

# A collaborative primary health care model for children and young people in rural Australia: explorations of cross-sectoral leader action

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## ABSTRACT

**Background.** Cross-sectoral collaborations are considered necessary to address detrimental health, social, educational and economic outcomes that impact marginalised and disadvantaged populations. There is a strong relationship between the health of children and their educational attainment; good health promotes positive learning. This paper reports cross-sectoral executive and senior management level systems changes required to enable the design of a collaborative primary healthcare service model for children and young people in rural Australia. **Methods.** A descriptive qualitative design was used. Data were collected from executive and senior managers from three organisations (Education, Health and a University Department of Rural Health [ $n = 6$ ]) through individual semi-structured interviews. Data were analysed using an inductive, thematic approach. The study draws on Lewin's Model of Change. **Results.** Three overarching themes were generated from the data: an embedded challenge and experimental solutions; building a shared language and understanding; and the role of relationships and trust. Despite the unique geographical and social context of the study area, strategies emerged from the data on how a solution to an embedded challenge, through design of a primary healthcare model, was established and how the strategies described could be transferred and scaled to other rural and remote communities. **Conclusion.** Contextual differences make each rural and remote area unique. In this study, strategies that are described in the managing change literature were evident. The authors conclude that drawing on strong management of change principles could mean that a service model designed for one remote community might be transferrable to other communities.

**Keywords:** cross-sector collaboration, descriptive qualitative methodology, health inequities, innovation, integrated care, leadership, Lewin's Model of Change, model of care.

## Introduction

There are increasing calls for the establishment of cross-sector collaborations to address complex health inequities that are often linked to the social determinants of health (Baum *et al.* 2022). Cross-sectoral collaborations are considered necessary to address the complex interplay of health, social and environmental determinants that impact marginalised and disadvantaged populations (Lo and Lockwood 2022). Addressing concerns requires systems level integration which typically happens by strengthening connections (McGihon *et al.* 2018). Benefits associated with successful cross-sectoral collaborations include improved healthcare provision and associated health and educational outcomes; the efficient and effective utilisation of resources; and coordinated and integrated care provision (Chircop *et al.* 2015). However, limited evidence exists to describe how cross-sectoral collaborations are conceptualised, and the changes required at executive and senior management levels, across the collaborating sectors, that enable the formation and sustainability of such collaborations (Winters *et al.* 2016).

One such concern surrounded the inequitable outcomes of children and young people in a remote town that created a circle of poorer health and reduced educational attainment.

There is a strong relationship between the health of children and their educational attainment; good health promotes positive learning whilst poorer health and adverse childhood experiences are associated with a decline in learning outcomes and a decrease in school participation, and in extreme cases, exclusion (Houtepen *et al.* 2020).

Many children and young people in the identified area were living in poverty. The median weekly family income in the study area of \$650 (AUD) per week was well under the poverty line for all family configurations with 27.1% of household income below \$650 (AUD) compared to 16.5% across Australia as a whole (Melbourne Institute 2021; ABS Census 2022). They were also less likely to have access to comprehensive health and social services exacerbating their vulnerability. Such complex challenges need to be met with new approaches to healthcare design and provision. Strategies that include developing primary healthcare models, locating services where need exists, strengthening local cross-sectoral collaborations for more effective service coordination and integration are seen as promising to tackle problems of inequity (Chircop *et al.* 2015). Intended outcomes of these new approaches are to ensure that the right care is available in the right place, at the right time and delivered by the right health professionals. Collaborative partnerships are seen as one strategy to seek resources, share knowledge and improve outcomes for issues that are often socially determined and impact many sectors (McPherson *et al.* 2017); hence school settings are ideal locations to promote education, health and social outcomes for children and young people. Evidence shows models of school-based health care, including embedding primary healthcare nurses within school settings, can address gaps in health service provision and improve health and academic outcomes, particularly for disadvantaged populations (Leroy *et al.* 2017). The Primary Health Care Registered Nurse: Schools Based (PHCRN:SB) program is a complex, cross-sector, multi-component primary healthcare initiative that supports a wellness model of care for children, adolescents and their families. It seeks to improve health and education outcomes for children and young people. The service is delivered by registered nurses employed by the Far West Local Health District (FWLHD), who are located on nine school campuses (seven primary and two secondary) and has been described in detail (Jones *et al.* 2019).

The implementation of the PHCRN:SB program provided an ideal opportunity to undertake research that has the potential to further inform the extension of cross-sector collaborative work at the local level and address significant gaps in the cross-sectoral literature, specifically from a rural Australian perspective. The senior executives from a University Department of Rural Health (UDRH), a Local Health District and a Department of Education came together to create the PHCRN:SB program. The collaboration took a social determinants approach, which acknowledges the importance of the non-health sector in contributing to healthy societies (Chircop *et al.* 2015). Leading a transformation to effect

positive change on the common good is more than the strategic leadership of a single organisation, and this program signifies a change to challenge an entrenched problem requiring deep and broad changes and innovation (Bryson *et al.* 2021). Ensuring success requires commitment from executives and senior managers who play a major role in whether innovations progress or not (Heathfield 2016).

The aim of this study was to explore cross-sectoral executive and senior management level systems changes that were required to enable the innovative design of a collaborative and new primary healthcare model in rural Australia, the PHCRN:SB program. Findings from our study provide insight into how cross-sector collaboration created a design to tackle an embedded and challenging issue and offer strategies that can be expanded to inform change in other disadvantaged communities in Australia.

## Methods

### Design and participants

A descriptive qualitative design, common in exploring phenomena in health (Bradshaw *et al.* 2017), was used in this study. Participants were purposefully sampled from three organisations central to the implementation of the new service, because of their distinct roles in developing the program. They were approached via email sent from an administrative officer external to the research team. Five participants had worked in their roles for at least 6 years and were able to recount their experience of the developments. One executive and one senior manager were interviewed from each of the three collaborating organisations ( $n = 6$ ) (Education, Health, and a UDRH), using a semi-structured interview process. The interview guide drew on Lewin's Model of Change (Lewin 1947) (see Box 1) which suggests that there are three stages associated with change: (1) unfreezing; (2) movement; and (3) refreezing (where elements of change are normalised). Several models/frameworks were considered by the authors. The decision to use Lewin's model was based on relevance, influence (Burnes 2020) and because it remains widely used in health (Harrison *et al.* 2021). The COVID-19 pandemic meant that participants were interviewed in a variety of ways: face to face, by telephone and by Zoom, but all at a time and place of their choice.

### Data collection and analysis

Semi-structured interviews were conducted by two researchers (SR, SD) because some participants were known well to at least one of the researchers. The researcher who knew each participant least undertook that interview. Both researchers had PhD qualifications, worked in academia, had an interest in the health of rural and remote communities and promoting access and equity and were experienced in

**Box 1. Interview questions. Exploration of actions by cross-sectorial leaders that led to the design of a collaborative primary health care model in rural Australia.**

Unfreezing:

1. What factors led you to think that a change, such as the Primary Health Care Registered Nurses: School-based (PHCRN:SB) program was necessary?
2. What strategies did you employ to start the change process to introduce this new service?
3. Who did you communicate with inside and outside of your organisation?

Change:

1. What needed to happen to start the implementation of the PHCRN:SB program?
2. Who was important inside/outside your organisation to assist in creating this change?
3. How much resistance or support, internally or externally, did you encounter?

Refreezing:

1. How sustainable is the new PHCRN:SB program?
2. What strategies have you put in place to sustain the change?
3. In the broader organisation, how has the new service been viewed?
4. What key messages would you give someone else embarking on change across multiple sectors?

collecting and analysing qualitative data. The researchers were not involved in the development of the PHCRN:SB program but were both very familiar with the program. Interviews lasted between 42 and 70 min and highlighted the commitment to this research by senior people in three organisations. Interviews were audio-recorded and were transcribed by a third-party transcription service. Field notes recorded observations of the interviewer and factors that may have influenced an interview. To deliver a trustworthy account of participant’s experiences whereby meaning is generated through interpretation, Braun and Clarke’s 6-phase process for reflexive thematic analysis was followed (Braun and Clarke 2006). Steps comprised: data immersion through listening to recordings and reading transcripts; systematically coding data by reading transcripts line by line; initial theme generation by seeking larger patterns; all researchers reviewing the themes in line with the study aim and objectives; and further theme revision and reporting (Braun and Clarke 2021). An example of analysis and theme generation is provided in Table 1. Two researchers (SR and SD) analysed data separately and then came together to discuss and refine themes and interpretations. The researchers considered that the data analysed provided ‘rich’ quality data

**Table 1.** Analysis and generation of themes demonstrating phases 2, 3 and 5 of Braun and Clarke’s framework (Braun and Clarke 2006, 2021).

Phase 5: Refining, defining and naming themes	Phase 3: Generating initial themes from codes and collated data	Phase 2: Systematic data coding
Theme	Theme	Codes -third iteration
Embedded challenges and experimental solutions	Factors that determined how the problem was recognised  Why the embedded challenge became a catalyst for innovation	- Incidental conversations - Lived experience - Driven from community - Community partnership - Local champions - Advocacy  - Sustainable - Addressed policy - Long-time - Long-term visions - Social Determinants of Health (SDH)
Building a shared language and understanding	Ongoing collaboration (professional and social)  Enabling environment	- Translation - Social relationships - Time to understand people - Tailoring message - Proactive  - Flat organisation structure - Deep understanding of system - Advantage of remoteness - Multi-agency solutions - Shared understanding - Seeing value - Proactive
The role of relationships and trust	Shared goals  Ability to change and influence	- Staff turnover - Difficult conversations - Collaborative buy in at executive level - Creative thinking - Embrace new ideas - Relationship development  - Access to senior executive - Flexibility - Challenge system - Bring people in

that was detailed and nuanced rather than a ‘thick’ quantity of data (Fusch and Ness 2015). This is in line with the concept of ‘information power’ whereby the participants interviewed provided relevant information thus fewer participants were needed (Malterud et al. 2016).

**Ethics approval**

Ethics approval was granted by Greater Western Human Research Ethics Committee (2019/ETH13176) in November

2019 and by NSW Education Research Applications Process (SERAP 2019488) in August 2020. This study was impacted by the COVID-19 pandemic with delayed education ethics approval and prolonged data collection. Three interviews were collected in person between lockdowns in 2021 and three were collected via Zoom with conversations audiotaped as if they had taken place in person. Data collection was completed by April 2021. A major ethical consideration was the likelihood that participants could be identified due to the nature of rural communities, but the risk was considered to be low. The participant information sheet did indicate to participants that there was a risk of being potentially identifiable. Despite this, key participants provided informed consent and chose to take part. Quotes from participants are labelled according to organisation to protect individual identity.

## Results

Analysis of the data collected from six participants across three organisations led us to generate three overarching themes: embedded challenges and experimental solutions; building a shared language and understanding; and the role of relationships and trust.

### Embedded challenges and experimental solutions

An embedded challenge was the cycle of disadvantage that was exacerbated by remoteness and was a problem that required a 'joined up' response to challenges that would ordinarily be 'too hard' to tackle:

No single organization is going to tackle some of these problems. (Ed 1)

Parents in the community reportedly asked why health services waited for their children to get sick and only then treat them. Treading the same path suddenly became the option that advocates for children, young people and their families were no longer prepared to follow and bold solutions became important:

We're going to experiment, we're going to try, we're going to do some things, they'll fail, we know they're not going to work, but we're going to get better, we're going to fail well. (Ed 1)

Within health, it was noted that a gap in services existed for people aged between 5 and 18 years, and education staff (from all levels, which included those in strategic roles, principals, teachers and support staff) felt there were limited strategies for addressing needs of disaffected youth:

We've got pointy end kids with really complex social, health, educational needs. But they seem to get lost in the system. (UD 1)

We recognised that if we didn't make a change, that we would be dealing with (adult patients) with chronic mental health, socially inept situations, and we wouldn't break the cycle. (Health 1)

Through further analysis of the data, two sub-themes were evident. These were factors that determined how the embedded problem was recognised and why the problem came out of the 'too-hard' basket and became a catalyst for a cross-sector collaboration and innovation.

Professionals, some of whom had been born and bred in this community whilst others had lived and worked in it for several years, described the lived experience of the health challenges. This provided an impetus to advocate and become local champions. Referring to an example from another rural and remote area outside the study area, the following quote emphasises the need for advocacy and local champions:

Someone said to me - how has he done that? and I said because he's got this unrelenting belief on the rights of the kids in terms of what their education should look like, and . . . . But it just pervades everything he does. It's just the backbone of every decision that's made, so it's a little bit the same with this, in the fact that kids in rural and remote areas deserve access to appropriate levels of health services and support, and our distance shouldn't – our geographical location or our distance shouldn't be a barrier to accessing that service. So, there's that collective belief across those organisations and it's front and centre in the manner in which we carry on our business, hence the impact that we have. (Ed 1)

Participants from both health and education sectors talked about incidental conversations that took place. The close-knit nature of, and relationships within, this rural community provided many opportunities for partnerships with members of the community. The complex challenge and a call for action to address their specific challenges was driven by the community:

What we're hearing is family centred care. Families want to be consulted. People want to be consulted around what their health care is . . . once again hearing community saying, we're tired of pre-package. (UD 1)

The embedded challenge became a catalyst for innovation, which was built over several years and was fueled by the long-term vision of senior executives and managers, who recognised the impact of social determinants of health on children and young people and that these crossed health and education boundaries, and who were serendipitously in post at the same time. The focus for all parties became about the children and not the needs of their organisations:

The focus was on the issue and not the badge of the organization. (Ed 1)



A key factor in addressing the issue that became part of the solution came when state government policies aligned. These policies were: the state Premier's priority of obesity in schools; the Leading Better Value Care strategy that sought to reduce the burden of chronic disease; and research on the impacts of bullying on the mental health of young people. Existing data that showed the impact of allied health interventions with school children also provided evidence to support business cases:

I knew my own district and the CE [chief executive] didn't have the money to do it, so I went across to the Ministry of Health and went to the integrated care department and gave them the papers that [name] and their team, with our input, but they were the major writers, and said, 'Look, we can do this, this is a long-term, we need an investment, which show you the intervention of Allied Health thus far in schools, we can pick that up and we can take it further.' (Health 1)

Opportunities for the sustainability of a new service model were created initially through 'one off' funding opportunities that soon became part of core business and were not reliant on short-term program grants.

### **Building a shared language and understanding**

Participants, who were advocates in the three primary organisations, were initially at loggerheads. The disagreements settled as key players realised that they were talking about the same problem but that the different stakeholder organisations used different language often specific to health or to education. This meant that initially there was a reduced level of shared understanding until they understood the language the different organisations used. In early conversations, there were also misunderstandings, for example, some community organisations were concerned that the new service was going to replace them, and care needed to be taken to mitigate this:

... didn't quite understand how it wasn't replacing their service; it was complimenting; it wasn't duplicating; it was doing something in a space that no one was doing anything already. It wasn't taking away their clients. It was perhaps identifying earlier and referring sooner to them. (Health 2)

Therefore, building a shared language to improve understanding was an important early skill-set in successfully tackling the issue of poor health and educational outcomes for children and young people. Two sub-themes identified were ongoing collaboration that was both professional and social, and an enabling environment. Participants from the organisations that initially drove the need for change (a health service, and a UDRH) reported that translating and

tailoring messages to the audience, taking time to understand people and building on social as well as professional relationships made ongoing collaborations more effective and able to focus on this issue:

We've got a strong commitment here, we'll actually see it through. And if it gets tough and things are difficult, we'll solve the problem rather than actually walk away from it. (UD 2)

An enabling environment was an important factor, and key elements of such an environment included being allowed to be provocative and to challenge other members of the group, collectively being able to see value in change, being able to develop a shared understanding and create multi-agency solutions that showed a deep understanding of the systems that each organisation worked with and within:

Again, it's that culture of looking for innovative ways to doing things and a really simple answer to that, and not to be silly about it, but we talk to each other and we talk to each other often. (Ed 2)

Across all three organisations, participants described organisational structure as being flat. In remote communities, this flat structure means that there is easier access to senior executives than is the norm in metropolitan environments and this enabled conversations between the key stakeholders who needed to be engaged to bolster success:

But when [Health Chief Executive] was available he was accessible and completely willing to engage in those conversations about how to do things differently as an organisation and as a system, and to collaborate, like really true collaborations. (Ed 1)

Having the buy-in from senior executives meant that managers were freed up to create changes. The advantage and nature of remoteness were noted as enabling factors, and had an impact on the close relationships that were often social as well as professional and created a deep level of trust:

We would meet, we would socialise, go to the [cafe name]. And so, that notion of a social connection as well as a professional connection, was operating ... when somebody's got a good idea, I suppose, you have this sense that you're going to get a commitment from that organisation, or from those people to actually see it through. (UD 2)

### **The role of relationships and trust**

In this theme, shared goals, and the ability to change and influence, were sub-themes. Shared goals were maintained, in part, because of low staff turnover at executive and senior management level and the collaborative buy-in by the senior

executives in each organisation. The establishment and, where necessary, further development of relationships and trust enabled difficult conversations to be broached and solutions reached that enabled planning to move forward:

We have difficult conversations, we have, what do they call it, a creative abrasion and tense conversations with people that are productive, internally. (Ed 1)

Embracing new ideas and creative thinking to reach shared goals was enhanced by established relationships and trust:

... a culture of let's try something different because we're in a pretty remote - we're in a pretty unique context. So therefore, that almost gives us licence to be a little bit more or to think innovatively. (Ed 2)

Having access to senior executives meant that the ability to change and influence was supported, and flexible approaches were encouraged that could challenge the existing system:

So because we're as isolated as we are, but even our isolation has led to quite good connection. So even though we might be isolated from the core or the system, we are really well connected at quite senior levels of organisations. (Ed 1)

The trust and willingness to engage that existed across the three organisations, and the skills that were apparent in the team to negotiate change, were factors that enabled them to tackle this embedded challenge. One skill was the ability to write successful and compelling business cases for funding:

This is where clever communities know how to package that. Because if you use the language of the government of the day, or the policy makers of the day, and you share it in the way you're saying. (UD 1)

Another example of trust was that the health chief executive saw the need, value and had vision about the proposal and allocated continuing funding to the new nursing positions, thus creating a strategy for sustainability and a long-term commitment to addressing the problem that made it hard to dismantle the service after the chief executive left. Through bold leadership a willingness to take a risk to create a new system to tackle a perennial problem was displayed. The education executive was concerned about workload on principals in developing the innovation. However, when asked who of their staff should be nominated, the principals themselves wanted to be involved:

When we approached the principals, they all went, oh, I want to be the lead person on this in my school, this is too important. (Ed 1)

As such, the executive of this organisation showed leadership by supporting their staff to be actively involved.

## Discussion

This study has provided valuable insights into the reasons that led to the reported cross-sector collaboration and how the leaders from different sectors brought their discipline specific perspectives to enable collaboration, program design and implementation to attempt to address a cycle of disadvantage that was exacerbated by remoteness. It was the deeply embedded and complex issues affecting children and young people that required a cross-sectoral response to challenges that would ordinarily be considered as 'too hard' to tackle. Improving educational outcomes alongside social inclusion, access, participation and engagement are described as important to learning success in childhood; a time that is integral to health and wellbeing and for positive future roles in society (Roberts 2017). Our study explored how these changes were managed by executives and senior managers within and across organisations to enable collaboration formation and program design, including policy, structural, and participant experiences of these changes from the perspectives of the three organisations who drove the change. These findings provided, through three overarching themes: embedded challenges and experimental solutions; building a shared language and understanding; and the role of relationships and trust, insight into how the changes can inform the potential transferability of the program to additional communities and school sites, and future approaches to the establishment and maintenance of additional cross-sector collaborations.

The aim to explore cross-sectoral executive and senior management level systems changes that were required to enable the innovative design of a collaborative and new primary healthcare service model in rural Australia, the PHCRN:SB program, demonstrates the first two stages of Lewin's model that underpin the research: unfreezing and movement. The recognition of a cycle of disadvantage that negatively affected children, young people and their families was evident to organisations such as education, where a child's attendance might be sub-optimal, developmental challenges apparent and educational achievement lower than their peers. In health, there was a recognition of poorer health outcomes for those with lower levels of educational attainment. These factors led to a desire to unfreeze the 'status quo'. This is reflected in the first theme: embedded challenges and experimental solutions. Movement, according to Lewin's Model, occurs when driving forces for change exceed restraining forces. Driving forces in this project included an acknowledgement of the issue, hearing and acting on the voices of the community and progressive leadership amongst executive teams. Re-freezing, through the

establishment and implementation of the program, is described in another paper (Jones *et al.* 2019). The fluidity of a situation plays an important part, and the more fluidity there is (unfreezing) then the easier it is to bring about changes. Lewin noted that unfreezing was a challenging part of a process that tackled the 'status quo'. That this study reports unfreezing across three organisations, highlights the importance of the processes and achievements, because more often different organisations are at different stages of readiness. The recognition by leaders across the three organisations of an issue of concern, the influence of existing relationships and trust created momentum to improve understanding and work to create sustainable change. Challenges, such as the one described in this paper, often present as problems with many interdependent factors making them feel *impossible* to solve and therefore are often left to perpetuate. The factors associated with 'wicked problems', as embedded and complex challenges are often referred to (Rittel and Webber 1973), are difficult to define, and therefore solving them requires a deep understanding of, and by, the stakeholders involved, and an innovative and somewhat experimental approach to designing a solution (Bryson *et al.* 2021). The participants in this study provided insights that spoke to poor outcomes across health and education for children and young people who often presented with poor health behaviours in their teens, to unfreezing and the deep understanding that was needed to underpin change. Young people have unique developmental, emotional and social needs that require responsive health systems to support their access to services (Robards *et al.* 2019). Addressing the embedded challenges through an experimental solution was in part achieved through building a shared language of understanding. The development of effective communication when collaborating between multiple organisations is noted as a skilled endeavour (Tooher *et al.* 2017). Aligned with the role of relationships and trust, these factors were essential to both identify the opportunities for collaboration that managed to align visions and goals of all partners (Lo and Lockwood 2022). In this case, maintaining the status quo would have meant that poor health and educational outcomes for children and young people would continue perpetuating a lifetime of increased hardships (Sanford *et al.* 2021). Instead, the findings of this study showed that concerns could be addressed by creating system-level integration characterised by shared goals and frequent communication (McGihon *et al.* 2018). Understanding the processes and factors that influence cross-sectoral collaboration is noted as vital to ensure continuing success of projects that run across sectors (Tooher *et al.* 2017). Inter-sectoral collaboration is seen as one of the core principles of primary health care (Chircop *et al.* 2015). In this case, it may offer an opportunity to address issues of inequity for children and young people and could be considered a step forward in extending key policy drivers, such as the first 2000 days (NSW Health 2019),

further into the lifespan where services can be less available particularly in rural and remote areas.

We are mindful that this study took place in a remote context where it is common to have long-standing collaborations between key organisations. As such, it may be considered that enabling a cross-sector collaboration to explore a solution to a 'wicked problem' that resulted in a new service being developed and innovation was enabled because of the remote setting, and is thus a limitation. We contend that our findings describe skills and attributes that are likely to be evident in any other context and thus the new service described here is a scalable entity. Key factors were reciprocity, mutual benefit and listening to community stakeholders, and were described through building a shared language and understanding and through relationships that were based on trust that allowed what Lewin describes as movement, when the forces for change outweigh resistance. The trust was such that it allowed space for disagreements between the advocates in each organisation, but because the focus could be brought back to improving outcomes for children and young people, energy was created to find a meaningful solution and thus embedding Local Health District-employed registered nurses into schools to provide support for children (Sanford *et al.* 2021).

Strategies could be employed to elicit change in other contexts. Our study acknowledges that the actions described developed over several years and had been cultivated during that time span. Successful change is noted to build on a series of phases that usually occur over a considerable time frame and that skipping steps leads to less successful outcomes (Kotter 1995). Retention of key senior staff, as noted in our study's findings, is a crucial factor to achieve sustained change in Kotter's view and is a strategy that has been explored by others (Herlitz *et al.* 2020). Leadership in our study has demonstrated skills that enabled movement from the program itself to the systems level. This movement is multi-faceted and cut across individual siloed organisations by building bridges across sectors to create relationships that were maintained over several years (Bryson *et al.* 2021). The innovation described in our study shows how leadership support at the executive level of all three organisations empowered staff in senior management positions to be active stakeholders thus creating a powerful platform for progress (Heathfield 2016). These elements are crucial for collaborative and cross-sectoral teams to be successful and, as Chircop *et al.* (2015) noted, this may be one example of how future research can build on studies such as ours by focussing on the successes of systems change to effect improvement in equity for children and young people rather than focussing on outcomes alone.

Other factors that contributed to the success of this program were funding and community literacy. Failure to embed positive health messages early, and not providing support to meet health needs of young people, have been shown to increase risk for chronic conditions (Houtepen *et al.* 2020).

The World Health Organization's Innovative Care for Chronic Conditions Framework (World Health Organization 2002: p. 65) highlights the importance of consistent financing. Often, if supported at all, new initiatives attract short to medium-term funding that impacts negatively on sustainability. Providing funding to make this program core business, through the health chief executive officers's actions to commit to nursing positions, was a major factor in making this program sustainable and enabling its continuation even after staff instrumental in its design and rollout left the organisations. However, funding cannot always overcome workforce shortages, because it can be harder to attract staff to rural and remote regions. Without the vision and leadership that led to consistent financing of this innovation, it may not have survived, and this is a crucial factor that others should consider. Furthermore, drawing on community skills, knowledge and resources, which Jones et al. (2020) named community literacy, are critical to the design, delivery and adaptation of healthcare policies and services to meet community needs. We contend that this is another important factor to affect long-term and sustainable change of embedded challenges to the health and educational outcomes of children and young people.

## Conclusion

Understanding context is important when implementing change. This study took place in a remote community in far west NSW. The uniqueness of the site was expected to describe how a new primary healthcare model that involved cross-sectoral contributions from three organisations was developed. What also emerged from the data were factors that were linked to leadership, vision and skills to effectively manage change. These factors, we conclude, offer other rural and remote communities opportunity to implement a similar model to address health, social, educational and economic outcomes thus reducing inequity for children and young people.

## References

- ABS Census (2022) 2021 Census, Community Profile Series General Community Profile', Catalogue No 2001.0 AGPS, Canberra. Australian Bureau of Statistics.
- Baum F, Townsend B, Fisher M, Browne-Yung K, Freeman T, Ziersch A, Harris P, Friel S (2022) Creating political will for action on health equity: practical lessons for public health policy actors. *International Journal of Health Policy and Management* 11(7), 947–960. doi:10.34172/ijhpm.2020.233
- Bradshaw C, Atkinson S, Doody O (2017) Employing a qualitative description approach in health care research. *Global Qualitative Nursing Research* 4, 2333393617742282. doi:10.1177/2333393617742282
- Braun V, Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3, 77–101. doi:10.1191/1478088706qp063oa
- Braun V, Clarke V (2021) One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology* 18, 328–352. doi:10.1080/14780887.2020.1769238
- Bryson JM, Barberg B, Crosby BC, Patton MQ (2021) Leading social transformations: creating public value and advancing the common good. *Journal of Change Management* 21(2), 180–202. doi:10.1080/14697017.2021.1917492
- Burnes B (2020) The origins of Lewin's three-step model of change. *The Journal of Applied Behavioral Science* 56(1), 32–59. doi:10.1177/0021886319892685
- Chircop A, Bassett R, Taylor E (2015) Evidence on how to practice intersectoral collaboration for health equity: a scoping review. *Critical Public Health* 25(2), 178–191. doi:10.1080/09581596.2014.887831
- Fusch PI, Ness LR (2015) Are we there yet? Data saturation in qualitative research. *The Qualitative Report* 20(9), 1408–1416. doi:10.46743/2160-3715/2015.2281
- Harrison R, Fischer S, Walpola RL, Chauhan A, Babalola T, Mears S, Le-Dao H (2021) Where do models for change management, improvement and implementation meet? A systematic review of the applications of change management models in healthcare. *Journal of Healthcare Leadership* 13, 85–108. doi:10.2147/JHL.S289176
- Heathfield S (2016) Executive support and leadership in change management. Available at <https://strattonconsulting.com/wp-content/uploads/2017/09/Executive-Support-and-Leadership-in-Change-Management.pdf> [Verified 13 April 2023]
- Herlitz L, MacIntyre H, Osborn T, Bonell C (2020) The sustainability of public health interventions in schools: a systematic review. *Implementation Science* 15, 4. doi:10.1186/s13012-019-0961-8
- Houtepen LC, Heron J, Suderman MJ, Fraser A, Chittleborough CR, Howe LD (2020) Associations of adverse childhood experiences with educational attainment and adolescent health and the role of family and socioeconomic factors: a prospective cohort study in the UK. *PLoS Medicine* 17(3), e1003031. doi:10.1371/journal.pmed.1003031
- Jones D, Ballard J, Dyson R, Macbeth P, Lyle D, Sunny P, Thomas A, Sharma I (2019) A community engaged primary healthcare strategy to address rural school student inequities: a descriptive paper. *Primary Health Care Research & Development* 20, E26. doi:10.1017/S1463423618000907
- Jones D, Lyle D, McAllister L, Randall S, Dyson R, White D, Smith A, Hampton D, Goldsworthy M, Rowe A (2020) The case for integrated health and community literacy to achieve transformational community engagement and improved health outcomes: an inclusive approach to addressing rural and remote health inequities and community healthcare expectations. *Primary Health Care Research & Development* 21, E57. doi:10.1017/S1463423620000481
- Kotter J (1995) Leading change: why transformation efforts fail. *Harvard Business Review*. March–April, 59–67.
- Leroy ZC, Wallin R, Lee S (2017) The role of school health services in addressing the needs of students with chronic health conditions. *The Journal of School Nursing* 33(1), 64–72. doi:10.1177/1059840516678909
- Lewin K (1947) Frontiers in group dynamics: concept, models and reality in social science; social equilibria and social change. *Human Relations* 1, 5–41. doi:10.1177/001872674700100103
- Lo K, Lockwood C (2022) Improving cross-sector collaborations in place-based population health projects. *Public Health in Practice* 4, 100285. doi:10.1016/j.puhip.2022.100285
- Malterud K, Siersma VD, Guassora AD (2016) Sample size in qualitative interview studies; guided by information power. *Qualitative Health Research* 26(13), 1753–1760. doi:10.1177/1049732315617444
- McGihon R, Hawke LD, Chaim G, Henderson J (2018) Cross-sectoral integration in youth-focused health and social services in Canada: a social network analysis. *BMC Health Services Research* 18, 901. doi:10.1186/s12913-018-3742-1
- McPherson C, Ploeg J, Edwards N, Ciliska D, Sword W (2017) A catalyst for system change: a case study of child health network formation, evolution and sustainability in Canada. *BMC Health Services Research* 17, 100. doi:10.1186/s12913-017-2018-5
- Melbourne Institute (2021) Poverty lines: Australia. Available at [https://melbourneinstitute.unimelb.edu.au/\\_data/assets/pdf\\_file/0007/3889393/Poverty-Lines-Australia-March-2021.pdf](https://melbourneinstitute.unimelb.edu.au/_data/assets/pdf_file/0007/3889393/Poverty-Lines-Australia-March-2021.pdf) [Verified 14 April 2022]
- NSW Health (2019) The first 2000 days framework. Available at [https://www1.health.nsw.gov.au/pds/Pages/doc.aspx?dn=PD2019\\_008](https://www1.health.nsw.gov.au/pds/Pages/doc.aspx?dn=PD2019_008) [Verified 14 April 2022]



- Rittel HWJ, Webber MM (1973) Dilemmas in a general theory of planning. *Policy Sciences* **4**, 155–169. doi:10.1007/BF01405730
- Robards F, Kang M, Steinbeck K, Hawke C, Jan S, Sanci L, Liew YY, Kong M, Usherwood T (2019) Health care equity and access for marginalised young people: a longitudinal qualitative study exploring health system navigation in Australia. *International Journal for Equity in Health* **18**, 41. doi:10.1186/s12939-019-0941-2
- Roberts W (2017) Trust, empathy and time: relationship building with families experiencing vulnerability and disadvantage in early childhood education and care services. *Australasian Journal of Early Childhood* **42**, 4–12. doi:10.23965/AJEC.42.4.01
- Sanford C, Saurman E, Dennis S, Lyle D (2021) 'We're definitely the link': the role of school-based primary health care registered nurses in a rural community. *Australian Journal of Primary Health* **27**, 76–82. doi:10.1071/PY20149
- Toohar R, Collins J, Braunack-Mayer A, Burgess T, Skinner SR, O'Keefe M, Watson M, Marshall HS (2017) Intersectoral collaboration to implement school-based health programmes: Australian perspectives. *Health Promotion International* **32**, 312–321. doi:10.1093/heapro/dav120
- Winters S, Magalhaes L, Kinsella EA, Kothari A (2016) Cross-sector service provision in health and social care: an umbrella review. *International Journal of Integrated Care* **16**(1), 10. doi:10.5334/ijic.2460
- World Health Organization (2002) Innovative care for chronic conditions: building blocks for action. Available at <https://www.who.int/chp/knowledge/publications/icccglobalreport.pdf> [Verified 22 January 2022]

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