about healthcare improvement. *BMJ*. 2018;361:k2014.
11. Nancarrow S, Roots A, Grace S, Moran A, Vanniekert-Lyons K. Implementing large-scale workforce change: learning from 55 pilot sites of allied health workforce redesign in Queensland, Australia. *Hum Resour Health*. 2013;11:66.
12. Segal L, Dalziel K, Bolton T. A workforce model to support the adoption of best practice care in chronic diseases - a missing piece in clinical guidelines implementation. *Implement Sci*. 2008;3(1):35.
13. Segel L, Leach M. An evidence-based health workforce model for primary and community care. *Implement Sci*. 2011;6(93):1-8.
14. Baldwin K, Karlan D, Udry C & Appiah E. Does community-based development empower citizens? Evidence from a randomized evaluation in Ghana. Working Paper; 2016.
15. Veitch CBK. Rural health workforce: planning and development for recruitment and retention. In: Liaw S-T, Kilpatrick S (Eds.), *A Textbook of Australian Rural Health. Australian Rural Health Education Network*. Sage; 2008:113-127.
16. Reeve C, Humphreys J, Wakerman J, et al. Community participation in health service reform: the development of an innovative remote Aboriginal primary health-care service. *Aust J Prim Health*. 2015;21:409-416.
17. Ward ME, De Brún A, Beirne D, et al. Using co-design to develop a collective leadership intervention for healthcare teams to improve safety culture. *Int J Environ Res Public Health*. 2018;15(6):1182.
18. Haldane V, Chuah FLH, Srivastava A, et al. Community participation in health services development, implementation, and evaluation: a systematic review of empowerment, health, community, and process outcomes. *PLoS One*. 2019;14(5):e0216112.
19. Nikkhah H, Redzuan M. Participation as a medium of empowerment in community development. *Eur J Soc Sci*. 2009;1:170-176.
20. Quimbo MA, Erinorio J, Perez M, Tan F. Community development approaches and methods: Implications for community development practice and research. *Community Dev*. 2018;49(5):589-603.
21. Scottish Community Development Commission, (SCDC). What is community development? SCDS; 2019. https://www.scdc.org.uk/who/what-is-community-development. Accessed February 12, 2021.
22. Kelly K, Caputo T. Case study of grassroots community development: sustainable, flexible and cost-effective responses to local needs. *Community Dev J*. 2006;41(2):234-245.
23. Martiniuk A, Colbran R, Ramsden R, et al. Hypothesis: improving literacy about health workforce will improve rural health workforce recruitment, retention and capability. *Hum Resour Health*. 2019;17(1):105. https://doi.org/10.1186/s12960-019-0442-9
24. Rowlands G, Shaw A, Jaswal S, Smith S, Harpham T. Health literacy and the social determinants of health: a qualitative model from adult learners. *Health Promot Int*. 2017;32(1):130-138. https://doi.org/10.1093/heapro/davMOC093
25. Ramsden R, Colbran R, Linehan T, et al. Partnering to address rural health workforce challenges in Western NSW. *J Integr Care*. 2019;28:145-160.
26. Dhillon JK. The rhetoric and reality of partnership working. *J Furth High Educ*. 2005;29(3):211-219.
27. New South Wales Rural Doctors Network. Easy entry, gracious exit, NSWRDN, Newcastle; 2003. https://www.nswrdn.com.au/site/index.cfm?display5401217. Accessed March 31, 2020
28. Hartley J. Case study research. In: Cassell C, Symon G, eds. *Essential Guide to Qualitative Research Methods in Organizations*. Sage; 2004;1-17. https://doi.org/10.3390/ijerph15061182
29. Yin RK. *Case Study Research: Design and Methods*, 5th edn. Sage; 2014.
30. Merriam SB. *Qualitative Research: A Guide to Design and Implementation*, 2nd edn. Jossey-Bass; 2009.
31. Creswell JW. *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, 4th edn; Thousand Oaks, CA: Sage; 2014.
32. Eaton N. Children's community nursing services: models of care delivery. A review of the United Kingdom literature. *J Adv Nurs*. 2000;31(1):49-56.
33. Farmanova E, Kirvan C, Verma J, et al. Triple Aim in Canada: developing capacity to lead to better health, care and cost. *Int J Qual Health Care*. 2016;28(6):830-833.
34. Palumbo R, Manesh M, Pellegrini M, Flamini G. Exploiting Inter-Organizational Relationships in Health Care: A Bibliometric Analysis and Literature Review. Administrative Services; 2020. https://www.mdpi.com/2076-3387/10/3/57/pdf. Accessed February 28, 2021
35. Emerson K, Nabatchi T, Balogh S. An integrated framework for collaborative governance. *J Public Adm Res Theory*. 2012;22(1):1-29.
36. Zarcadoolas C, Pleasant A, Greer DS. Understanding health literacy: an expanded model. *Health Promot Int*. 2005;20(2):195-203.
37. Pirinen A. The barriers and enablers of co-design for services. *Int J Design*. 2016;10(3):27-42.
38. Greenhalgh T, Jackson C, Shaw S, Janamian T. Achieving research impact through co-creation in community-based health services: literature review and case study. *Milbank Q*. 2016;94(2):392-429.
39. Ebneyamini S, Sadeghi Moghadam MR. Toward developing a framework for conducting case study research. *Int J Qual Methods*. 2018;17:1-11. https://doi.org/10.1177/1609406918817954
40. McLeod SA. Case study method. Simply Psychology; 2019 [cited 2021 June 6]. https://www.simplypsychology.org/case-study.html. Accessed January 20, 2021.
41. Crowe S, Cresswell K, Robertson A, Huby G, Avery A, Sheikh A The case study approach. *BMC Med Res Methodol*. 2011;11:1-100.
42. Baxter P, Jack S. Qualitative case study methodology: study design and implementation for novice researchers. *Qual Rep*. 2008;13(4):544-559.

How to cite this article: Ramsden R, Davies S, Colbran R, et al. Collaborative care: Primary health workforce and service delivery in Western New South Wales—A case study. *Aust J Rural Health*. 2021;29:768–778. https://doi.org/10.1111/ajr.12796

APPENDIX 1

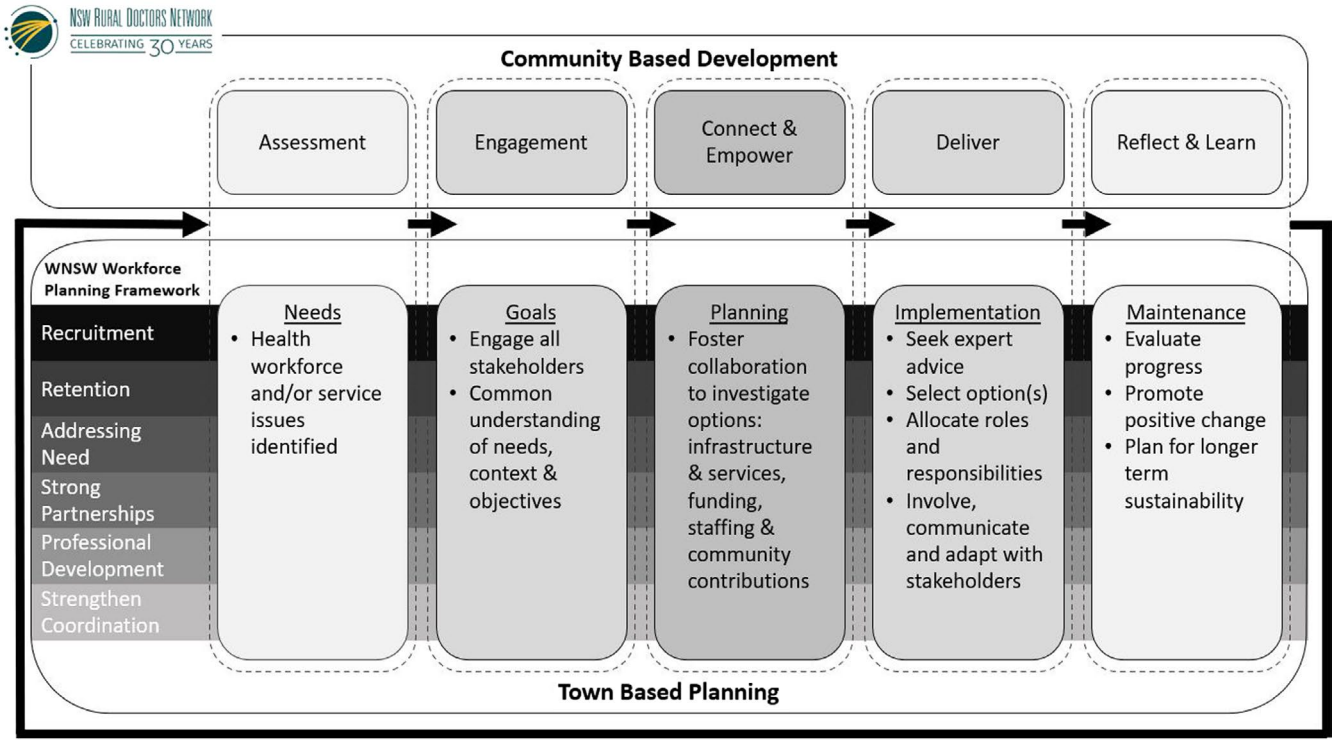

FIGURE A1 Collaborative care framework