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Lessons learnt from the implementation of new models of care delivery through alliance governance in the Southern health region of New Zealand: A qualitative study

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ABSTRACT

Objectives: To explore the process of implementation of the primary and community care strategy (PCCS) (new models of care delivery) through alliance governance in the Southern health region of New Zealand (NZ).

Design: Qualitative semi-structured interviews were undertaken. A rapid thematic analysis, informed by implementation science theory: the Consolidated Framework for Implementation Research (CFIR), was conducted.

Setting: Southern health region of NZ (Otago and Southland)

Participants: Eleven key informants (Alliance Leadership Team members and senior health professionals) who were involved in developing and/or implementation of the strategy

Results: The large number of strategy action plans and interdependencies of activities made the implementation of the strategy complex. In the inner setting, communication and relationships between individuals and organisations were identified as an important factor for joint and integrated working. Key elements of a positive implementation climate were not adequately addressed to better align the interests of health providers, and there were multiple competing priorities for the project leaders. A perceived low level of commitment from the leadership of both organisations to joint working and resourcing indicated poor organisational readiness. Gaps in the implementation process included no detailed implementation plan, ambitious targets, poor execution of the plan, the lack of a clear performance monitoring framework and an inadequate feedback mechanism.

Conclusions: This study identified factors for the successful implementation of the PCSS using an alliancing approach in Southern NZ. During the evaluation period,

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wide-ranging NZ health sector reforms were announced. With alliances, partnerships and networks increasingly held up as models for integration, this evaluation identifies important lessons for policymakers, managers and services providers both in NZ and internationally.

Abstract word count: 266

STRENGTHS AND LIMITATIONS OF THIS STUDY

> ➤ This study contributes to a currently small body of research using implementation science theory (CFIR) to study new models of care delivery using an alliancing governance model.
>
> ➤ The use of the CFIR helped us to illuminate contextual factors and understand the complex interplay between the context and implementation process of the strategy intervention.
>
> ➤ The study's participants had a governance and senior managerial role and were directly involved in developing and/or implementing the PCCS.
>
> ➤ The study was conducted in partnership with the local health system, which was helpful in facilitating the sharing of findings and feedback to the Southern health system.
>
> ➤ Use of a rapid analysis approach was helpful in providing prompt feedback to the local health system, but it might risk missing nuances of data.

INTRODUCTION

Health systems worldwide and in New Zealand (NZ) are facing a number of challenges, which are likely to intensify in the future.[1 2] A key challenge is the need for better integration and coordination of services.[1-5] Reducing fragmentation and achieving integration is a key response and, in NZ, a goal of recent health policy and system reforms.[1 4 6-8]

A key approach used in NZ at the local health system level from 2013 to 2021 to promote the integration of health care across primary and secondary care was that of alliancing.[9] Alliances bring all key providers within a local health system together in the process of governing health care design and delivery, with a focus on building whole-of-system service designs.[12 13] Derived from the construction industry, this concept has been used in NZ and other countries such as the UK and Australia.[15 16] Alliancing promises a high trust, low bureaucracy way of working between organisations.[15 18] Ideally, members of an alliance should have the capacity to bring resources to the alliance table so decisions can be implemented and to put aside sectoral interest to work collaboratively towards a joint goal and take a whole-of-system approach to planning and decision making.[12 15] The evaluations of past initiatives developed and implemented through an alliance approach in NZ and via similar initiatives (e.g. accountable care organisations in the US and Vanguard programme in the UK) internationally show some promise in terms of improving integration, although it needs to be noted that the health system context in which such initiatives are being implemented is often both complex and changeable.[12 19-21]

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In the Southern health region of NZ (see Box 1) the Southern District Health Board (SDHB) and WellSouth Primary Health Organisation (PHO), working together through a formal contractual alliance (Alliance South), developed a Primary and Community Care Strategy (PCCS) (see box 2) "to do things differently in primary and community care."[6] The strategy, launched in 2018, reflected the commitments of the two alliance partners and priorities for improving primary and community care in the Southern region.[6] Key action areas for the delivery of the strategy were new models of care workstreams (e.g. Health Care Home, Home Team, Community Health Hub, Locality network) and enabling infrastructures (e.g. governance and leadership, workforce capability and culture, funding and contracting).[6] Implementation of the PCCS was carried out by Alliance South with joint governance from leaders in both the SDHB and PHO through the Alliance Leadership Team (ALT).[6]

The strategy's action plan included establishing a culture of continuous improvement supported by the monitoring and rapid evaluation of new initiatives.[22]

Box 1 NZ Southern Health System

The NZ Southern health system comprises a DHB, being the largest geographic region out of 20 DHBs across the country. There is a single PHO in the region. The DHB and PHO serve just over 300000 people with 40% living rurally.[6] The DHB has the overall responsibility for planning and funding in the region and owns public hospitals. The PHO receives funding from the DHB to support primary care and affiliated general practices. The region has two main hospitals and six small regional hospitals.

In 2019, the University of Otago and the Alliance South received funding to evaluate the implementation of the PCCS as a University-Health Sector collaborative project. This article reports on an evaluation that aimed to explore PCCS implementation at the alliance governance level. More specifically, the evaluation aimed to identify facilitators or/and barriers to the successful implementation of the PCCS using a

commonly used implementation science theory: the Consolidated Framework for

Implementation Research (CFIR)[10] (see Box 2). This framework has been previously

used to study complex interventions.[17 23]

Box 2 CFIR

The CFIR is a theoretical framework that provides a structure for identifying facilitators and barriers to implementation.[7 10] It offers a comprehensive, standardised list of constructs that allow researchers to identify variables that are most relevant to a particular intervention. The CFIR comprises five domains: intervention characteristics (eight constructs), outer setting (four constructs), inner setting (five constructs), characteristics of the individuals involved (five constructs) and the process of implementation (four constructs).[10] The CFIR has been widely used to inform qualitative process evaluations across a range of complex interventions, including health care redesign, in health care systems.[17]

METHODS

Design, study setting and sampling

Semi-structured interviews were conducted between March 2021 to August 2021

with key informants. These constituted the members of the ALT, including a former

senior member of the SDHB involved in commissioning the PCCS and the service

project leads of the workstreams (see Box 3). Interviews were conducted either by

video conferencing or face-to-face. Interviews varied in length from 30 to 45 minutes.

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Box 3 The PCCS: Vision and strategic goals

The PCCS provides a vision for primary and community care in the Southern health system. It recognises the challenges the health system faces in responding to the changing needs of the community, increasing pressure on the health workforce, and the responsibility to provide equitable access to services across the large and diverse district.

The Strategy and Action Plan have been developed jointly by SDHB and WellSouth, with support from the Community Health Council, University of Otago and others, reflecting their commitment to working together to improve the contribution of primary and community care to the wider Southern health system.

The vision for primary and community care is '*excellent primary and community care that empowers people in our diverse communities to live well, stay well, get well and die well, through integrated ways of working, rapid learning and effective use of technology.*'

The strategy has strategic goals to support the vision focusing on empowering consumers, whanau and communities; integrating care across primary, community and secondary care; and a technology enabled health system.

Key action areas for the delivery of the strategy set out in the action plan were new models of care/workstreams and enabling infrastructures.

Key models of care / workstreams include:

Health Care Home implementation: A patient-centred approach which aims to combine the traditional core values of general practice with building the capacity and capability of general practice through the development of new roles, skills, and ways of working.[11]

Community Health Hubs implementation: Establishing facilities where secondary outpatient services, advanced primary care services, at least one General Practice operate in the Health Care Home model, diagnostic services and other independent and community based healthcare providers work together in an integrated way.

Locality Network implementation: Advisory networks made of health professionals and consumers which help to prioritise and plan health services to better align with the needs of local communities.

Home Team (Rapid response and enablement service): A patient centred initiative which aims to help support patients at home via an inter-professional team after leaving the hospital, or a support service at home to avoid to hospital admission. The target group is elderly people.

Consumer Led Integrated Care: A programme of care to people with long term conditions using care planning and risk stratification to access more care and provide greater control over managing patient health conditions.[14]

The enabling infrastructures include governance and leadership of the system, health and business intelligence to support planning, funding and delivery; workforce capability and culture; and funding and contracting arrangements to support integrated ways of working.

Data collection

A semi-structured interview guide (Supplementary file 1) was used for interviews

based on the PCCS goals, a literature review and discussion within the research

team. The topic guide covered the key areas of governance team focus (structure, capability, and internal relationships), implementation and monitoring of the strategy, perceived impact of the strategy and barriers and facilitators to implementation. Revision and refinement of the topic guide was undertaken as the interviews progressed. All but two interviews were conducted via Zoom.

Data analysis

All interviews (undertaken by GG) were audio and/or video recorded. Field notes for all interviews were taken, which were expanded by listening to the audio recording and reading automatic transcripts obtained from Zoom.[24 25] A rapid thematic analysis [26] was conducted (GG, TS, CJ and RG) informed by the CFIR.[10 17] First, a summary template in MS Word was prepared from the recorded responses guided by the study research questions and interview guide questions which was used to code the remaining field notes.[25 27] Then, the responses were mapped to the CFIR domains and constructs to categorise facilitators and barriers of implementation. The consolidated criteria for reporting qualitative research (COREQ)[28] were used to structure reporting of the methods and the findings (Supplementary file 2).

Patient and Public Involvement

No patients or the public were involved in the design of this study.

RESULTS

We interviewed 11 participants (five female and four male) which constituted five ALT members (chief executive of SDHB, chief executive of Well South PHO, Chief Māori Health Strategy & Improvement Officer, a district Mayor, and a community representative) and six other key informants based on their involvement in the

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development or implementation of the strategy (former chair of the ALT, former

commissioner of the SDHB, three service project leaders of the workstreams and the

executive director for primary and community care strategy).

A number of implementation issues were identified mainly in three CFIR domains:

implementation characteristics, implementation context and implementation process

(See Box 4).

Box 4 CFIR domains and constructs.

I. Intervention characteristics
Intervention Source
Evidence Strength & Quality
Relative Advantage
Adaptability
Trialability
Complexity
Design Quality & Packaging
Cost
II. Outer setting
Patient Needs & Resources
Cosmopolitanism
Peer Pressure
External Policy & Incentives
III. Inner setting
Structural Characteristics
Networks & Communications
Culture
Implementation Climate
Readiness for Implementation
IV. Characteristics of individuals
Knowledge & Beliefs about the Intervention
Self-efficacy
Individual Stage of Change
Individual Identification with Organization
Other Personal Attributes
V. Implementation Process
Planning
Engaging
Executing
Reflecting & Evaluating
Domains and constructs used in this study are in bold.

Implementation characteristics

<u>Complexity</u>

Complexity is defined as the perceived difficulty of implementation, which is reflected

by duration, scope, radicalness, disruptiveness and intricacy.[10] Participants

considered the PCCS a complex intervention and challenging to implement in a short

timeframe. The sheer magnitude of the action plan required the integration of

primary and secondary care. Related to this, some objectives in the strategy were

less tangible without explicit activities and milestones.

> *[The] strategy and action plan is a massive piece of work. …it took a long time*
>
> *to unpack and figure out exactly who was supposed to be responsible for*
>
> *doing different things within the strategy and action plan, because it had such*
>
> *a massive span. It wasn't just one department, it's like all of primary and*
>
> *community, and then also needed buy-in from secondary to actually make it*
>
> *work. So it was a whole of system approach that required everyone to get on*
>
> *board. (P10)*

Another source of complexity was related to the interdependencies of the regional

health context. For example, the successful implementation of the Community Health

Hub depended upon the development of the new Dunedin hospital, a significant

project located in the regional metropolitan centre. Therefore, for the success of such

projects, there was a need to work out the interdependencies, which appeared to be

missing from the strategy implementation.

> *…if I think about [Community] Health Hubs we've got the things that are going*
>
> *to impact on the success of Health Hubs are outside of the strategy. So things*
>
> *like the development of the new Dunedin hospital, where there is a whole*

stream of work around, what's going to exist outside of the new Dunedin

hospital, and what's going to be in an ambulatory care centre and who's

responsible for facilitating that is not clear… (P1)

Inner setting

The 'inner setting' is defined as the structural and cultural contexts through which the

implementation process occurs.[10] Networks and communications, culture,

implementation climate and implementation readiness were the constructs identified

in this domain.

Networks and communications

The CFIR defines this construct as the nature and quality of social networks, and the

nature and quality of formal and informal communications within an organisation.

Two sub-themes were identified in this construct: relationships between individuals,

and communication of vision and mission. First, there was a mechanism in place for

the ALT members to meet and communicate regularly. Good working relationships at

all levels were considered an essential factor in implementing the strategy activities

that needed integrated ways of working. However, participants mentioned that

relationships between individuals, especially at the higher level, were problematic.

This was seen as adversely affecting the quality of communication, hampering open

discussion, teamwork, collaboration and feedback. Personalities, personal agenda

and power politics, especially at the senior leadership level, were perceived to be

conflictual, a barrier to relationship building and contributed to a low trust

environment. Participants reflected that conflicts between individuals needed to be

managed or addressed early. Otherwise, this leads to an environment of low or no

trust and the whole work programme suffers. Second, participants also mentioned

that expectations and vision were not clearly communicated to the team members.

> *…the leadership at the DHB and the leadership at the PHO and individuals*
>
> *didn't necessarily have a good working relationship. That would have an*
>
> *impact on how well the Alliance functions, because I guess it's hard for people*
>
> *to speak up and have good constructive conversations if key leaders at the*
>
> *table aren't always behaving in that way. (P7)*

Culture

The CFIR considers culture as a stable, less tangible and socially constructed idea

with the existence of varying definitions. Broadly, it is a given organisation's norms,

values, and basic assumptions.[10] The governance group (ALT) was expected to

facilitate the implementation of the strategy. However, participants highlighted an

existing siloed organisational culture between the DHB and the PHO and between

primary and secondary care providers characterised by a low level of trust and poor

working relationships. The ALT mechanism largely failed to bridge these institutional

silos. The silo mentality did not provide opportunities for joint working, collaboration

and shared decision making. Related to this, the primary and secondary care sectors

had distinct corporate cultures, different scopes of practice and funding models.

There was no mechanism in place to facilitate the collaboration between these

sectors.

> *Southern health system is pretty dysfunctional in terms of how the two parts of*
>
> *the health system [the hospital and primary care] work together. There is very*
>
> *little working together between hospital and general practice and community*
>
> *care here. That is been historically the case here, and then at the*

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management level, it became complex and confrontational. You cannot make

a change in a health system unless there is trust and confidence between the

players. (P6)

<u>Implementation climate</u>

This refers to the collective influence of organisations' policies and practices to

promote effective implementation.[29] Key issues around the implementation climate

that were not appropriately addressed were compatibility and relative priority.

Regarding compatibility, some of the elements of the strategy appeared to conflict

with the best interests of some health providers. Participants highlighted that there

would be negative financial and workforce implications for general practices if they

were integrated into the community health hub model of care, which aimed to move

care from hospitals to communities. Therefore, there was a need to figure out such

conflicts and competing priorities and align the process to implement the strategy

successfully.

> *There are different drivers for behaviours which are easy to point out, but*
>
> *given that New Zealand is configured in a model of private enterprise*
>
> *delivering primary care and public sector delivering secondary care how do*
>
> *you create solutions and incentives that recognise those very real needs that*
>
> *are different? We have to recognise that the model needs to address those*
>
> *financial incentives and disincentives in a way that makes it to all players.*
>
> *Moving forward in the health system, we have to figure out how we can get*
>
> *processes aligned, recognising there are different competing priorities. (P8)*

Regarding the relative priority of this work, key project leaders had to do this

strategic work on top of their day job for the organisation they worked for (DHB or

PHO). There were no dedicated resources and team to lead individual projects. If

something important and urgent came up, this had to be prioritised. The impact of

COVID-19 from 2020 also impacted their capacity to make this work a priority. So

overall, PCSS implementation had to take second place to operational matters.

> *…when things got really busy and other things came over the top like Covid,*
>
> *so often things would get delayed and the implementation of the strategy was*
>
> *nice to do and went on the back burner. (P1)*

Implementation readiness

The CFIR defines implementation readiness as an organisational commitment to its

decision to implement an intervention. Two sub-constructs were important here:

leadership engagement, and available resources.[10]

Leadership

Leadership engagement was about leaders' commitment, involvement, and

accountability for the implementation.[10] We identified leadership commitment and

leadership stability as sub-categories of this construct. Participants perceived that a

high level of commitment was needed from the leadership of both organisations to

resourcing and joint working.

Participants highlighted a need for a shared vision and goal, and for all this to

happen, the working relationship of key people in both organisations required expert

relationship facilitation. Participants also felt that regardless of any structures, it was

essential to have influential leaders who could work together, identify and devote

resources and develop trust and confidence.

You don't need an Alliance to implement the primary community care

strategy. You don't need a DHB and a PHO to implement the primary

community care strategy. What you need is people who are in positions of

influence and leadership to agree, work together, poll their resources, develop

trust and confidence to do the work. (P6)

Another issue was with leadership stability. With frequent changes in the key

personnel related to strategy implementation, particularly in the DHB, there was a

loss of institutional knowledge and momentum of individual workstreams and overall

strategy implementation, which was frustrating for staff tasked with delivering the

workstreams..

From an implementation perspective, it was incredibly frustrating for people at

the grassroots level when there's such a high number of personnel changes

at the top and everyone wanted a different way of doing things. I feel like

there was a bit of a stumbling block to the implementation. (P10)

Resources

Poor resourcing was a major barrier, as many workstreams were not adequately

resourced. Projects with dedicated resources and a change team were successful in

meeting their objectives. For example, the Health Care Home was relatively

successful with dedicated resources, leadership and project management of the

PHO.[30] In contrast, Community Health Hub and Locality Networks had no such

resource in place and competing priorities, which was reflected in slow progress.

Participants were critical of assumptions that care could be shifted from the

secondary to the primary sector without extra funding and human resources.

…it [the Strategy] generated a lot of expectations and a lot of work, which were not adequately resourced. What we ended up with was a whole lot of things on the action plan, which didn't have a lot of resources allocated to them. And it was to be done on top of your day job type thing. And it became very difficult. (P2)

… if you stopped doing something in a hospital space, how does the primary care workforce just do it magically for no extra cost? So in other places in the country where things that are moving out of the hospital and to the community, there's a funding stream for that. But trying to get those funding streams in place in Southern has been so difficult…(P6)

The main reason participants offered for poor resourcing was that the ALT team members representing the SDHB and the PHO could not agree on the distribution and assignment of available resources.

While the ALT was supposed to facilitate SDHB and PHO support for the PCCS implementation, they had no authority and no mandate for decision-making and budget/resource allocation so they only could advise instead of directing.

So the Alliance didn't have any authority. They had all authority over being able to advise [as opposed to direct] the PHO and the DHB. So they don't have any formal mandate and they don't have any delegation [delegated authority]. There's no budget, but they do advise us on things in relation to primary community strategy but it wasn't decision-making as such. So it was almost like an extra layer. (P1)

The perceived funding crisis in the health system, with large SDHB budget deficits and so "no spare money," also played a role, as did a perceived tension over which organisation should hold budgetary authority.

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Implementation process

The implementation process includes four interrelated activities essential for successful implementation: planning, engaging, executing, and reflecting and evaluating.[10] During the strategy development, implementation was planned to occur in stages mainly due to the financial cost to the DHB and PHO and associated workforce implications. In hindsight, it was evident that there was not enough preparation to implement the strategy. Participants identified a number of issues across all its four processes, which are discussed below.

<u>Planning</u>

Participants mentioned that the strategy and its action plan included the list of activities (what components) but lacked details on how to implement the strategy. There was a lack of clarity around roles and responsibilities, mandate and scope in some of the essential components of the strategy (community health hub and Locality networks). There was a strategy and action plan, but participants would have appreciated a detailed implementation plan which provided enough direction for successful execution. A need for a single project management approach with a shared vision and goal was also highlighted.

> …*there was no roadmap for implementation. It was only a very high-level set of things in the action plan. (P4)*

> *It's [implementation of the strategy] not just like turning on a tap and suddenly everything is in place. We ended up with a strategy, a framework that was to be progressively implemented by Southern DHB and WellSouth. It was a strategy that was always going to be implemented in stages and progressively partly because of financial cost to both the DHB and the WellSouth, but more*

importantly, because of the change in workforce practice that was a

consequence of the strategy. (P5)

<u>Engagement</u>

Engaging with implementation leaders, stakeholders and community people,

including vulnerable groups is vital for the successful adoption of the change process

and to ensure the needs and interests of various groups are addressed.[10] The PCCS

required engagement with stakeholders while developing the strategy and its

implementation. As mentioned earlier, the strategy implementation was complex

requiring engagement with multiple stakeholders to get buy-in and ensure successful

implementation.

Mixed feelings were expressed about engagement while developing the strategy.

Different stakeholders such as GPs, Māori (iwi groups), the Clinical Council and

community groups across Otago and Southland were consulted. However, a few

participants highlighted that more community consultation could have been

conducted.

Participants also perceived that the strategy was not developed by following a

bottom-up process engaging with staff from SDHB and the PHO. It was felt that the

process could have been better with more robust engagement with staff and leaders

of both organisations.

… the primary community care strategy was written with the help of

consultants, and so there was an element of it not being really well built from the

ground up. (P6)

<u>Executing</u>

This component relates to carrying out or accomplishing the implementation according to plan. Most of the participants agreed that the strategy's implementation had not been realised as per the initial vision of the strategy. Overall, they perceived that except for a few projects, the execution component could have benefitted from greater planning. As mentioned above, the success of the execution was hampered by the lack of resources, clarity in scope and structure of the projects and a detailed implementation plan. Furthermore, the projects' inter-dependencies were not fully understood at the outset, so the implementation of headline activities (models of care) remained an isolated effort. As a result, there were variations in the progress of elements of the action plan. The Health Care Home was seen as having been successfully implemented. In contrast, with no resources and no detailed plan, Community Health Hub and Locality Networks implementation progressed slowly.

For the different components, it [execution] is different. You know the Health Care Homes have gone really, really well. Community Health Hub has really struggled. The locality networks need some more energy. (P8)

It's an ongoing theme in health and in the public sector, which is we've got fantastic ideas and we're good at analysing the problem and we're good at knowing what we need to do, but we're not so good at the implementation piece. (P7)

<u>Reflecting & Evaluating</u>

Reflection and feedback about the progress and quality of implementation is an important way to promote shared learning and improvements along the way. There was good reporting to the Alliance team regarding updates about some workstreams (primary maternity, Health Care Home, Home Team etc.). However, participants mentioned that their reports to the broader programme group appeared to be more

of a compliance activity rather than an improvement. Participants suggested a need for an overall quality improvement approach in place for the whole strategy.

There was a lack of an overall quality improvement approach or method. How about using a continuous quality improvement approach across the Alliance structure, down into the individual projects? (P4)

Participants felt that the feedback mechanisms could have been more robust and it was difficult for them to contribute to decision making at the governance level.

Some of the instruction coming from ALT was a little bit hard to understand. The SIC [Service Improvement Committee] group did feel a little bit unsure about what expectations were or what feedback was required and didn't necessarily feel that they were being heard. (P2)

Participants highlighted that there was a lack of a clear structure and performance measurement framework to measure and track the progress for many strategy objectives.

DISCUSSION

Summary of principal findings

Our findings provide insights into the experience of an Alliance and senior health professionals of the overall implementation of the PCCS which aimed to promote integration between primary and secondary care. We found that the large number of strategy action plans and interdependencies of activities made implementation of the strategy complex. Communication and relationships between individuals and organisations were identified as an important factor for joint and integrated working, but needed a more favourable environment than that of the pre-existing

organisational silos. Key elements of a positive implementation climate were not

adequately addressed to better align the interests of health providers, and there

were multiple competing priorities for the project leaders. A perceived low level of

commitment from the leadership of both organisations to joint working and

resourcing indicated poor organisational readiness. The combination of no detailed

implementation plan with a single project management approach, ambitious targets,

poorexecution of the plan, the lack of a clear performance monitoring framework,

and an inadequate feedback mechanism demonstrated several gaps in the

implementation process.

Strength and limitations

We used the CFIR to understand the implementation of the PCCS in the NZ

southern health system context. To our knowledge, our study adds to a small body of

research using implementation science theory (CFIR) to study health system

transformation initiatives focused on integration of health care using an alliancing

governance model. Using the CFIR, the study was able to unpack the black box of

complex relationships between the intervention, its context and the implementation

process.

As in other studies,[31-33] the CFIR strengthened the evaluation by offering

comprehensiveness, capturing the dynamics of the implementation process'

complexity, systematising the analysis process and helping to tell the story by

organising and producing rapid actionable evaluation findings. The collaborative

nature of the research was also helpful in facilitating the sharing of findings and

feedback to the Southern health system. We used a rapid analysis approach[25 27 34]

that was helpful in providing prompt feedback to the local health system. The

limitation of using such a rapid approach was that we did not use detailed

transcription and a line-by-line open coding process, which might risk missing

nuances of data. However, we did use automated transcriptions generated by Zoom

and listened to audio/video recordings several times to complete field notes and help

categorise participant responses across themes. While the use of the CFIR helped

us to illuminate contextual factors and understand the interplay between the context

and implementation process of the complex strategy intervention, it would be helpful

to identify how different constructs identified by the CFIR interacted to produce

certain outcomes. Although beyond the scope of our study, one possible approach

used previously[35] could be to combine the CFIR with a realist evaluation informed

approach. This would enable CFIR identified constructs to be used to identify

mechanisms for how different contextual conditions generate outcomes.[36]

Comparison with existing literature

As in our findings, other studies in the UK and the US on alliancing also highlighted

some of the common facilitators and barriers and lessons learnt.[19 21] Experience of

US Accountable Care Organisations emphasised the importance of having realistic

expectations, finding ways to develop trust, managing conflict and making a

collective decision, and focusing on leadership.[21] Our findings echo previous studies

in the UK about similar health system transformation initiatives, most notably

Vanguard programmes.[19 20 37-39] Vanguards were local pilot sites established across

England to develop and deliver NHS initiated new care models to coordinate care

across primary care, community services and hospitals.[19 20] These studies

highlighted the need for realistic expectations, for local capacity and capability

building, the importance of developing relationships, strong leadership, robust data

and analytics and managing time constraints.[19 20 37-39]

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In NZ, previous studies into alliancing aimed at integrating primary and secondary care have also identified factors key to successful implementation. [9 18 23 40] The Canterbury initiative of delivering integrated health and social care using alliancing highlighted a number of key enablers: the development of a clear and shared strategic vision, continuity of senior leadership, staff engagement, a continuous quality improvement approach and development of new ways of contracting for health services.[18 40] Another NZ evaluation of pilot initiatives using alliancing to promote primary and secondary care integration reported overly ambitious plans, competing priorities, inadequate attention to organisational culture, and lack of timely funding support as barriers to implementation.[23]

Implications for health policy and practice

A number of key lessons and potential solutions useful for future health policy and practice that have emerged from this implementation evaluation are summarised in Table 1. While contexts may be different, previous health system transformation initiatives in NZ and internationally also offer valuable lessons relevant to integrated care through alliancing.[18] It is noteworthy that while the alliancing approach in the NZ health sector was initiated more than a decade ago[12 18] the lessons from the Canterbury initiative have not been fully applied. This suggests a disconnect between research evidence and its implementation. Hence, attention should be given to building what is known from research evidence into implementation plans.

The NZ government's health sector reforms, enacted in mid-2022, focus on addressing the health system is facing, including service fragmentation.[8] The reforms emphasise the need for better integration between primary and secondary care.[8] The reforms create a single national health service through a new structure called Health New Zealand and have a greater emphasis on working with local

Table 1 Key lessons learnt and potential solutions

Key findings	Potential solutions
• The structure put in place (alliancing) itself does not bring about joint working. Relationship building is key.	• Invest in nurturing and maintaining relationships between individuals and institutions.
• An expectation of being able to deliver new models of care without provision of dedicated resources is false.	• Ensure availability of adequate resourcing and develop agreement regarding the distribution of available resources.
• A committed leadership to resourcing and joint working is important.	• Ensure a leadership who leads change by sharing common vision and goals, developing teamwork based on trust, relationship and open communication.
• It is hard for project leaders to lead the strategic work on top of their day job.	• Ensure a dedicated change agent maps out the implementation.
• Lack of detailed plan (clarity around roles and responsibilities and scope) and interdependencies made the implementation roadmap vague.	• Acknowledge complexity and that transformation of this kind takes time. • Develop a detailed and achievable implementation plan with a clear project management approach. • Ensure robust staff and stakeholder engagement.
• A robust feedback mechanism is needed for quality of implementation and to promote shared learning.	• Develop an overall quality improvement approach for the whole strategy and performance measurement framework to track the progress of strategy's objective.

communities through geographical locality networks with aims of integrating primary and secondary care.[8 41 42] Alliance South had been in abeyance since the announcement of the new health system reforms in April 2021[42] and, at the time of writing, the details of the structure of governance and service delivery at the local level were in development. Regardless of the new configuration of the NZ health

system, we consider that the lessons learnt from this implementation evaluation will

be instrumental for planning and implementing future initiatives at the local level.

CONCLUSION

Using the CFIR, this study identified factors for the successful implementation of the

PCSS using an alliancing approach in Southern NZ. During the evaluation period,

wide-ranging health sector reforms in NZ were announced. Those leading the

reforms could consider the key lessons from this study to strengthen integrated

primary and community care delivery, which are core reform goals. While the context

may be different, with policymakers internationally increasingly looking to integrate

care, the findings from the study have particular relevance. They provide

fundamental lessons, based on experience, that can help build better governance

and management systems.

Word count: 4686

SUPPLEMENTARY FILES

Supplementary File 1: Interview Topic guide (.pdf)

Supplementary File 2: COREQ-32 reporting checklist. (.pdf)

ACKNOWLEDGEMENTS

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DATA SHARING STATEMENT

Full de-identified interview transcripts will not be shared. Informed consent, in line with the approving ethics committee, only allows for the use of de-identified extracts within research reporting and writing to maintain participants' privacy based in a defined regional area and population, thus making their identification with full transcripts more likely.

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Interview Topic Guide

- Brief introduction and thank you for your time

- Introduce self

- Highlight specific points from the information sheet:

   o study details/aims

   o confidentiality and procedure

- Explanations of the use of study data

- Consent to audio-record

- Collect written consent

Areas to explore with the alliance leadership team (ALT) members and service leads

1) **Your role?**

   Prompts:

   o What is your current role?

   o How long have you been working in your current role?

   o Your role in primary and community care strategy (PCCS) implementation?

   o Can you tell me how did you become involved with the PCCS?

   o Is there a specific initiative (e.g. individual workstreams) that you are involved with?

2) **Understanding of PCSS**

   Prompts:

   o What do PCCS initiatives mean to you?

   o What were your expectations of the PCCS initiatives?

3) **Governance structure and decision making**

   o What has been your experience of working in/with ALT?

   o How are the two organisations—SDHB and WellSouth PHO—working jointly for PCCS implementation?

   o What is the structure of communication and decision making?

   o How well has the vision and goal of PCCS been communicated to frontline staff?

   o Overall, what is working well, and what is not?

4) **Implementation of PCCS**

   What are the key areas of focus of PCCS at the governance level?

   Prompts:

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- o How are the supporting activities (enabling structure) implemented to help the implementation of individual workstreams/care models?
- o How is ALT supporting the implementation of individual workstreams/care models?
- o How satisfied are you with the PCCS implementation process? Please describe.
- o What are the good and less good things about the PCCS roll-out process?
- o How confident you are that the vision of the PCCS will be realised?
- o How are the individual workstreams related?
- o What are the impacts of Covid-19 on the implementation of the strategy?
- o Overall, what is working well, and what is not?

5) Equity
- o What has been done for Māori and other high need groups as part of the strategy implementation?
- o How is the governance/ALT team monitoring progress towards equity in PCCS goals and outcomes?

6) What do you see as the benefit of the PCSS intervention? Please explain.
   Prompts:
- o Could you tell me how you think the PCCS has made a difference in coordination and integration?
- o What roles did PCCS play in improving patient experience and equity in outcomes? How?
- o To what extent do you think the above changes are the result of actions taken through the strategy?

7) Next step
- o Overall, what do you think of the PCCS?
- o What should future PCCS initiatives do differently?
- o How could the implementation aspects be improved?

Conclusion

Is there anything more you would like to add? Thank you so much for your participation in the interview. Your opinions are very valuable to the study.

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Supplementary File 2

Consolidated criteria for Reporting Qualitative research (COREQ) 32 item Checklist

Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care* 2007;19(6):349-57.

Domain	Item number	Comment	Reported on page number or not applicable (N/A)
Domain 1: Research team and reflexivity			
Personal Characteristics			
Interviewer/facilitator	1	The Research Fellow (Dr Gagan Gurung) conducted the interviews.	7
Credentials	2	All four research team members have PhD.	N/A
Occupation	3	GG – Research fellow, CJ – Associate professor, RG – professor, TS – professor.	1
Gender	4	Three male-identifying and one female-identifying researchers (interviewer, male-identifying).	N/A
Experience and training	5	All four research team members have extensive experience in conducting qualitative health research.	N/A
Relationship with participants			
Relationship established	6	It was a collaborative research project between the University and the local health system. Therefore, the research fellow and the broader research team knew some of the participants prior to the research. GG had not met with six participants prior to the study.	N/A
Participant knowledge of the interviewer	7	The interviewer introduced himself to participants stating he was a health services researcher, described the research team, its funding, the purpose of the project and answered any questions	N/A

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		participants may have had about the project and those involved in it.	
Interviewer characteristics	8	The interviewer was aware of the health system in New Zealand.	N/A
Domain 2: study design			
Theoretical framework			
Methodological orientation and Theory	9	Rapid thematic analysis using the CFIR.	7
Participant selection			
Sampling	10	Purposive sampling was used.	7
Method of approach	11	Participants were approached by email.	N/A
Sample size	12	Eleven.	8
Non-participation	13	Two key informants did not respond to the invitation to participate, however, no person directly declined to take part, nor did anybody drop out once agreeing to take part.	NA
Setting			
Setting of data collection	14	Participants could determine where the interview took place. Nine interviews were conducted by Zoom and two in person in their office.	N/A
Presence of non-participants	15	None.	N/A
Description of sample	16	Fully described in the results section.	8
Data collection			
Interview guide	17	The interview guide had a number of key questions and potential prompts.	Supplementary file 1
Repeat interviews	18	No.	NA
Audio/visual recording	19	All interviews were audio-recorded.	7
Field notes	20	Yes, following each interview, the interviewer wrote brief field notes covering the participants' main ideas and the interviewer's reflections.	7
Duration	21	Interview times varied between 30 to 45 mins.	7
Data saturation	22	Not applicable.	NA
Transcripts returned	23	No.	NA
Domain 3: analysis and findings			
Data analysis			

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Number of data coders	24	The interviewer coded the data and codes were discussed regularly with all members of the interview team.	7
Description of the coding tree	25	No. However, coding was informed by research questions, interview guides and CFIR.	7
Derivation of themes	26	The themes were derived from CFIR.	7
Software	27	We did not use software to manage data. We used MS word and an excel spreadsheet for coding and analysis.	7
Participant checking	28	No	NA
Reporting			
Quotations presented	29	Yes. Quotations are presented to illustrate findings and identified in a manner protecting participants' confidentiality.	8-19
Data and findings consistent	30	There was consistency between the data and the findings.	8-19
Clarity of major themes	31	Yes, there is clarity of major themes.	
Clarity of minor themes	32	Yes, minor themes (CFIR constructs) are clearly identified, and they are related to major themes.	8-19

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Lessons learnt from the implementation of new models of care delivery through alliance governance in the Southern health region of New Zealand: A qualitative study

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Lessons learnt from the implementation of new models of care delivery through alliance governance in the Southern health region of New Zealand: A qualitative study

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ABSTRACT

Objectives: To explore the process of implementation of the primary and community care strategy (PCCS) (new models of care delivery) through alliance governance in the Southern health region of New Zealand (NZ).

Design: Qualitative semi-structured interviews were undertaken. A framework-guided rapid analysis was conducted, informed by implementation science theory - the Consolidated Framework for Implementation Research (CFIR).

Setting: Southern health region of NZ (Otago and Southland).

Participants: Eleven key informants (Alliance Leadership Team members and senior health professionals) who were involved in the development and/or implementation of the strategy.

Results: The large number of strategy action plans and interdependencies of activities made implementation of the strategy complex. In the inner setting, communication and relationships between individuals and organisations were identified as an important factor for joint and integrated working. Key elements of a positive implementation climate were not adequately addressed to better align the interests of health providers, and there were multiple competing priorities for the project leaders. A perceived low level of commitment from the leadership of both organisations to joint working and resourcing indicated poor organisational readiness. Gaps in the implementation process included no detailed implementation plan (reflected in poor execution), ambitious targets, the lack of a clear performance measurement framework and an inadequate feedback mechanism.

Conclusions: This study identified factors for the successful implementation of the PCSS using an alliancing approach in Southern NZ. A key enabler is the presence of

a stable and committed senior leadership team working through high trust

relationships and open communication across all partner organisations. With

alliances, partnerships and networks increasingly held up as models for integration,

this evaluation identifies important lessons for policymakers, managers and services

providers both in NZ and internationally.

Abstract word count: 281

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STRENGTHS AND LIMITATIONS OF THIS STUDY

> ➢ This study contributes to a currently small body of research using implementation science theory (CFIR) to study new models of care delivery using an alliancing governance model.
>
> ➢ The use of the CFIR helped us to illuminate contextual factors and understand the complex interplay between the context and implementation process of the strategy intervention.
>
> ➢ The study's participants had a governance and senior managerial role and were directly involved in developing and/or implementing the PCCS.
>
> ➢ The study was conducted in partnership with the local health system, which was helpful in facilitating the sharing of findings and feedback to the Southern health system.
>
> ➢ Use of a rapid analysis approach was helpful in providing prompt actionable feedback to the local health system, but it might risk missing nuances of data.

INTRODUCTION

Health systems worldwide and in New Zealand (NZ) are facing a number of challenges, which are likely to intensify in the future.[1] [2] A pressing challenge is the need for better integration and coordination of services.[1-6] Reducing fragmentation and achieving integration is a key response and, in NZ, a goal of recent health policy and system reforms.[1, 4, 7]

An approach used in NZ at the local health system level from 2013 to 2021 to promote the integration of health care across primary and secondary care was that of alliancing.[8] Alliances bring all key providers within a local health system together in the process of governing health care design and delivery, with a focus on building whole-of-system service designs.[9, 10] Derived from the construction industry, this concept has been used in health care in NZ and other countries such as the UK and Australia.[11, 12] Alliancing promises a high trust, low bureaucracy way of working between organisations.[11, 13] Ideally, members of an alliance should have the capacity to bring resources to the alliance table so decisions can be implemented, and to put aside sectoral interest to work collaboratively towards a joint goal and take a whole-of-system approach to planning and decision making.[9, 11] The evaluations of past initiatives developed and implemented through an alliance approach in NZ and via similar initiatives (e.g. accountable care organisations in the US and Vanguard programme in the UK) internationally show some promise in terms of improving integration, although it needs to be noted that the health system context in which such initiatives are being implemented is often both complex and changeable.[9, 14-16]

In the Southern health region of NZ (see Box 1) the Southern District Health Board

(SDHB) and WellSouth Primary Health Organisation (PHO), working together

through a formal contractual alliance (Alliance South), developed a Primary and

Community Care Strategy (PCCS) (see box 2) "to do things differently in primary and

community care."[17] The strategy, launched in 2018, reflected the commitments of

the two alliance partners and priorities for improving primary and community care in

the Southern region. Priority action areas for the delivery of the strategy were new

models of care workstreams (e.g. Health Care Home, Home Team, Community

Health Hub, Locality network) and enabling infrastructures (e.g. governance and

leadership, workforce capability and culture, funding and contracting).

Implementation of the PCCS was carried out by Alliance South with joint governance

from leaders in both the SDHB and PHO through the Alliance Leadership Team

(ALT). The strategy's action plan included establishing a culture of continuous

improvement supported by the monitoring and rapid evaluation of new initiatives.[18]

Box 1 NZ Southern Health System

During the period of research, the NZ Southern health system comprised a DHB, being the largest geographic region out of 20 DHBs across the country. There was a single PHO in the region. The DHB and PHO served just over 300,000 people with 40% living rurally. The DHB had the overall responsibility for planning and funding in the region and owned public hospitals. The PHO received funding from the DHB to support primary care and affiliated general practices. The region has two main hospitals and six small regional hospitals. In mid-2022, DHBs were disestablished with functions absorbed into a new national body, Health NZ, as part of major health reforms.

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Box 2 The PCCS: Vision and strategic goals

The PCCS provides a vision for primary and community care in the Southern health system. It recognises the challenges the health system faces in responding to the changing needs of the community, increasing pressure on the health workforce, and the responsibility to provide equitable access to services across the large and diverse district.

The Strategy and Action Plan was developed jointly by SDHB and WellSouth, with support from the Community Health Council, University of Otago and others, reflecting their commitment to working together to improve the contribution of primary and community care to the wider Southern health system.

The vision for primary and community care is '*excellent primary and community care that empowers people in our diverse communities to live well, stay well, get well and die well, through integrated ways of working, rapid learning and effective use of technology.*'

The strategy has strategic goals to support the vision focusing on empowering consumers, whanau and communities; integrating care across primary, community and secondary care; and a technology enabled health system.

Priority action areas for the delivery of the strategy set out in the action plan were new models of care/workstreams and enabling infrastructures.

Key models of care / workstreams include:

Health Care Home implementation: A patient-centred approach which aims to combine the traditional core values of general practice with building the capacity and capability of general practice through the development of new roles, skills, and ways of working.

Community Health Hubs implementation: Establishing facilities where secondary outpatient services, advanced primary care services, at least one General Practice operate in the Health Care Home model, diagnostic services and other independent and community based healthcare providers work together in an integrated way.

Locality Network implementation: Advisory networks made of health professionals and consumers which help to prioritise and plan health services to better align with the needs of local communities.

Home Team (Rapid response and enablement service): A patient centred initiative which aims to help support patients at home via an inter-professional team after leaving the hospital, or a support service at home to avoid to hospital admission. The target group is elderly people.

Consumer Led Integrated Care: A programme of care to people with long term conditions using care planning and risk stratification to access more care and provide greater control over managing patient health conditions.

The enabling infrastructures include governance and leadership of the system, health and business intelligence to support planning, funding and delivery; workforce capability and culture; and funding and contracting arrangements to support integrated ways of working.

In 2019, the University of Otago and the Alliance South received funding to evaluate

the implementation of the PCCS as a University-Health Sector collaborative project.

This article reports on an evaluation that aimed to explore PCCS implementation at

the alliance governance level. More specifically, the evaluation aimed to identify

facilitators or/and barriers to the successful implementation of the PCCS using a

commonly used implementation science theory: the Consolidated Framework for

Implementation Research (CFIR)[19, 20] (see Box 3).

Box 3 CFIR

The CFIR is a theoretical framework that provides a structure for identifying facilitators and barriers to implementation.[19] It offers a comprehensive, standardised list of constructs that allow researchers to identify variables that are most relevant to a particular intervention. The CFIR comprises five domains: intervention characteristics (eight constructs), outer setting (four constructs), inner setting (five constructs), characteristics of the individuals involved (five constructs) and the process of implementation (four constructs). The CFIR has been widely used to inform qualitative process evaluations across a range of complex interventions, including health care redesign, in health care systems.[20]

METHODS

Design, study setting and sampling

This research used qualitative methods within a pragmatic paradigm, which has a

focus on producing actionable knowledge.[21] In terms of researcher positionality

three members of the research team were academic researchers external to the

alliance (GG, TS and CJ), one researcher had previously chaired the alliance ALT

(RG). Semi-structured interviews were conducted between March 2021 to August

2021 with key informants who were sampled purposively. These constituted the

members of the ALT, including a former senior member of the SDHB involved in

commissioning the PCCS and the service project leads of the workstreams (see Box

3). Interviews were conducted either by video conferencing (Zoom) or face-to-face.

Interviews varied in length from 30 to 45 minutes. Written informed consent was

obtained from all participants.

Data collection

A semi-structured interview guide (Supplementary file 1) was used for interviews based on the PCCS goals, a literature review and discussion within the research team. The topic guide covered the main areas of governance team focus (structure, capability, and internal relationships), implementation and monitoring of the strategy, perceived impact of the strategy and barriers and facilitators to implementation. Revision and refinement of the topic guide was undertaken as the interviews progressed.

Data analysis

All interviews (undertaken by GG) were audio and/or video recorded. Field notes for all interviews were taken, which were expanded by listening to the audio recording and reading automatic transcripts obtained from Zoom.[22, 23] We used Gale and colleagues' framework-guided deductive rapid analysis approach,[24] which was specifically developed for use with the CFIR.[24, 25] First, a template summary table was developed in MS Word guided by study research questions and topic guide questions (GG, TS, CJ). This template table was used to summarise individual interview field notes. Next, a matrix in MS Excel by participant type was prepared to chart and consolidate the interview responses in a matrix using the information from the summary table. This process of charting data in a matrix[26] was helpful in comparing and contrasting the findings within an individual interview across the different CFIR domains, constructs and subconstructs and between the different participants. This allowed us to categorise the facilitators and barriers of PCCS implementation.

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In order to ensure evaluative rigour we used the consolidated criteria for reporting

qualitative research (COREQ)[27] to structure reporting of the methods and the

findings (Supplementary file 2 provides more detail relating to reflexivity, study

design and analysis).

Patient and Public Involvement

No patients or the public were involved in the design of this study.

RESULTS

We interviewed 11 participants (five female and four male). Five were ALT members

(chief executive of SDHB, chief executive of Well South PHO, Chief Māori Health

Strategy & Improvement Officer, a district Mayor, and a community representative).

Six were other key informants based on their involvement in the development or

implementation of the strategy (former chair of the ALT, former commissioner of the

SDHB, three service project leaders of the workstreams – one from the PHO and two

from the SDHB - and the executive director for the primary and community care

strategy).

A number of implementation issues were identified in three CFIR domains

(Supplementary file 3): intervention characteristics, inner setting and implementation

process (See Box 4).

Box 4 CFIR domains and constructs.

I. Intervention characteristics
Intervention Source
Evidence Strength & Quality
Relative Advantage
Adaptability
Trialability
Complexity
Design Quality & Packaging
Cost

II. Outer setting
Patient Needs & Resources
Cosmopolitanism
Peer Pressure
External Policy & Incentives

III. Inner setting
Structural Characteristics
Networks & Communications
Culture
Implementation Climate
Readiness for Implementation

IV. Characteristics of individuals
Knowledge & Beliefs about the Intervention
Self-efficacy
Individual Stage of Change
Individual Identification with Organization
Other Personal Attributes

V. Implementation Process
Planning
Engaging
Executing
Reflecting & Evaluating

Domains and constructs used in this study are in bold.

Implementation characteristics

Complexity

Complexity is defined as the perceived difficulty of implementation, which is reflected

by duration, scope, radicalness, disruptiveness and intricacy.[19] Participants

considered the PCCS a complex intervention and challenging to implement in a short timeframe. The sheer magnitude of the action plan required the integration of primary and secondary care. Related to this, some objectives in the strategy were less tangible without explicit activities and milestones.

> *[The] strategy and action plan is a massive piece of work. …it took a long time to unpack and figure out exactly who was supposed to be responsible for doing different things within the strategy and action plan, because it had such a massive span. It wasn't just one department, it's like all of primary and community, and then also needed buy-in from secondary to actually make it work. So it was a whole of system approach that required everyone to get on board. (P10)*

Another source of complexity was related to the interdependencies of the regional health context. For example, the successful implementation of the Community Health Hub depended upon the development of the new Dunedin hospital, a significant project located in the regional metropolitan centre. Therefore, for the success of such projects, there was a need to work out the interdependencies, which appeared to be missing from the strategy implementation.

> *…if I think about [Community] Health Hubs we've got the things that are going to impact on the success of Health Hubs are outside of the strategy. So things like the development of the new Dunedin hospital, where there is a whole stream of work around, what's going to exist outside of the new Dunedin hospital, and what's going to be in an ambulatory care centre and who's responsible for facilitating that is not clear… (P1)*

Inner setting

The 'inner setting' is defined as the structural and cultural contexts through which the implementation process occurs.[19] Networks and communications, culture, implementation climate and implementation readiness were the constructs identified in this domain.

<u>Networks and communications</u>

The CFIR defines this construct as the nature and quality of social networks, and the nature and quality of formal and informal communications within an organisation.[19] Two sub-themes were identified in this construct: relationships between individuals, and communication of vision and mission. First, there was a mechanism in place for the ALT members to meet and communicate regularly. Good working relationships at all levels were considered an essential factor in implementing the strategy activities that needed integrated ways of working. However, participants mentioned that relationships between individuals, especially at the higher level, were problematic. This was seen as adversely affecting the quality of communication, hampering open discussion, teamwork, collaboration and feedback. Personalities, personal agenda and power politics, especially at the senior leadership level, were perceived to be conflictual, a barrier to relationship building and contributed to a low trust environment. Participants reflected that conflicts between individuals needed to be managed or addressed early. Otherwise, this leads to an environment of low or no trust and the whole work programme suffers. Second, participants also mentioned that expectations and vision were not clearly communicated to the team members.

> *…the leadership at the DHB and the leadership at the PHO and individuals*
>
> *didn't necessarily have a good working relationship. That would have an*

impact on how well the Alliance functions, because I guess it's hard for people

to speak up and have good constructive conversations if key leaders at the

table aren't always behaving in that way. (P7)

Culture

The CFIR considers culture as a stable, less tangible and socially constructed idea
with the existence of varying definitions. Broadly, it is a given organisation's norms,
values, and basic assumptions.[19] The governance group (ALT) was expected to
facilitate the implementation of the strategy. However, participants highlighted an
existing siloed organisational culture between the DHB and the PHO and between
primary and secondary care providers characterised by a low level of trust and poor
working relationships. The ALT mechanism largely failed to bridge these institutional
silos. The silo mentality was not conducive to joint working, collaboration and shared
decision making. Related to this, the primary and secondary care sectors had distinct
corporate cultures, different scopes of practice and funding models. There was no
mechanism in place to facilitate the collaboration between these sectors.

> *Southern health system is pretty dysfunctional in terms of how the two parts of*
>
> *the health system [the hospital and primary care] work together. There is very*
>
> *little working together between hospital and general practice and community*
>
> *care here. That is been historically the case here, and then at the*
>
> *management level, it became complex and confrontational. You cannot make*
>
> *a change in a health system unless there is trust and confidence between the*
>
> *players. (P6)*

Implementation climate

This refers to the collective influence of organisations' policies and practices to promote effective implementation.[28] Important issues around the implementation climate that were not appropriately addressed were compatibility and relative priority.

Regarding compatibility, some of the elements of the strategy appeared to conflict with the best interests of some health providers. Participants highlighted that there would be negative financial and workforce implications for general practices if they were integrated into the community health hub model of care, which aimed to move care from hospitals to communities. Therefore, there was a need to identify and manage such conflicts and competing priorities..

> *There are different drivers for behaviours which are easy to point out, but given that New Zealand is configured in a model of private enterprise delivering primary care and public sector delivering secondary care how do you create solutions and incentives that recognise those very real needs that are different? We have to recognise that the model needs to address those financial incentives and disincentives in a way that makes it to all players. Moving forward in the health system, we have to figure out how we can get processes aligned, recognising there are different competing priorities. (P8)*

Regarding the relative priority of this work, the project leaders had to do this strategic work on top of their day job for the organisation they worked for (DHB or PHO). There were no dedicated resources and team to lead individual projects. If something important and urgent came up, this had to be prioritised. The impact of COVID-19 from 2020 also impacted their capacity to make this work a priority. PCSS implementation had to take second place to operational matters.

…when things got really busy and other things came over the top like Covid,

so often things would get delayed and the implementation of the strategy was

nice to do and went on the back burner. (P1)

Implementation readiness

The CFIR defines implementation readiness as an organisational commitment to its

decision to implement an intervention. Two sub-constructs were important here:

leadership engagement, and available resources.[19]

Leadership

Leadership engagement was about leaders' commitment, involvement, and

accountability for the implementation.[19] We identified leadership commitment and

leadership stability as sub-categories of this construct. Participants perceived that a

high level of commitment was needed from the leadership of both organisations to

resourcing and joint working.

Participants highlighted a need for a shared vision and goal, and for this to happen,

the working relationship of key people in both organisations required expert

relationship facilitation. Participants also felt that regardless of organisational

structure, it was essential to have influential leaders who could work together,

identify and devote resources and develop trust and confidence.

> *You don't need an Alliance to implement the primary community care*
>
> *strategy. You don't need a DHB and a PHO to implement the primary*
>
> *community care strategy. What you need is people who are in positions of*
>
> *influence and leadership to agree, work together, pool their resources,*
>
> *develop trust and confidence to do the work. (P6)*

Another issue was with leadership stability. With frequent changes in the key personnel related to strategy implementation, particularly in the DHB, there was a loss of institutional knowledge and momentum of individual workstreams and overall strategy implementation, which was frustrating for staff tasked with delivering the workstreams.

> *From an implementation perspective, it was incredibly frustrating for people at the grassroots level when there's such a high number of personnel changes at the top and everyone wanted a different way of doing things. I feel like there was a bit of a stumbling block to the implementation. (P10)*

Resources

Poor resourcing was a major barrier, as many workstreams were not adequately resourced. Projects with dedicated resources and a change team were successful in meeting their objectives. For example, the Health Care Home was relatively successful with dedicated resources, leadership and project management of the PHO.[29] In contrast, the Community Health Hub and Locality Networks had no such resource in place and competing priorities, which was reflected in slow progress. Participants were critical of assumptions that care could be shifted from the secondary to the primary sector without extra funding and human resources.

> *…it [the Strategy] generated a lot of expectations and a lot of work, which were not adequately resourced. What we ended up with was a whole lot of things on the action plan, which didn't have a lot of resources allocated to them. And it was to be done on top of your day job type thing. And it became very difficult. (P2)*

… if you stopped doing something in a hospital space, how does the primary care workforce just do it magically for no extra cost? So in other places in the country where things that are moving out of the hospital and to the community, there's a funding stream for that. But trying to get those funding streams in place in Southern has been so difficult…(P6)

The main reason participants offered for poor resourcing was that the ALT team members representing the SDHB and the PHO could not agree on the distribution and assignment of available resources.

While the ALT was supposed to facilitate SDHB and PHO support for the PCCS implementation, they had no authority and no mandate for decision-making and budget/resource allocation so they only could advise instead of directing.

So the Alliance didn't have any authority. They had all authority over being able to advise [as opposed to direct] the PHO and the DHB. So they don't have any formal mandate and they don't have any delegation [delegated authority]. There's no budget, but they do advise us on things in relation to primary community strategy but it wasn't decision-making as such. So it was almost like an extra layer. (P1)

The perceived funding crisis in the health system, with large SDHB budget deficits and "no spare money," also played a role, as did a perceived tension over which organisation should hold budgetary authority.

Implementation process

The implementation process includes four interrelated activities essential for successful implementation: planning, engaging, executing, and reflecting and evaluating.[19] During the strategy development, implementation was planned to occur in stages mainly due to the financial cost to the DHB and PHO and associated

workforce implications. In hindsight, it was evident that there was not enough preparation to implement the strategy. Participants identified a number of issues across all four processes, which are discussed below.

Planning

Participants mentioned that the strategy and its action plan included the list of activities (what components) but lacked details on how to implement the strategy. There was a lack of clarity around roles and responsibilities, mandate and scope in some of the essential components of the strategy (community health hub and Locality networks). There was a strategy and action plan, but a detailed implementation plan which provided enough direction for the execution of the strategy implementation was lacking. A need for a single project management approach with a shared vision and goal was also highlighted.

> …*there was no roadmap for implementation. It was only a very high-level set of things in the action plan. (P4)*

> *It's [implementation of the strategy] not just like turning on a tap and suddenly everything is in place. We ended up with a strategy, a framework that was to be progressively implemented by Southern DHB and WellSouth. It was a strategy that was always going to be implemented in stages and progressively partly because of financial cost to both the DHB and the WellSouth, but more importantly, because of the change in workforce practice that was a consequence of the strategy. (P5)*

Engagement

Engaging with implementation leaders, stakeholders and community people, including vulnerable groups is vital for the successful adoption of the change process

and to ensure the needs and interests of various groups are addressed.[19] The PCCS required engagement with stakeholders while developing the strategy and its implementation. As mentioned earlier, the strategy implementation was complex requiring engagement with multiple stakeholders to secure buy-in and ensure successful implementation.

Mixed feelings were expressed about engagement while developing the strategy. Different stakeholders such as GPs, Māori (iwi groups), the Clinical Council and community groups across Otago and Southland were consulted. However, a few participants highlighted that a broader range of community groups could have been consulted.

Participants also perceived that the strategy was not developed by following a bottom-up process engaging with staff from SDHB and the PHO. It was felt that the process could have been better with more robust engagement with staff and leaders of both organisations.

> *… the primary community care strategy was written with the help of consultants, and so there was an element of it not being really well built from the ground up. (P6)*

Executing

This component relates to carrying out or accomplishing the implementation according to plan. Most of the participants agreed that the strategy's implementation had not been realised as per the initial vision of the strategy. Overall, they perceived that except for a few projects, the execution component could have benefitted from greater planning. As mentioned above, the success of the execution was hampered by the lack of resources, clarity in scope and structure of the projects and a detailed

implementation plan. Furthermore, the projects' inter-dependencies were not fully

understood at the outset, so the implementation of headline activities (models of

care) remained an isolated effort. As a result, there were variations in the progress of

elements of the action plan. The Health Care Home was seen as having been

successfully implemented. In contrast, with no resources and no detailed plan,

Community Health Hub and Locality Networks implementation progressed slowly.

For the different components, it [execution] is different. You know the Health Care Homes have gone really, really well. Community Health Hub has really struggled. The locality networks need some more energy. (P8)

It's an ongoing theme in health and in the public sector, which is we've got fantastic ideas and we're good at analysing the problem and we're good at knowing what we need to do, but we're not so good at the implementation piece. (P7)

<u>Reflecting & Evaluating</u>

Reflection and feedback about the progress and quality of implementation is an

important way to promote shared learning and improvements along the way. There

was good reporting to the Alliance team regarding updates about some workstreams

(primary maternity, Health Care Home, Home Team etc.). However, participants

mentioned that their reports to the broader programme group appeared to be more

of a compliance activity rather than an improvement. Participants suggested a need

for an overall quality improvement approach in place for the whole strategy.

There was a lack of an overall quality improvement approach or method. How about using a continuous quality improvement approach across the Alliance structure, down into the individual projects? (P4)

Participants felt that the feedback mechanisms could have been more robust, and it was difficult for them to contribute to decision making at the governance level.

> *Some of the instruction coming from ALT was a little bit hard to understand. The SIC [Service Improvement Committee] group did feel a little bit unsure about what expectations were or what feedback was required and didn't necessarily feel that they were being heard. (P2)*

Participants highlighted that there was a lack of a clear structure and performance measurement framework to measure and track the progress for many strategy objectives.

DISCUSSION

Summary of findings

Our findings provide insights into the experience of an Alliance and senior health professionals of the overall implementation of the PCCS which aimed to promote integration between primary and secondary care. We found that the large number of strategy action plans and interdependencies of activities made implementation of the strategy complex. Communication and relationships between individuals and organisations were identified as an important factor for joint and integrated working, but needed a more favourable environment than that of the pre-existing organisational silos. Essential elements of a positive implementation climate were not adequately addressed to better align the interests of health providers, and there were multiple competing priorities for the project leaders. A perceived low level of commitment from the leadership of both organisations to joint working and resourcing indicated poor organisational readiness. The combination of no detailed implementation plan with a single project management approach, ambitious targets,

the lack of a clear performance measurement framework, and an inadequate feedback mechanism demonstrated several gaps in the implementation process and resulted in poor execution of the strategy.

Strength and limitations

The use of the CFIR strengthened the evaluation by offering comprehensiveness, capturing the dynamics of the implementation process' complexity, systematising the analysis process and helping to tell the story by organising and producing rapid actionable evaluation findings.[20, 30, 31] The collaborative nature of the research was also helpful in facilitating the sharing of findings and feedback to the Southern health system. We further used a rapid analysis approach[23-25, 32] that was both efficient in terms of researcher resources[25] and allowed us to provide prompt feedback to the local health system in line with our aim to provide actionable knowledge. A limitation of using such a rapid approach was that we did not use detailed transcription and line-by-line open coding process, which might risk missing nuances of data. A further potential limitation of our approach is that we did not formally feedback our findings to each participant (respondent validation). Nonetheless, we shared our preliminary findings in periodic colloquiums targeted to participants from the Southern health system and the feedback we received was that they "made sense" to participants.

While the use of the CFIR helped us to illuminate contextual factors and understand the interplay between the context and implementation process of the complex strategy intervention, it would be helpful to identify how different constructs identified by the CFIR interacted to produce certain outcomes. A further issue is that "complexity" as used by the CFIR is defined through an implementation science framework as a complex (complicated) intervention; this is different from the way

"complexity" is framed in health systems research that uses complexity theory.[33] In this regard, the way CFIR structures its implementation process constructs (from planning to evaluating) is also linear, though CFIR's developers acknowledge the process may follow a nonlinear course.[19] Although beyond the scope of our study, one possible future approach could be to combine the CFIR with a realist informed evaluation.[34] This would enable CFIR identified constructs to be used to identify mechanisms for how different contextual conditions generate outcomes.[35] It is interesting to note that our analysis does suggest underlying mechanisms (e.g., lack of trust, poor leadership) that impact negatively on achieving the desired outcome of PCCS implementation.

Comparison with existing literature

We used the CFIR to understand the implementation of the PCCS in the NZ southern health system context. Our study adds to a small body of research using implementation science theory (CFIR) to study health system transformation initiatives.[20, 36, 37] [38] Using the CFIR, the study was able to unpack the black box of complex relationships between the intervention, its context and the implementation process.

Our study also adds to the body of NZ health services research addressing what conditions underpin successful implementation of integrated care. Previous studies into alliancing aimed at integrating primary and secondary care have also identified the issues reported here as being key to implementation success.[8, 10, 13, 38, 39] The Canterbury initiative of delivering integrated health and social care using alliancing highlighted a number of key enablers: the development of a clear and shared strategic vision, continuity of senior leadership, staff engagement, a continuous quality improvement approach and development of new ways of

contracting for health services.[13, 39] Another NZ evaluation of pilot initiatives using alliancing to promote primary and secondary care integration reported overly ambitious plans, competing priorities, inadequate attention to organisational culture, and lack of timely funding support as barriers to implementation.[38] Similarly, an evaluation of the system level measures (SLM) framework found that the strength of formal and informal organisational relationships at the local level were critical conditions for implementation success.[10]

The findings are also consistent with the international literature on alliancing.[14, 16] Experience of US Accountable Care Organisations emphasised the importance of having realistic expectations, finding ways to develop trust, managing conflict and making a collective decision, and focusing on leadership.[16] Our findings echo previous studies in the UK about similar health system transformation initiatives, most notably Vanguard programmes.[14, 15, 40-42] Vanguards were local pilot sites established across England to develop and deliver NHS initiated new care models to coordinate care across primary care, community services and hospitals.[14, 15] These studies highlighted the need for realistic expectations, for local capacity and capability building, the importance of developing relationships, strong leadership, robust data and analytics and managing time constraints.[14, 15, 40-42]

Implications for health policy and practice

A number of important lessons and potential solutions useful for future health policy and practice that have emerged from this implementation evaluation are summarised in Table 1.

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Table 1 Key lessons learnt and potential solutions

Key findings	Potential solutions
• The structure put in place (alliancing) itself does not bring about joint working. Relationship building is essential.	• Invest in nurturing and maintaining relationships between individuals and institutions.
• An expectation of being able to deliver new models of care without provision of dedicated resources is false.	• Ensure availability of adequate resourcing and develop agreement regarding the distribution of available resources.
• A committed leadership to resourcing and joint working is important.	• Ensure a leadership who leads change by sharing common vision and goals, developing teamwork based on trust, relationship and open communication.
• It is hard for project leaders to lead the strategic work on top of their day job.	• Ensure a dedicated change agent maps out the implementation.
• Lack of detailed plan (clarity around roles and responsibilities and scope) and interdependencies made the implementation roadmap vague.	• Acknowledge complexity and that transformation of this kind takes time. • Develop a detailed and achievable implementation plan with a clear project management approach. • Ensure robust staff and stakeholder engagement.
• A robust feedback mechanism is needed for quality of implementation and to promote shared learning.	• Develop an overall quality improvement approach for the whole strategy and performance measurement framework to track the progress of strategy's objective.

One key finding of this study is the importance of leadership – for successful local

health system change a stable and committed senior leadership team working

through high trust relationships and open communication across all partner

organisations is needed. Previous health system transformation initiatives in NZ and internationally also offer valuable lessons relevant to integrated care through alliancing.[13] It is noteworthy that while the alliancing approach in the NZ health sector was initiated more than a decade ago[9, 13] the lessons from the Canterbury initiative have not been fully realised across NZ. One reason for this is likely to be a failure to contextualise the alliancing approach for different local health systems.[37] Another is the possible ongoing influence of managerialism as a guiding principle for organisation. This influence may be to the detriment of leadership development, especially clinical leadership, which has been shown to be beneficial for health care organisations and developing new models of care.[43, 44]

The NZ government's health sector reforms, enacted in mid-2022, focus on addressing the problems the health system is facing, including service fragmentation.[7] The reforms emphasise the need for better integration between primary and secondary care.[7] The reforms create a single national health service through a new structure called Health New Zealand and have a greater emphasis on working with local communities through geographical locality networks with aims of integrating primary and secondary care.[7, 45-47] Alliance South had been in abeyance since the announcement of the new health system reforms in April 2021[46] and, at the time of writing, the details of the structure of governance and service delivery at the local level were in development. Regardless of the new configuration of the NZ health system, we consider that the lessons learned from this implementation evaluation will be instrumental for planning and implementing future initiatives at the local level.

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CONCLUSION

Using the CFIR, this study identified factors for the successful implementation of the PCSS using an alliancing approach in Southern NZ. During the evaluation period, wide-ranging health sector reforms in NZ were announced. Those leading the reforms should consider the key lessons from this study – in particular the importance of a stable and committed senior leadership team working through high trust relationships and open communication across all partner organisations - to strengthen integrated primary and community care delivery, which are core reform goals.

Word count: 5047

SUPPLEMENTARY FILES

Supplementary File 1: Interview Topic guide (.pdf)

Supplementary File 2: COREQ-32 reporting checklist. (.pdf)

Supplementary File 3: CFIR constructs mapped by study participant (.pdf)

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ETHICS APPROVAL

Ethics approval was obtained from the University of Otago's Human Ethics

Committee (D21/044).

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CONTRIBUTORSHIP STATEMENT

TS, CJ and GG conceived and designed the study. GG conducted interviews and led

the data analysis with input from TS, CJ and RG. GG, TS and CJ drafted the

manuscript. All authors read, provided critical reviews and approved the final

manuscript. TS is the guarantor.

COMPETING INTERESTS

All authors declare that they have no competing interests.

DATA SHARING STATEMENT

Full de-identified interview transcripts will not be shared. Informed consent, in line

with the approving ethics committee, only allows for the use of de-identified extracts

within research reporting and writing to maintain participants' privacy based in a

defined regional area and population, thus making their identification with full

transcripts more likely.

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Interview Topic Guide

- Brief introduction and thank you for your time
- Introduce self
- Highlight specific points from the information sheet:
  - o study details/aims
  - o confidentiality and procedure
- Explanations of the use of study data
- Consent to audio-record
- Collect written consent

Areas to explore with the alliance leadership team (ALT) members and service leads

1) Your role?

Prompts:

- o What is your current role?
- o How long have you been working in your current role?
- o Your role in primary and community care strategy (PCCS) implementation?
- o Can you tell me how did you become involved with the PCCS?
- o Is there a specific initiative (e.g. individual workstreams) that you are involved with?

2) Understanding of PCSS

Prompts:

- o What do PCCS initiatives mean to you?
- o What were your expectations of the PCCS initiatives?

3) Governance structure and decision making

- o What has been your experience of working in/with ALT?
- o How are the two organisations—SDHB and WellSouth PHO—working jointly for PCCS implementation?
- o What is the structure of communication and decision making?
- o How well has the vision and goal of PCCS been communicated to frontline staff?
- o Overall, what is working well, and what is not?

4) Implementation of PCCS

What are the key areas of focus of PCCS at the governance level?

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o How are the supporting activities (enabling structure) implemented to help the implementation of individual workstreams/care models?

o How is ALT supporting the implementation of individual workstreams/care models?

o How satisfied are you with the PCCS implementation process? Please describe.

o What are the good and less good things about the PCCS roll-out process?

o How confident you are that the vision of the PCCS will be realised?

o How are the individual workstreams related?

o What are the impacts of Covid-19 on the implementation of the strategy?

o Overall, what is working well, and what is not?

5) Equity

o What has been done for Māori and other high need groups as part of the strategy implementation?

o How is the governance/ALT team monitoring progress towards equity in PCCS goals and outcomes?

6) What do you see as the benefit of the PCSS intervention? Please explain.
Prompts:

o Could you tell me how you think the PCCS has made a difference in coordination and integration?

o What roles did PCCS play in improving patient experience and equity in outcomes? How?

o To what extent do you think the above changes are the result of actions taken through the strategy?

7) Next step

o Overall, what do you think of the PCCS?

o What should future PCCS initiatives do differently?

o How could the implementation aspects be improved?

<u>Conclusion</u>

Is there anything more you would like to add? Thank you so much for your participation in the interview. Your opinions are very valuable to the study.

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Supplementary File 2

Consolidated criteria for Reporting Qualitative research (COREQ) 32 item Checklist

Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care* 2007;19(6):349-57.

Domain	Item number	Comment	Reported on page number or not applicable (N/A)
Domain 1: Research team and reflexivity			
Personal Characteristics			
Interviewer/facilitator	1	The Research Fellow (Dr Gagan Gurung) conducted the interviews.	7
Credentials	2	All four research team members have PhD.	N/A
Occupation	3	GG – Research fellow, CJ – Associate professor, RG – professor, TS – professor.	1
Gender	4	Three male-identifying and one female-identifying researchers (interviewer, male-identifying).	N/A
Experience and training	5	All four research team members have extensive experience in conducting qualitative health research.	N/A
Relationship with participants			
Relationship established	6	It was a collaborative research project between the University and the local health system. Therefore, the research fellow and the broader research team knew some of the participants prior to the research. GG had not met with six participants prior to the study.	N/A
Participant knowledge of the interviewer	7	The interviewer introduced himself to participants stating he was a health services researcher, described the research team, its funding, the purpose of the project and answered any questions	N/A

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		participants may have had about the project and those involved in it.	
Interviewer characteristics	8	The interviewer was aware of the health system in New Zealand.	N/A
Domain 2: study design			
Theoretical framework			
Methodological orientation and Theory	9	Pragmatic orientation/paradigm Rapid framework-guided analysis using the CFIR.	7
Participant selection			
Sampling	10	Purposive sampling was used.	7
Method of approach	11	Participants were approached by email.	N/A
Sample size	12	Eleven.	8
Non-participation	13	Two key informants did not respond to the invitation to participate, however, no person directly declined to take part, nor did anybody drop out once agreeing to take part.	NA
Setting			
Setting of data collection	14	Participants could determine where the interview took place. Nine interviews were conducted by Zoom and two in person in their office.	N/A
Presence of non-participants	15	None.	N/A
Description of sample	16	Fully described in the results section.	8
Data collection			
Interview guide	17	The interview guide had a number of key questions and potential prompts.	Supplementary file 1
Repeat interviews	18	No.	NA
Audio/visual recording	19	All interviews were audio-recorded.	7
Field notes	20	Yes, following each interview, the interviewer wrote brief field notes covering the participants' main ideas and the interviewer's reflections.	7
Duration	21	Interview times varied between 30 to 45 mins.	7
Data saturation	22	Not applicable.	NA
Transcripts returned	23	No.	NA
Domain 3: analysis and findings			

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Data analysis			
Number of data coders	24	The interviewer coded the data and codes were discussed regularly with all members of the interview team.	7
Description of the coding tree	25	No. However, coding was informed by research questions, interview guides and CFIR.	7
Derivation of themes	26	The themes were derived from CFIR.	7
Software	27	We did not use software to manage data. We used MS word and an excel spreadsheet for coding and analysis.	7
Participant checking	28	No formal member checking or respondent validation was carried out. We did, however, share our preliminary findings in periodic colloquiums targeted to participants from the Southern health system.	NA
Reporting			
Quotations presented	29	Yes. Quotations are presented to illustrate findings and identified in a manner protecting participants' confidentiality.	8-19
Data and findings consistent	30	There was consistency between the data and the findings.	8-19
Clarity of major themes	31	Yes, there is clarity of major themes.	
Clarity of minor themes	32	Yes, minor themes (CFIR constructs) are clearly identified, and they are related to major themes.	8-19

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Construct		CFIR Description	Participants											Frequency of codes
I. INTERVENTION CHARACTERISTICS			1	2	3	4	5	6	7	8	9	10	11	
A	Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed.												
B	Evidence Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.												
C	Relative Advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.												
D	Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.												
E	Trialability	The ability to test the intervention on a small scale in the organization, and to be able to reverse course (undo implementation) if warranted.												

F	Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement.	x	x			x	x			x	x		6
G	Design Quality & Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled.												
H	Cost	Costs of the intervention and costs associated with implementing the intervention including investment, supply, and opportunity costs.												
II. OUTER SETTING														
A	Patient Needs & Resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized by the organization.												
B	Cosmopolitanism	The degree to which an organization is networked with other external organizations.												
C	Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing												

		organizations have already implemented or are in a bid for a competitive edge.													
D	External Policy & Incentives	A broad construct that includes external strategies to spread interventions, including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting.													
III. INNER SETTING															
A	Structural Characteristics	The social architecture, age, maturity, and size of an organization.													
B	Networks & Communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.													
C	Culture	Norms, values, and basic assumptions of a given organization.		x			x	x		x	x		x	6	

D	Implementation Climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.														
1	Tension for Change	The degree to which stakeholders perceive the current situation as intolerable or needing change.														
2	Compatibility	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems.								x	x					2
3+25:41	Relative Priority	Individuals' shared perception of the importance of the implementation within the organization.	x	x												2
4	Organizational Incentives & Rewards	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary, and less tangible														

		incentives such as increased stature or respect.															
5	Goals and Feedback	The degree to which goals are clearly communicated, acted upon, and fed back to staff, and alignment of that feedback with goals.															
6	Learning Climate	A climate in which: a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.															
E	Readiness for Implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention.															

1	Leadership Engagement	Commitment, involvement, and accountability of leaders and managers with the implementation.	x	x	x			x	x	x		x	x	8
					x			x	x		x	x		5
2	Available Resources	The level of resources dedicated for implementation and on-going operations, including money, training, education, physical space, and time.	x	x	x	x	x	x	x	x		x	x	9
			x		x	x	x			x			x	6
3	Access to Knowledge & Information	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks.												
IV. CHARACTERISTICS OF INDIVIDUALS														

A	Knowledge & Beliefs about the Intervention	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.													
B	Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals.													
C	Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.													
D	Individual Identification with Organization	A broad construct related to how individuals perceive the organization, and their relationship and degree of commitment with that organization.													
E	Other Personal Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style.													
V. PROCESS															

A	Planning	The degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance, and the quality of those schemes or methods.	x	x	x	x	x		x			x		7
B	Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities.		x		x	x	x				x		5
1	Opinion Leaders	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention.												
2	Formally Appointed Internal Implementation Leaders	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role.												

3	Champions	"Individuals who dedicate themselves to supporting, marketing, and 'driving through' an [implementation]" [101] (p. 182), overcoming indifference or resistance that the intervention may provoke in an organization.													
4	External Change Agents	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction.													
C	Executing	Carrying out or accomplishing the implementation according to plan.	x	x		x			x	x	x			6
D	Reflecting & Evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience.	x	x		x			x			x		5

	Perceived impact		x	x			5								3
	Equity		x	x					x				x		4
	Strategy and future		x		x			x	x						4