A realist review of allied health management in Queensland Health: what works, in which contexts and why

Jessica Dawber, Natasha Crow, Julie Hulcombe & Sharon Mickan

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Prepared by Jessica Dawber, Natasha Crow, Julie Hulcombe & Prof. Sharon Mickan

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For more information contact:
Allied Health Professions' Office of Queensland, Department of Health, GPO Box 48, Brisbane QLD 4001, email allied_health_advisory@health.qld.gov.au phone 07 3328 9298.

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Summary

Background

The allied health workforce is the second largest clinical workforce in Queensland Health. Each health service provides a unique organisational environment in which the allied health workforce functions. Despite early theoretical work about allied health structures, there is limited consistency in the way allied health structures are currently implemented and it appears that structures are impacting overall effectiveness and efficiency of allied health services.

This study has been designed to seek qualitative evidence from allied health leaders, their staff and their managers about which aspects of current organisation and management structures work, in what contexts and why this might be.

Methods

A qualitative realist evaluation methodology was chosen to best answer this complex question. It allows a deep and confidential comparison of success in one setting with others, in order to better understand which mechanisms are triggered in specific contexts. Components of organisational and management structures were identified as key contexts. Context, Mechanism and Outcome (CMO) configurations were developed to describe how each context triggered a series of mechanisms to achieve specific outcomes.

Results

Nine representative Hospital and Health Services participated in this project, with 58 allied health staff and five executives being interviewed individually or in focus groups. This study concluded that allied health organisational and management structures do influence the effective and efficient governance and delivery of clinical services. Three aspects of organisational context were identified as having the greatest potential and impact for effective allied health management; executive allied health leadership roles, integrated professional and operational accountabilities and systems that support education and research opportunities. Most of the mechanisms identified are familiar to allied health managers; however, the patterns in which they facilitate key outcomes over time have been described in unique detail.

Conclusion

This study provides a comprehensive and detailed report of how key components of organisational structure trigger management mechanisms and ultimately generate positive outcomes for allied health staff. There is a need to investigate and discuss these sequential CMO configurations to determine organisational and management recommendations. Findings from this study may be used to inform the organisation of health services to facilitate positive workforce and population outcomes.

Acknowledgements

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Thank you also to the health service executives, allied health leaders and professionals who participated in this research project. The time, support, and enthusiasm of participants is sincerely appreciated.

Introduction

Over 7500 personnel make up an allied workforce across 16 Hospital and Health Services (HHSs) that provide public health services under service agreements with the Queensland Department of Health (DoH)[1]. Each health service provides a contextual environment in which the allied health workforce functions. There are both common and varied components in allied health management structures, practices and processes between health services.

Addressing the gaps in evidence regarding Allied Health organisational design is a priority area for Allied Health Professions Office of Queensland. Identifying and analysing how structures, practices and processes contribute to outcomes of effectiveness and efficiency in allied health management, will contribute to the knowledge base in this area. This knowledge and understanding offers a basis to inform future decisions regarding the design of allied health systems within varying organisational contexts to contribute to the provision of safe and effective services for patients.

Background

Historically, there have been calls for greater attention to allied health leadership for over 20 years in the USA and UK, to align the allied health workforce with the central administration of healthcare organisations [2]. While Directors and Divisions of Therapy Services were established in UK hospitals and health services from the early 1990's, many have now been eliminated. Allied health professionals in the USA often work competitively in silos. However, in Australia there has been strong interest in allied health models and structures. The Mason Review of Australian Government Health Workforce Programs highlighted that allied health leadership positions were important to integrate allied health services into core healthcare delivery and for driving innovation around new service delivery models [3].

Australian health governance structures have seen significant changes in both the titles of senior positions and in the organisation of professional groups. In the late 1990's the Division of Allied Health had become a dominant organisational model in Australia, and 41 Directors of Allied Health were identified in a 1999 study [2]. During and preceding this project, Rosalie Boyce has contributed a significant body of work describing and analysing allied health workforce structures [4]. She classified allied health structures based on the allied health leadership and governance roles, their position within the organisational structure, presence or absence of an allied health division, commissioning of allied health services and autonomy of allied health leadership roles. The classifications of traditional/classical medical model, allied health division, unit dispersement and matrix/integrated decentralisation were popular in studies of allied health. However, a replication study in 2014 demonstrated greater complexity and diversity in allied health organisational approaches, possibly in line with increasing complexity in larger health service organisations that covered multiples campuses, networks and districts. By this time a separate Executive Director of Allied Health role

had been created in large networked health services. However, there was recognised diversity in the scope of operational responsibilities of these executive roles and there was inconsistency about the extent to which large healthcare organisations managed allied health in acute, sub-acute, community and mental health services. To further inform the prevalent organisational and leadership models for allied health throughout Australia, Rosalie recently reviewed the numbers and proportions of allied leaders in Australian Public Sector Health Boards and Top Management Teams. This review concluded that allied health leaders are under-represented when compared to medicine and nursing/midwifery colleagues in both top management teams and boards. This lack of contribution to system performance, service quality and patient safety decisions was contrasted to the potential contribution that the second largest clinical workforce in Australia could offer [2].

In Queensland Health, allied health organisational structures are varied, constantly changing and they do not neatly fit into any of the predefined models. Currently, it appears that allied health structures vary as much in how they are designed compared to how they align to any distinct model. There is limited literature describing, analysing and assessing allied health management structures and associated practices and processes. It is not clear which organisational factors support allied health leadership and enhance their effectiveness in Queensland health services.

Mueller and Needs [5] describe the process of change of the allied health structure of the Auckland District Health Board (ADHB), from single discipline department to a mixed structure with an allied health division and profession specific leadership structure. A key driver for change in this organisation was stronger representation of allied health at a senior management level. Leadership roles, clinical education roles, reporting lines, clarity of structure, broader organisational change and team structure factors were considered in the redesign processes and assessed by the authors as important for achieving outcomes of cost effectiveness, quality and integrated service delivery. Dawson [6] describes the process of restructuring allied health at the former Lottie Stewart Hospital in Sydney, to form an allied health division. Components identified in this restructure included allied health identity, representation at an executive level, communication structures and influence over organizational strategy and planning. This restructure was evaluated on outcomes including allied health representation, staff development, allocation of resources, visibly, clinical education and change resilience.

In developing the Casey Allied Health Model of Interdisciplinary Care (CAHMIC) a mixed methods study was conducted to identify components of interdisciplinary teams [7]. Effective team structures including clarity of leadership and a culture supportive of innovation and change were amongst features identified. ‘A review of allied health workforce models and structures’ [8] in Victoria, identified effective leadership and visibility as important factors for the allied health workforce to delivering effective and quality care to meet population needs. The National Rural Health Alliance [9] identified under representation of allied health in management roles and committees as well as issues of quality of management structures, as factors contributing to higher attrition rates and less effective resource utilisation for the allied health workforce in rural and remote areas.

To understand how which aspects of organisational structures and which mechanisms influence outcomes, it is important to define the scope of outcomes for the study. Dorning and Bardsley [10] reported on areas of 'capacity', 'effectiveness', 'access', 'safety', 'person-centred care and experience', 'equity' in a report on measuring quality of care delivered by allied health professionals. A study of value of allied health in South Australian (SA) Health [11] in part aimed to identify where allied health contributed to savings for the tertiary health centre and evaluate cost of delivery services relative to price allocated and funding received. The authors described the context for allied health services at SA Health including a current service redesign with aims of enhancing patient flow, patient centred care, equity of access and reduced duplication.

There was a desire with Queensland Health to better understand which aspects of organisational context influence allied health outcomes, and through which mechanisms this is most likely to occur. It was clear that we could not evaluate whole models of allied health structure and leadership. A stakeholder group of allied health leaders participated in an early facilitated workshop in late 2015 to begin to define the scope of this study. There was limited development until another workshop was convened in June 2016. A steering group of volunteer Directors of Allied Health identified the following contextual features of their diverse organisational structures that seemed to influence service delivery in their local environments:

- Leadership – both profession specific and allied health collaborative leadership
- Profession specific identity
- Allied health identity
- Operational management model – profession vs. allied health collaborative
- Implementation of service improvement
- Workforce management
- Professional development
- Research activity

This study was then designed to evaluate how allied health organisational structures facilitate effective allied health outcomes. There was a commitment to look more deeply into the components and compositions of management structures within local health services, and to identify ways in which these components enabled or hindered effective outcomes.

Research Aims

The study aims to understand how allied health leaders work within management and organisational structures to influence outcomes. It is designed to answer the questions:

- How do allied health management structures, processes and practices influence governance and delivery of allied health services?
- What mechanisms work to achieve effective and efficient outcomes, and in what contexts does this happen?

Research Objectives

- Identify and describe allied health management structures and key components of organisational context across a sample of Queensland Hospital and Health Services.
- Describe and analyse the context in which allied health management structures and leaders operate in a sample of Queensland Hospital and Health Services.
- Understand how context and processes are operationalised to influence outcomes for the allied health workforce and the populations it serves.
- Understand the mechanisms that support effectiveness in allied health management, governance and leadership.

Methodology

Design

A qualitative realist evaluation approach was used in formulating the research design.

A steering committee comprised of allied health senior leaders from AHPOQ and Queensland Health were engaged across the project lifecycle to inform the design of the research protocol, test programme theories and validate data analysis. A facilitated discussion was undertaken in the research design phase to:

- report on current outcomes related to allied health leadership and workforce
- define and describe which outcomes are measureable
- identify which outcomes allied health are recognized for and assessed against
- define meaningful outcomes and indicators for allied health leaders.

This included formulation of the research questions and definition of outcomes of interest. Post data collection and thematic analysis, preliminary findings were presented to the steering committee, to test the programme theory and to support the conceptualization of context mechanism outcome (CMO) configurations.

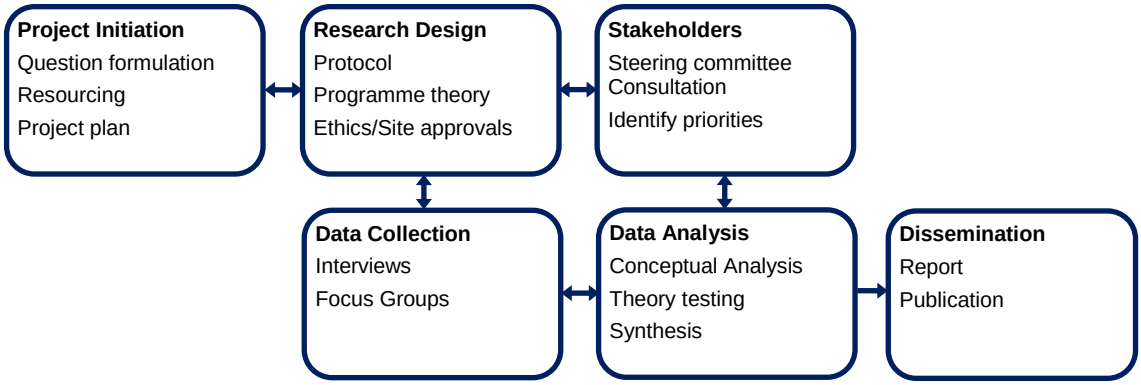

Figure 1 - Research Design

Sampling

Purposive sampling was used to ensure allied health leaders were represented from diverse geographical regions, professional backgrounds and organisational structures. Contact names of the most senior allied health post holders across Queensland were provided independently by AHPOQ for invitation to this project. Potential participants were contacted and provided with information about the research project via phone and email. Potential participants were given time to reflect and consider their involvement before responding about their willingness and ability to participate.

Ethical Considerations

The study design was reviewed and received approval from the Gold Coast Hospital and Health Service, Human Research and Ethics Committee (HREC/16/QGC/289). Site Specific Approvals were obtained for all sites. Participation in the study was voluntary with participants providing informed consent to participate in the study. Data has been aggregated and de-identified to reduce the risk of sites and participants being identified. The authors of the study have backgrounds as allied health professionals, but were not employed by any of the sites that participated in the study.

Data Collection

Data was collected via a written questionnaire, semi-structured interviews and focus groups.

A written questionnaire was distributed to the holder of the highest allied health position at each site to gain objective information regarding the organisational context and demographic information about the participant.

Semi-structured qualitative one-on-one interviews were conducted with:

a) the holder of the highest allied health role within each participating Hospital and Health Service
b) Executive Director, Chief Executive, General Manager or the line manager of the highest allied health role within the same Hospital and Health Service

Focus groups were conducted with:

c) allied health workforce, including any level of allied health staff

Interviews and focus groups were audio-recorded and transcribed by a professional transcription service. The interviewer also took notes and kept a reflective journal for the purposes of data referencing, analysis and minimization of potential bias.

Data Analysis

A realist methodology was applied to data analysis, to develop Context, Mechanism, Outcome (CMO) configurations. Context was understood as the management and organisational environment in which allied health operates within the hospital and health service. Mechanisms were understood as the process through which an aspect of the context generated outcomes. Outcomes are understood as the effect produced, such as quality and efficiency.

Each configuration was seen to have a flow on effect, which could be linked to a new configuration i.e. the outcome of one context, over time produced a context in which different mechanisms operated to generate additional outcomes. The conceptualisation of linkages between CMO configurations was informed by a realist evaluation by Jagosh et al [12], which describes a ripple effect, with CMOs linking to other CMOs through events that occur over time (see Figure 2).

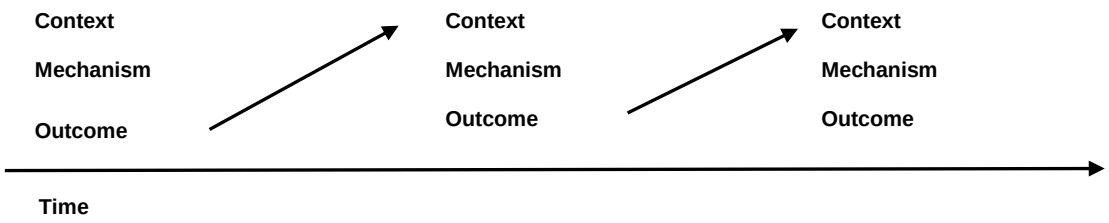

Figure 2 – Context, Mechanism, Outcome (CMO) Configuration

An initial review of transcripts was undertaken by the interviewer (JD), with reference to the audio recordings and reflective journal. Transcripts were de-identified with person and geographic identifiers being removed from transcripts and sites being given a code. An independent coder (NC) completed thematic analysis of de-identified transcripts in response to the semi-structured interview questions. The coded data was provided to JD and SM who completed further independent coding to investigate CMO configurations. Preliminary CMO configurations were formulated, discussed and refined by JD and SM. CMO configurations were further refined through multiple sessions of collaborative analysis and following discussion with the steering committee.

Results

Nine Hospital and Health Services were recruited to the study with the following demographics:

- Three metropolitan
- Three regional
- One statewide
- One rural
- One rural/remote

Allied health workforce size was classified in categories of large >1000 staff, medium 500-1000 staff, small <500 staff, with health service demographics including:

- Three large
- Three medium
- Three small

The allied health leader was interviewed in all nine sites. Five leaders were working in Executive Director of Allied Health roles, reporting directly to the Chief Executive. Three leaders were working in Director of Allied Health roles and one was an Allied Health Lead, with all four reporting to Executive Directors. Their professional backgrounds included five different allied health professions (Speech Pathology, Occupational Therapy, Physiotherapy, Psychology, and Medical Imaging) and their length of time in the role ranged from 1-10 years. Allied health leaders identified executives, who were invited to interview.

Executives were available for interview at five sites. They reflected three different roles (Chief Executive, Executive Director Workforce, Deputy Director of Clinical Services) and their length of time in the role ranged from 4-18 months.

Focus groups were held at eight sites with two focus groups being held at one site, the second being comprised of directors of professions. In total 49 allied health professionals participated in focus groups. They had been working in the profession for a range of 8 months to 38 years, with an average of 16 years professional experience.

Table 1: Focus group participant by HP level

HP Level	Number
HP3	10
HP4	9
HP5	21
HP6 or above	7

Table 2: Focus group participant by profession

Profession	Number
Occupational Therapist	15
Physiotherapist	12
Speech Pathologist	8
Dietitian	4
Social Worker	2
Psychologist	2
Other*	6
*Smaller professions have been de-identified for anonymity	

The interview questions (see Appendices A and B) addressed the same key issues for all stakeholder groups. These issues had been developed from a brainstorming workshop with the steering group as factors directly influencing allied health's effectiveness in organisations:

- Aspects of organisational structure
- Identified successes, including barriers and challenges
- Allied health leadership and governance
- Perception of the allied health workforce
- Research and education in allied health

Narrative Summary

This narrative summary will identify the most common comments from the three stakeholder groups (executives, allied health leaders, professionals) and synthesise the shared meaning across all key issues identified in the interviews and focus groups. This will form the basis for understanding the context of key components of allied health organisational structures.

Aspects of organisational structure

Five allied health leaders reported having stable organisational structures, three leaders reported being involved in a current restructure and one described a restructure within the last year. Of the five stable organisations, two had restructured within the last two and three years respectively. There was a common response amongst executives, and allied health leaders and professionals that restructures were seen as disruptive because of changes in roles and reporting arrangements, and reduced communication. However, positive opportunities to integrate and increase communication were also highlighted.

Six allied health leaders reported having offices near other executives and one was planning to move nearer to their executive colleagues. This was reported to positively make a difference through opportunistic conversations and better visibility. Allied health leaders were included in consultation and strong relationships were developed. Eight allied health leaders identified other allied health professionals in executive roles within their health service. There was not any consistency about the extent to which these allied health professionals identified with and represented allied health. Most commonly, they had moved into roles with a specific and independent focus.

Identified successes, including barriers and challenges

There was consistency between executives and allied health leaders and professionals that greatest successes for allied health were identified as building a cohesive allied health team with full and permanent recruitment (where appropriate), contributing to innovation and service models, and in building clear allied health governance, plans and strategies. Allied Health leaders described using data to build business cases, and with their staff they recognised that allied health was seen as making a meaningful contribution to patient care. Allied Health professionals recognised their leaders as collaborating and planning with others, ensuring quality outcomes for patients and in building research positions.

Many factors contributing to this success were consistently recognised by executives, allied health leaders and professionals. Most commonly it was having an executive allied health voice and a cohesive allied health team. Strong allied health leaders were recognised, as were partnerships with and support of important projects in and beyond allied health. Allied health leaders and professionals recognised the need to demonstrate business and patient benefits and recognised that their leaders needed to be both persistent and committed. They mentioned using data, quality, evaluation and project processes to demonstrate successes.

The most common barriers reported by all stakeholder groups included the competing demands on staff time, limited staff funding, lack of understanding of allied health funding and a lack of advocacy for and communication with allied health. There were comments made by some sites that current and previous structures are significant barriers. The allied health leaders and staff most commonly recognised barriers around their place in the organisational structures and a lack of access to information. There were also comments made about professional and operational management issues, such as when allied health staff were not managed by their own professions. The ways in which these barriers limited success were varied and often context dependent, so they will be discussed in more detail in the following thematic analysis.

Allied health leadership and governance

Allied health leaders were noted by all stakeholder groups to use influencing leadership strategies, namely advocacy and respect across the allied health professions and a positive focus on patients. Allied health leaders were noted to be visible and vocal at an executive level and they demonstrated respect through outcomes. Allied health leaders described aligning allied health with health service objectives and providing input on strategic directions. Their professionalism, positivity, consistency, persistence, resilience and flexibility was noted by allied health staff. Allied health professionals commented that their leaders had good relationships with executives, and they described them driving change and improvements, understanding strategic direction and marketing allied health.

Clear allied health governance was recognised by all stakeholder groups. Most commonly they described the need for clear professional governance frameworks to inform, maintain and recognise individual allied health professions, while also aligning

with corporate governance systems. Allied health leaders and professionals described developing standardised reporting systems that recognise professional uniqueness, and incorporate credentialing, monitoring and evaluation systems. Some staff commented that professional governance was more difficult when they did not have an allied health manager.

Perceptions of the allied health workforce

Allied health professionals are respected by all stakeholder groups individually, and for their service delivery and proactive approach. Allied health leaders and professionals described using data to describe their value and contribution. Allied health professionals recognised good relationships between professions, such that they could see the value and fit of allied health interventions.

All stakeholder groups recognised the use of allied health data in planning and staffing clinical services. However, the extent to which this was requested and provided did vary between health services.

Thematic Analysis of Context-Mechanism-Outcome (CMO) configurations

The narrative data presented reflects a wide variety of perspectives and the qualitative summary cannot provide a deep level of understanding of why these comments were made. The realist methodology allows deeper and confidential comparison of success in one setting with failure in another to better understand the mechanisms triggered by the different contexts. The middle range theories or explanations of the way each mechanisms work are collected and compared between contexts to refine their contributions to the final outcomes, in the form of Context Mechanism Outcome (CMO) configurations. However, in the complex management and organisational structures of Queensland's health services, there are many interdependent components that can exist at each level of the CMO configuration. Therefore, this thematic analysis presents patterns of CMO configurations that have emerged from the data. While the key CMO configurations have been separated for ease of understanding, there are many common components which reflect the complex interdependencies of senior healthcare leadership.

Allied Health Executive Roles

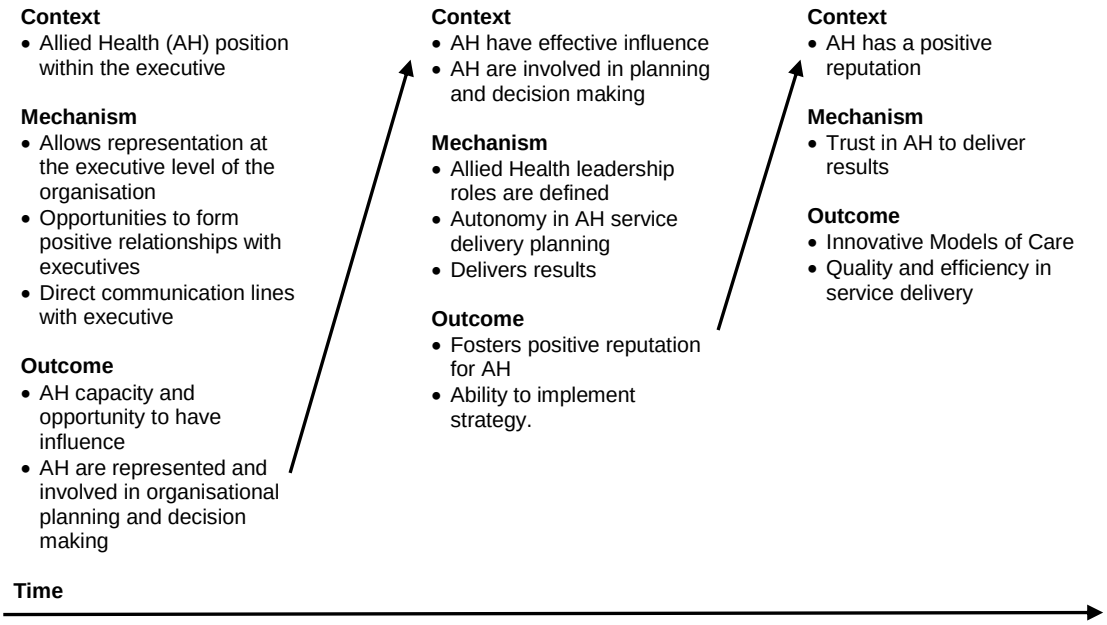

Figure 3 - CMO Configuration Allied Health Executive Roles

The presence or absence of executive allied health leadership positions within the organisational structure is treated as a context, within the CMO configuration. Across the sites the highest allied health position was either an executive position, or a non-executive position (e.g. director of allied health or allied health lead). At some sites, organisational structures were due to come into effect that would see an executive allied health role. Perspectives from executives, allied health leaders and allied health professionals were consistent in views that allied health executive positions are a context that promotes effectiveness, influence and in turn a high functioning allied health system.

> *"The risk is where you don't have a professional lead at the executive table. That there is a concern that that may then actually dilute their ability to influence"* **Executive**

The success of allied health leaders in executive roles was focussed on how these executive roles were used to build relationships, effective communication and partnerships within the organisation. Equity of executive roles in allied health, nursing and medicine was seen as important for running the business of health. The lack of an allied health executive role, did not mean allied health leaders were unable to be effective, however there were greater challenges to effectiveness, and the need to use other strategies to achieve outcomes.

The context of allied health representation within the executive was seen to have cumulative and flow on affects, with the outcome of allied health having the opportunity for influence and involvement in organisational planning and decision making (Figure 3). This is fostered through mechanisms of direct

> *"s/he is very much a part of the executive team and very much seen as part of that team. …I see that there are a lot of casual interactions that occur between the officers and it's a very collegial approach to big issues"*
> **Allied Health Professional**

communication lines and the associated opportunity to form positive relationships within the executive management team. Where the context supports allied health having effective influence, a voice at the executive table, and involvement in executive level strategic planning, over time allied health develop a positive reputation within the organisation, by being able to effectively implement strategy that supports workforce needs. This in turn leads to trust in allied health to deliver results, for example, the ability to implement innovative models of care that reduce waiting times.

> "*If we are to position ourselves for that future, then we have to take very seriously the Allied Health workforce, the value-add it provides to patients, an understanding that besides the value-add it adds to that diversity of thinking at the executive table, the diversity of opportunity across streams and across all those areas to break down the silos"* **Executive**

> *"The strategic level, in terms of decision making, our models, pathways, prioritisation, that's where they need to have a stronger voice."* **Executive**

Time is a factor in the translation of executive allied health positions to facilitate mechanisms that deliver outcomes, flow on CMOs and the cumulative impact of these. Some executive allied health roles had been in place for several years. At these sites, the allied health executives had established work practices, communication lines, relationships and systems that supported effectiveness in the role. At sites where new allied health executive positions had recently been or were due to be established, there was high levels of positivity about the potential for the allied health executive roles and evidence of early mechanisms to lead to successes. Where allied health executive positions had not been embedded in the organisations, the cumulative benefits and flow on effects of the positions was not seen.

> *"if you have nursing and medicine but you don't have Allied Health on the executive table, you're not having the tripartite of professional streams and that's actually inequitable"*
> **Allied Health Leader**

> *"They're obvious, and they're missing. It's like there's a chess piece missing off the board, and we all know who it is."* **Executive**

In organisations where the highest level of allied health was not represented at the executive level of the organisation, there were greater challenges to effectiveness. Barriers to effectiveness included not having a voice at the executive table, not being included in organisational planning, a lack of understanding of workforce and reduced autonomy to implement strategy. For example, strategic planning occurred which had not considered allied health roles and contribution, this lead to a breakdown of relationship with the allied health leader and their line manager, and had flow on affects for this person to influence, the operations of the allied health workforce. Where a lack of representation led to the strategy that had not considered allied health operations and workforce needs, the effectiveness of allied health was reduced and this impacted the reputation of allied health within the organisation.

> "*You're seeing documents being produced with no allied health input which affects the whole service delivery from management down to …the services patients are receiving"*
> **Allied Health Professional**

Office Location

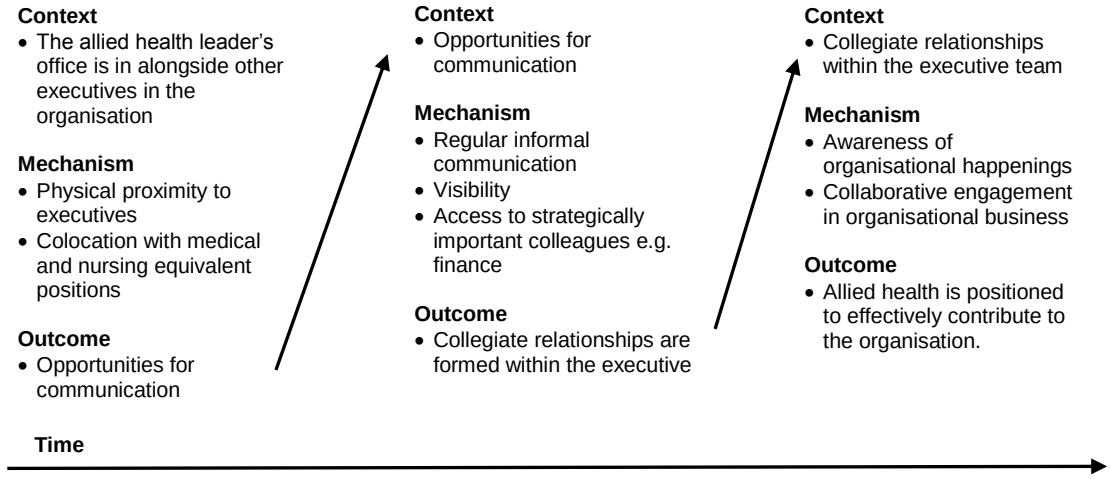

Figure 4: CMO Configuration – Office Location

Allied health leaders were interviewed about the physical location of their office within their organisation and the impact of this had on effectiveness in their role. Allied health leaders were either collocated with other executives, allied health or in areas unrelated to their role. Allied health leaders tended to be located in executive areas of the organisation when their role was an executive role, however this was not universal. Benefits and challenges of office location were understood both from the current location, as well as reflections on previous office space geography.

> *"It's very important that we sit in the exec office area, particularly for the operational requirements of the role. My office was [elsewhere] and it was not very good, because you were just outside of the corridor conversations… you need to be visible"* **Allied health Leader**

Overall allied health leaders felt having an office physically located within the executive area was advantageous for developing relationships, effective communication and influence. This occurred through mechanisms that included informal communication, visibility and networking. Perceived and realised geographic benefits of an executive office location were reported by both those with and without executive office locations.

Where allied health leaders had professional leadership components of their role, they reported benefits to being collocated with their medical and nursing equivalent positions. Allied health leaders also reported benefits from having access to business managers or finance as being useful, where there was an operational component to their role. Where allied health leaders were located with allied health leadership/workforce (e.g. Directors of Professions), they reported

> *"Proximity is very useful. To be honest, we used to all share – the entire exec had one floor of a building and we moved into four quadrants and certainly notice that it's not as collegiate and as efficient as it was when we were all together".*
> **Allied Health Leader**

> *"It's nowhere near the Executive... but it is located next to Allied Health... It's not optimum at all - and there's that huge disconnect with Exec"*
> **Allied Health Leader**

that this was useful for team building, accessibility and operational management, albeit lacking the advantages of an executive location.

> *"It's been fantastic, - the corridor conversations, the morning tea, everything, it makes a huge difference. Compared to where I was, which way was over the other side… I think that, seeing everyone every day, you build really good relationships, strong relationships. You just have informal chats all the time"*
> **Allied Health Leader**

At sites where allied health leaders either currently or historically had been located neither in the executive or the allied health workforce, no benefits were seen as being derived from the office location. All allied health leaders had an awareness of the pros and cons of office geography and reported the use of strategies to ensure either access to the executive or presence with the allied health workforce.

> *"So myself and my colleagues do get out of the suite and of the building quite a bit to meet with a number of our colleagues that might be based in another part of the building or another facility within the health service"* **Allied Health Leader**

Organisational Stability

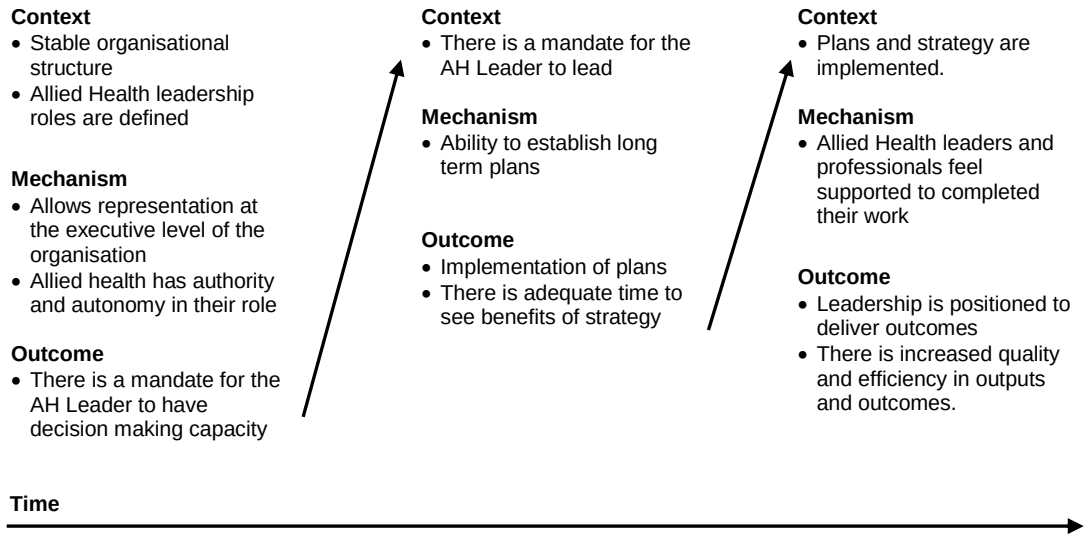

Figure 5: CMO Configuration – Organisational Stability

Organisational structure provides the environmental context in which allied health management, leadership, strategy and service delivery operate. Organisational structure and systems go some way to defining the duties, roles and sphere of influence for allied health leadership. This includes both the overall organisational structure as well as the structure of allied health governance. The stability or instability of structures, systems and processes is conceptualised as a context influencing outcomes for the allied health service system.

> *"having an executive director of allied health role in the organisational structure at a leadership level now in a permanent capacity is really important for the staff"*
> **Allied Health Leader**

Where organisational structure is stable, there is an opportunity for processes and practices that support the governance, development and delivery of allied health services to establish and embed. Allied health leadership roles within a stable organisational structure are defined not only on paper, but through the actions, relationships and outputs of the leader in the role over time. Through having authority and autonomy in their role the allied health leader, is positioned to deliver outcomes with a mandate to lead. Where an allied health leader has autonomy and a mandate to lead there is an ability to develop and implement long term plans, and as an outcome there is adequate time for benefits of the strategy to translate and be evaluated. In the context where plans and strategies are successfully implemented, the allied health workforce feels supported and has capability to deliver quality services

> *"I think that when there is senior leadership instability what suffers is the future thinking… Also it does affect the discretionary effort, so at all levels of staff"*
> **Executive**

In organisations where organisational restructure was recent or underway, allied health leaders reported feeling less able to implement strategy. Leaders and executives in organisations with current or recent

restructures, described change as an opportunity for improved governance, leadership and implementation of strategy into the future. Within these organisations, allied health strategy and planning was in development or in the early phases of implementation. As such, the ability to evaluate the success of implementation was reduced. However, there was optimism where new or planned structures positioned allied health to have greater executive representation and strategic influence. Where restructure had resulted in the loss of executive representation for allied health, allied health leaders, allied health workforce and executive reported that allied leadership roles had a more operational focus and that allied health were not involved in long term strategic planning of the health service.

Professional and Operational Accountabilities

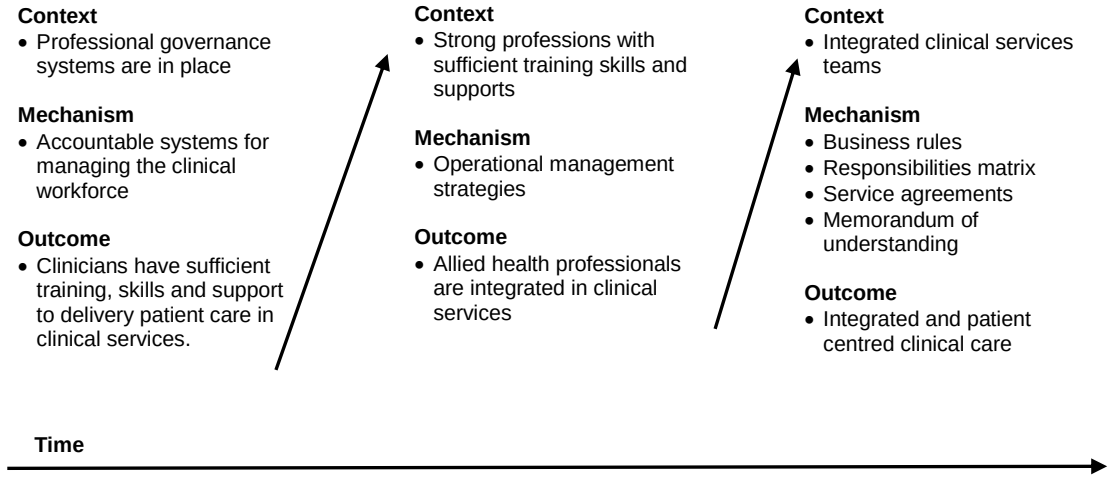

Figure 6: CMO Configuration – Professional and Operational Accountabilities

An integrated but explicit model of governance is able to separate and identify professional and operational responsibilities in complex healthcare organisations. Professional responsibilities refer broadly to the support and management of the professional workforce. In some organisations, professional leadership is separated from line management of clinical staff. Operational responsibilities commonly describe systems of service delivery to meet clinical needs, within financial parameters, guided by key performance indicators. Organisations need both professional and operational governance systems to interact through a range of information, planning and management systems.

> *"The professions - if you think of a matrix - the service delivery arm of an organisation, is holding one of the professions within it and then allocating staff out…They provide the workforce coming in. They provide the governance around that."* **Executive**

Hospital executives were clear about articulating the differences between professional and operational management systems. They commonly described a matrix system where professions allocate staff from a variety of disciplines to deliver the optimum range of clinical services. Commonly, they recognised that allied health is a professional workforce, similar to medicine and nursing and needs to be treated in a consistent manner.

Systems of professional governance are therefore a starting context for allied health, for all included professions. In many cases, these professional governance systems have been established independently in professional departments and are consistent with state wide professional systems and structures.

Professional governance relies on accountable systems for managing and supporting a clinical workforce. Responsibilities were commonly described by allied health leaders as: staff recruitment, orientation and allocation; absence management, registration and credentialing; skills and professional development; and succession and workforce

planning. Executives commented that professional governance was recognised as a basic building block for ensuring that the right staff, with appropriate systems, have suitable skills and are supported and monitored to deliver safe and high quality clinical care. This was acknowledged as beneficial to manage the workforce, and to provide professional development and supervision. Further, professions need to ensure the supply chains are in place from universities to ensure that clinical staff have suitable career paths to deliver the appropriate models of care required by their operational managers. For allied health professionals, clinical care is usually delivered within a specific professional scope of practice and therefore efficient professional governance frameworks are managed within professions. This is also consistent within the medical and nursing professions. Further, in allied health, there are opportunities in some professions for individuals to work at and beyond the full scope of practice. Professional leaders need to ensure that these staff are sufficiently educated and supported to work to maximal levels of full or extended scope of practice. Where appropriate, models of extended scope of practice have been developed and credentialed to support innovative models of care. Respect for each professional's role, scope of practice and contribution can follow. The comprehensive outcome of an effective professional governance systems was that professional staff were sufficiently educated, skilled and supported to work in their clinical areas.

On balance, both executives and allied health leaders described the strongest and most efficient models of professional governance as being when professional leaders operationally managed their own professional workforces. Executives described a good professional governance framework as providing professions with the acknowledgement and freedom to manage their own workforce while also being accountable for staff to work effectively within the operational framework. Allied Health leaders reported positively when they aligned the professional and operational management of each profession. When operational managers were also professional managers there were efficiencies in the delivery of professional governance. They described understanding their whole professional workforces, which assisted them to build career progression pathways and to look for new opportunities. Having independent budgets, allowed significant internal redesign, which enhanced clinical service delivery.

> *"when there's a problem, they've recruited someone who's not registered …or they've put someone on the wrong pay point…then it's an issue for allied health [to resolve]"* **Allied Health Leader**

In contrast, problems were reported when allied health professionals were managed by other people. Recruitment and registration processes have specific requirements, which when they are not met require allied health leaders to resolve. This was most obvious for some allied health leaders when there had been changes in operational and professional governance.

> *"our professional governance is very hard to actually implement because they have been line managed by someone else"* **Allied Health Leader**

Strong professions therefore becomes the context for the next set of mechanisms, around operational management.

Operational management commonly refers to the management and delivery of defined clinical services. Executives described a range of operational functions that when allied health staff were included, promoted better service delivery; such as clinical prioritisation, resource allocation, integrated models of care, empowered clinician managers, and delegated decision making. Most commonly, executives described operational managers defining what and how services should be delivered and setting and measuring performance targets. The most effective models of care included an integrated or coordinated allied health component that specified inclusion of the most appropriate professional groups. Some health services engaged professional directors in the clinical service line management teams, to advocate for allied health. When these operational mechanisms were functioning well, allied health professionals were integrated in service delivery teams.

> *"there are challenges for people to understand how to work across streams...there is an impact on how allied health staff think about the services they provide, where they provide them and how to manage in that environment."* **Executive**

Challenges were described by allied health leaders in engaging as partners in clinical services. Several described the risk that operational management can be very transactional and promote efficiency without checking that the service design is suitable for the model of patient care. They reinforced the need to position allied health staff at the right stage of the patient journey, and to demonstrate their worth at every level. Participants described many different structures, but in essence the allied health leaders saw their roles as making the structures work by advocating for allied health, holding people to account and building appropriate relationships.

> "*whereas if.. we talked about this is a cohort of patients that we feel we could do better for. What can we all offer? Actually talk about a model of care that is patient-centred and then we pick the services we need based on the patient*" **Allied Health Professional**

> "*our operational managers aren't necessarily cognisant of all professional requirements across all professions… performance contracts require them to make operational decisions, but to take advice and support from the profession"* **Executive**

These challenges informed the final set of mechanisms that sustained integrated clinical service teams. Health service executives were clear that there needed to be consistent and transparent business rules for decision making and planning between both operational and professional governance systems. Allied health leaders described having detailed responsibility matrices as well as clear business rules. Several described service level agreements and memorandums of understanding which detail the number of allied health staff from different professional groups that are working within specific clinical areas. The use of monthly reporting templates, business cases and project planning were also discussed as beneficial strategies, in some cases. Further, having a single point of accountability for allied health governance was seen as important. There was recognition that allied health professionals

> *"The [professions] do provide services to the [clinical] service line… the MOU provides a framework to make sure that we all understand what are the rights and obligations*" **Executive**

"[the memorandum of understanding] describes how we will provide annual leave, emergent leave relief… how we manage the workforce as well provide the learning professionally… it gives clinical service lines reassurance that they will get X number of FTE"
Allied Health Leader

understood the uniqueness of different professions and could best identify which particular professions delivered services that enhanced patient care. It was also acknowledged that not all professions were required for all clinical services.

All stakeholders described challenges in developing appropriate systems for setting clear and equitable professional standards and balancing appropriate clinical service expectations and accountabilities. It was challenging to ensure different parts of the business had a full and shared understanding about what clinical services are required. It was also important for allied health professions to be both strong and integrated. The outcome of this mechanism was integrated patient-centred clinical care.

"We simply recognise the professional side and the operational side, and we come to an agreement on how we're going to deliver services operationally within the business rules, but taking on board the professional requirements of that workforce so that we're safe and we've got quality, we meet all the legislative requirements." **Executive**

Leadership and Communication Systems

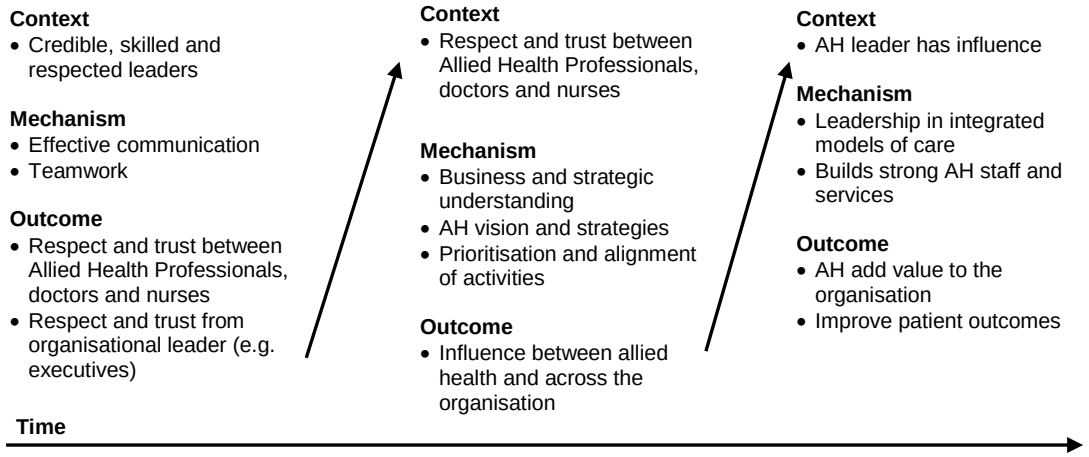

Figure 7: CMO Configuration – Leadership and Communication systems

Allied health leadership has been identified as a key factor in the effectiveness of allied health by all stakeholders; allied health leaders (in executive and non-executive positions), executives and professional staff. The presence of capable allied health leaders is recognised as a context influencing outcomes. This configuration is similar to but offers a different set of mechanisms to the configuration describing allied health executive roles. These mechanisms focus on specific leadership and communication strategies that distinguished between effective outcomes.

> *"I think the culture of respect between the professional groups has really facilitated it…levels of trust have been able to be established between medical and allied health groups"* **Executive**

As a basis, allied health leaders were described by their executives as professionally skilled and respected, credible advocates for allied health. They were reported to be excellent communicators and collaborative team players, who were able to bring the right people together in specific teams. As a consequence, they were able to advocate for and build respect and trust across the different allied health professions and between medical and nursing professions.

> *"s/he has really identified the strengths in the team, both in terms of people and also the broader team performance"* **Executive**

From this basis of respect and trust within and across the profession, allied health leaders acknowledged that they needed a good understanding of the business and its strategic priorities. This was important for them to build a clear vision, articulate strategies, prioritise and align allied health professional activities. The leaders recognised that this helped them to be successful in influencing within the allied health professions and across the organisation. This was also reinforced by the executives who acknowledge that allied health leaders used their

> "*obviously all of the allied health professionals are involved in supporting patients in the [clinical] service. But rather than having each one of them talking individually, we had one person who… took the lead in addressing the issues*" **Executive**

spheres of influence by working across traditional silos. They were described as being able to bring together the right team to address a particular issue.

> *"S/he thinks very strategically, looks at what s/he has, makes the most of what s/he has … find opportunities to grow staff … and services"* **Executive**

From the new context of having and using their influence, allied health leaders were able to recognise the components of care that are unique to specific allied health professions. They were also able to find opportunities to build staff and services. They stepped up and advocated and were confident in their areas of expertise, in order to add value for the business and patient care. They were able to consider community needs and identify what was required to address these needs.

> *"understanding the bigger picture and being able to align their work priorities to the bigger picture, and being able to take decisions"* **Executive**

This enabled them to ensure clinical services were coordinated across specialties and professions. Executives described allied health leaders as being influential in supporting the delivery of new models of care that added value to the business and improved outcomes for patients, often through a team based delivery of care. Examples where allied health leadership was not maximised were reported. Allied health leaders acknowledge that there needs to be acceptance and a desire for an allied heath governance model by the health service. Allied health and professional leaders need to be respected for what their roles can provide and permitted to contribute to the health service. Acknowledgement by the organisational leader that allied health is a critical component to contributing to the health service's strategic objectives is crucial. Further without having positive outcomes, allied health leaders reported losing influence to contribute.

> *"the most obvious barrier has been within the allied health disciplines…there tends to be siloing… and disagreement. There tends to be a desire to be autocratic…without communicating well with other disciplines and wanting to cooperate and work together"* **Executive**

> *"There's a bit of give and take with this because sometimes the allied health priorities are …not the most critical priority for the health service"*
> **Allied Health leader**

Data Management

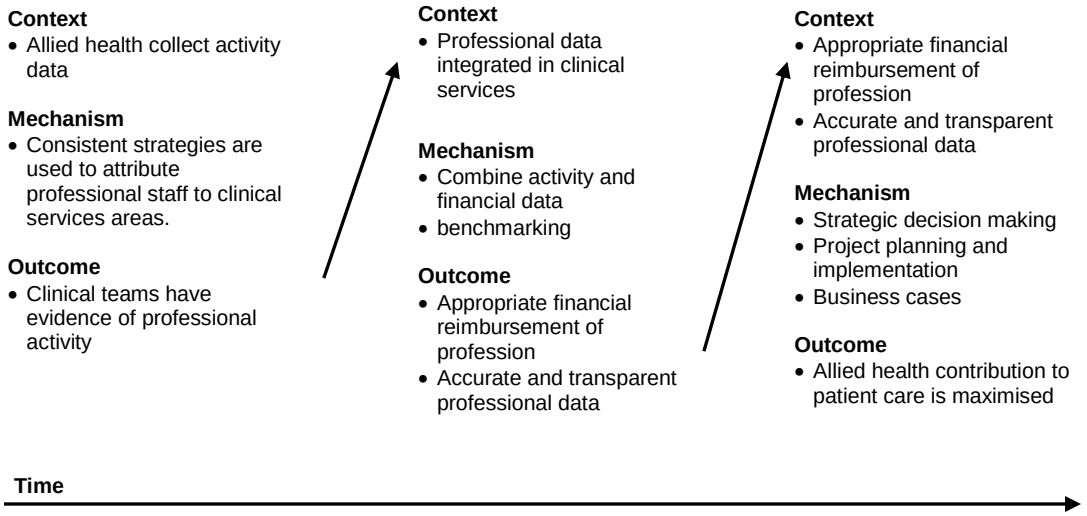

Figure 8: CMO Configuration – Data Management

The way in which allied health professionals understand and use data about their activity and financial performance is another important context that impacts on the outcome of allied health effectiveness. Allied health professional staff regularly collect activity data from the patients they see. At the same time healthcare organisations routinely report on financial and clinical outcome indicators. Allied health groups generally manage budgets well. In contrast, there is widespread variability in the ways in which allied health leaders support the use of allied health data within their professions and across the organisation. They collect a lot of activity data but reporting systems often limit the use and interpretation of this data beyond allied health.

> *"We're a data rich organisation but we're becoming more sophisticated about how we are going to use the data moving forward"*
> **Allied Health Leader**

An initial context that is common across all sites was that allied health professionals collect activity data about the patients they are seeing. This data summarises allied health professionals' clinical activity and was acknowledged by executives as important. They acknowledged that healthcare businesses would like to clarify which allied health professionals are doing clinical interventions to support patients. Allied health leaders described the importance of being able to attribute professional staff to specific clinical areas to understand the basic patterns of service delivery. They described the need to be consistent across all allied health professions, while respecting the clinical diversity. Allied health leaders reinforced the importance of formalizing this data captured, through inclusion in organisational reporting metrics, so others can see and understand it. They also acknowledged the benefit of National and local benchmarking particularly when making caparisons between similar

> *"we actually get that feedback from management on a yearly basis to show trends over time, work load demands within each area, what we are achieving, what we could achieve better"*
> **Allied Health Professional**

clinical services. Examples discussed in other CMOs include memorandums of understanding, integrated matrices and service agreements. An outcome of this mechanism is that clinical teams have data to substantiate professional clinical activity.

> *"making sure that that the data's that's coming out is actually getting used by the business ad used by leaders and decision makers over workforce structure and allocation of FTE to certain services"*
> **Allied Health Leader**

When professional activity data is integrated in clinical services, through routine reporting another set of mechanisms can operate. Allied health leaders described using activity data in combination with financial data to understand trends. Executives also acknowledged this alignment of activity data with financial costs as desirable, because it enabled business processes to monitor, recognise and financially reimburse activity appropriately. However, some executives recognised that this was not often achieved. Allied health leaders developed business rules to create and coordinate dashboards for discussion at business meetings. They described including interactive spreadsheets with data for each profession across each facility. In some health services it was a two dimensional matrix and in others it was three dimensional between profession, directorate and clinical stream. These dashboards commonly provided visibility of professionals, skill mix, quality metrics and budget performance. This mechanism of aligning activity and financial data enabled an outcome where financial reimbursement was appropriate for each profession.

> *"try to match the demand of the service with the availability of resources at those services"*
> **Allied Health Leader**

> *"the [chief executive] wants data to prove how effective allied health are for patient outcomes"* **Allied Health Leader**

With accurate and transparent professional data, another set of mechanisms were observed to occur. Commonly health service executives described mechanisms where allied health professions used their activity data to inform strategic decisions. Allied health leaders described ways they were using their data to demonstrate added business value from their clinical involvement in innovative patient care models. Project management and business planning processes required accurate clinical and financial data. Executives were most concerned with allied health provisions, but allied health directors were focused on combining the right numbers of contributing professional staff for maximum patient benefit. The outcomes reported by executives were to maximise and build the capacity of the allied health workforce to contribute to enhancing patient care.

> *"one of the reasons we'd use it is it helps give us an idea if we are going to expand a service. What are the allied health inputs we need?"* **Executive**

> *"understanding the business of health and understanding how decisions are made and making sure we've got the data to back up any requests"*
> **Allied Health Leader**

> *"If we're making a change in terms of service models… then part of our monitoring would be looking at measures and data in terms of activity, outcomes and patient satisfaction"* **Executive**

These mechanisms were not consistently reported in all participating health services. Reporting data upwards to the executive was not consistent across all sites, and as a consequence there was limited visibility for some organisations of allied health's contributions. Allied health leaders reported that their information systems were inadequate to support service line managers, describing them as not sufficiently agile and connected. Sometimes staff felt that data was used as a strategy to boost their productivity without reason. Further activity did not always capture the complexity of patient care required.

"I don't know that the data necessarily reflect the patient care that's required rather than the numbers we are seeing. It's the length of time one person actually needs to achieve a goal for a patient, compared to us seeing this many occasions of service" **Allied Health Professional**

"I sometimes find that data is used as a bit of a weapon against us … to get more face to face clinical time" **Allied Health Professional**

"I see financially based information. I don't see activity. Now there may be, but it's not within my line of sight in what I do" **Executive**

"it's not very transparent. It's not clear to us who has been funded to do what…it's quite difficult to say…where does our service stop and the next service start" **Executive**

Research Capability

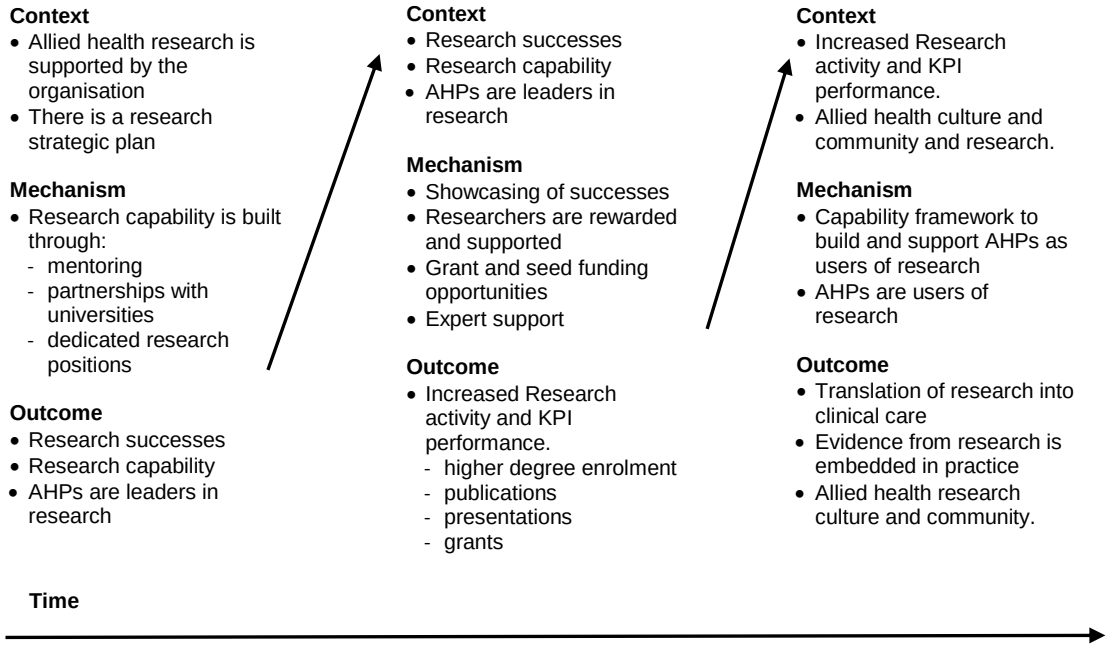

Figure 9: CMO Configuration – Research capability

An important starting point for building a research culture in allied health appears to be the organization's plans and strategies for research, which are then reflected in allied health strategic and governance plans. This reinforces and builds a direction for leaders to become engaged in research that is close to practice. Executives and allied health leaders recognised that allied health staff are committed to research, to help answer clinical questions.

> "*We've looked at partnerships with our university partners to actually start activity*"
> **Allied Health Leader**

Early mechanisms to build research include education and systems to build the capability of individual clinicians who are interested in research. Mentoring relationships, university partnerships and dedicated positions were described across different sites. The combination of strategies seemed to vary between organisations and allied health leaders described matching appropriate strategies for their own levels of staff interest and maturity around research. In many cases, allied health leaders referred to previous centralised funding from the Health Practitioners' (Queensland Health) Certified Agreement, (No.1) 2007 for 15 FTE research facilitator positions across the state from 2008. These positions were established to build research capacity amongst all clinicians and many, but not all positions have been maintained by health services. Currently some health services have prioritised conjoint positions, others have emphasised dedicated research positions and others highlighted the importance of clinical staff having adjunct positions. There was a strong theme of partnerships with universities or research institutes to support research projects. Together, these mechanisms

> "*They just quietly do it…they've got some really successful partnerships with their university partners*"
> **Executive**

achieved an outcome of research success.

> *"what we've been working on is setting the mentoring and support to enable research to happen, because you don't what to scare them…but ethics proposals do take time and its difficult"*
> **Allied Health Leader**

Research success became a context for further mechanisms that developed a higher level of capability. Showcasing successful research projects throughout the organisation and rewarding clinician researchers were seen as positive strategies, which contributed to answering important clinical questions. It was acknowledged by allied health leaders that they needed to support the clinicians who have the skills to do research. The opportunities for seed and grant funding need to be identified and supported and expert research governance and assistance recognised. In some organisations this was available through a central research service, where statistical and health economics consultancy and support was available. Outcomes from this set of mechanisms were recognised as increased numbers of clinical staff enrolled in higher research degrees, increasing numbers of academic papers and conference presentations and success in grant funding. These are some of the more traditional KPIs recognised and supported by university partners.

> *"one of the ways which we've done research capacity building is through the annual research week"*
> **Allied Health Leader**

Increased research activity was then a context for the final stage of research engagement by all staff. This was not mentioned or described by all health services. The allied health leaders of research active organisations described a set of strategies that they used to engage more broadly the allied health professions to understand and use research to improve their clinical practice. As researchers were willing to share their experiences and learning, this continued to build research capacity. Several allied health leaders discussed using a capability framework to get greater involvement from all staff. From entry level, they wanted to ensure all staff are able to use research and be informed research consumers. They would then be more able to identify knowledge gaps though asking clinical questions, to which their research active colleagues could generate new research to answer these clinically important questions. Together they could achieve the highly desirable outcome of using research to inform clinical practice and specifically to embed new practice.

> *"I think the research arm that we've actually spent time in developing has been very effective, both from a profile but also from establishing evidence-based practice and then being able to implement that practice"*
> **Allied Health Professional**

> *"we've got research in role descriptions, it's in the capability development framework, its in the PAD. I don't want everyone going off and doing research but I want them to be at least consuming some research"*
> **Allied Health Leader**

> "now we are seeing more about health services research and how we provide the service and the importance of …improving outcomes"
> **Allied Health Professional**

Allied health leaders and professionals reported that research successes also presented an opportunity for collaboration with health professionals from other disciplines. This was further support where allied health research leaders held research roles within organisations that were not allied health specific and contributed more broadly to the health research sphere. Additionally, engagement of allied health professionals in interdisciplinary research lead to translation of research evidence with implications for whole of health system design and improvement.

> *"Research wise, we don't get the time to do it"*
> **Allied Health Professional**

Where there was not a strategic plan for research, dedicated research roles, or systems to support allied health research, research activity was lower. Allied health professionals at these sites reported gaps in time, support and resources to engage in research. Without support to engage in research allied health professional were reluctant to engage in research activity, even where there was a desire and interest. However, this did not mean that research and translation of research did not occur at these HHSs. Rather where research occurred it was supported by the allied health professionals themselves through mechanisms that included higher degree research outside of the organisation and working to complete research in addition their clinical caseload. This work occurred in isolation, without a community of allied health researchers and leadership for support.

> *So that's been a huge loss* [loss of funded positions] *for us in the succession planning and in the research because we used the people that we put on as training positions…as research…we lost both the research capacity but also our ability to… give them some training so that if we did have a vacancy we had a ready pool of people.*
> **Allied Health Professional**

> "*I had an idea and I went over to the uni. Someone said, that's a great idea for a PhD, and I did it. It was like having to bash down through the jungle to try and work my way through it…it was just horrendous. No one was there to support me*."
> **Allied Health Professional**

Education and Learning Opportunities

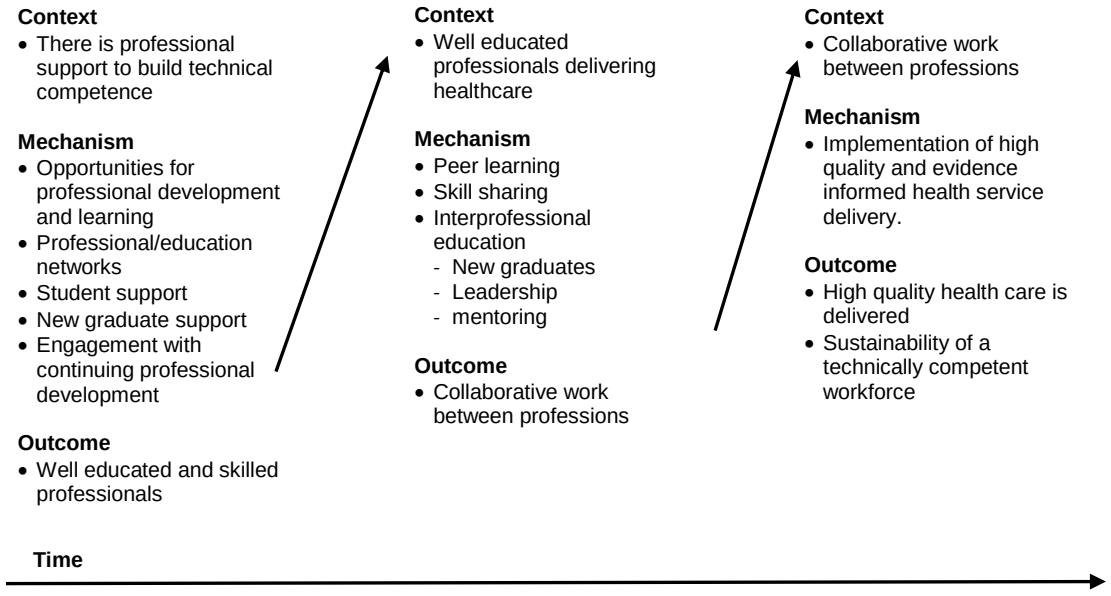

Figure 10: CMO configuration – Education and Learning Opportunities

Previous centralised funding from the Allied Health Professions Office Queensland established clinical education positions across the state. Positions were established primarily for pre-entry clinical education and to support the new graduate workforce. How these positions are utilised and maintained across health services is variable.

> *"profession specific technical training is well bedded down in terms of competencies or capabilities through supervision and performance improvement plans"*
> **Allied Health Leader**

An important context for education of allied health staff is identified is the professional support for technical competence, which is often embodied as an important component of allied health professional governance. Technical skills are an important part of every profession's contribution to patient care. Clinical educators have set up networks, organised and supported student placements, as they recognise that students who have enjoyed their placement often return to work in the same health service. Professions traditionally have structures and systems in place to ensure clinical staff are well educated and well trained. Professional leaders were seen as key to valuing and supporting education and professional development for students and staff. New graduates have clear orientation and learning supports, while all staff have continuing professional development opportunities, supported by their professional leaders. Allied health leaders recognised that good allied health governance included education and research. The obligation to develop the next

> *"having training positions, new graduate positions, having some positions rotate, other positions rotate less often and some positions not rotating at all and managing those elements with the local clinical teams in partnership,,, will always be an ongoing challenge"*
> **Allied Health Leader**

generation of workforce was strongly reported by allied health leaders. The outcome of this mechanism was commonly described as well-educated and appropriately skilled professional staff.

> *"students become our workforce… if we give them a good experience here they want to come back, plus they are work ready. They know the wards"*
> **Allied Health Leader**

The next mechanism was triggered in a context where professional staff were appropriately educated and skilled for their contributions to patient care. The mechanism of interprofessional education was seen as a logical extension by some allied health leaders and a challenge by others. Allied health leaders described creating common initiatives around new graduates learning together, such as peer supervision models where they could support each other within and across professions. Another initiative mentioned was developing interprofessional leadership, capability and mentoring programmes. Some clinical service groups also provided specific team-based continuing professional development and educational opportunities. An outcome of this mechanism is described as better collaborative work, because professionals have learned together, from each other and improved their mutual understanding and respect of other professions.

> *"it's starting the conversation of how we work together"*
> **Allied Health Leader**

Workforce Capacity

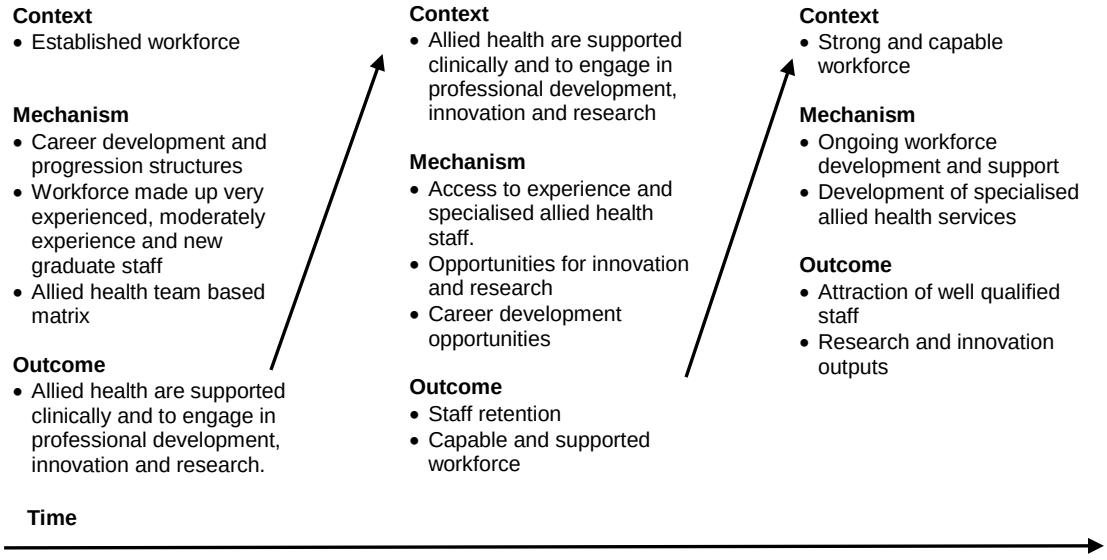

Figure 11: CMO configuration – Workforce Capacity

The size and capacity of the allied health workforce varies greatly between health services in metropolitan and rural and remote areas. Within this sample of health services, there is a range of total full time equivalent of allied health positions of 45-1994. The size and capacity of the workforce is another important contextual factor for allied health success. This context functions quite differently in well-staffed metropolitan health services and is reported as a challenge for rural and remote health services.

> *"once the career structure is in place we now have people staying…and going up the ladder"*
> **Allied Health Leader**

Nursing and medical professions are recognised as older and well established in relation to staff procedures and career structures. Allied health leaders recognised that structures to promote career progression are important. This is more pronounced in rural and remote areas where young professional staff will come to work early in their careers. They are attracted for the diverse career opportunities and often well supported in their early development. However, there is a lack of management positions and leadership development opportunities. Without formal career progression opportunities, younger staff tend to leave for other more attractive opportunities. An outcome of having career progression structures is that allied health staff are retained within health services.

> *"at the end of the year we'd lose the majority of our staff especially in smaller professions…they would either move back to the [city] or they'd go overseas or get married… not because they did not like working here…but there was no career progression"*
> **Allied Health Leader**

Two other mechanism were described in some but not all health services, as potentially contributing to the outcome of staff retention. Allied health leaders described the benefits of working in a matrix were staff identify professionally and clinically with their

local clinical teams. In this way allied health staff were reported as an integrated part of the clinical team. Creative use of AHPOQ funding for allied health assistant roles and having the drive and energy to put business cases together to implement new positions and opportunities.

> *"things that we struggle out here with small workforces is… when there's in each discipline two people or even only one person, when you lose 50 per cent of your workforce to the flu for a week it makes it a lot more difficult to manage*."
> **Allied Health Professional**

Smaller workforces were affected by the economies of scale. In a smaller workforces there were less total research and workforce development positions. Whilst often proportionate to workforce size, ability to contribute to and undertake strategy, service development and research was limited by resourcing. With smaller total numbers, allied health were stretched in their capacity for professional representation and broader workforce engagement. A similar was seen for smaller professions within allied health, which was amplified by isolation from a rural setting.

> *"there's funding where you put a project idea. Then they go, yep, that sounds great or no, go away and refine it… when it's up and running, they help you… walk through with you… ultimately there's an outcome and hopefully [there's] efficiencies.*"
> **Allied Health Professional**

Conversely in larger health services there were opportunities for developing more specialised services, being involved in innovation, and research. For example, professionals reported taking advantage of funding for innovation that was made available within their health service. Smaller professions also reported feeling more supported and having more influence through being part of a larger allied health group. The same benefits of scale also applied to larger professions with allied health, who had support from within their own discipline.

> *"we're one of the small professions – s/he's tended to make me feel that we're part of the group again and it's feels fairly collegiate… think there's a fair bit of influence.*"
> **Allied Health Professional**

> *"the patients that we treat are from such a wide area but we don't have any time whatsoever for research or education… I'm only a new HP3… and the education I receive is minimal… it's all me teaching myself more and more. If I've got a clinical question I do not have anybody to ask because there's nobody here*"
> **Allied Health Professional**

Discussion

This study represents an extremely comprehensive investigation of the perceptions of allied health leaders and staff which confirms that key aspects of allied health management structures, processes and practice influence governance and the delivery of allied health services. Fifty-eight allied health professionals contributed from nine Hospital and Health Services. These perceptions have been compared with and validated by interviews with executives in five of the nine participating sites. The use of a qualitative realist evaluation methodology enabled the identification of the mechanisms that work to achieve effective and efficient outcomes, within specific contexts. A deeper explanation of how components of the organisational context influence these outcomes through identified mechanisms begins to explain why this might happen.

A narrative summary demonstrated both the diversity of allied health management structures throughout Queensland and it highlighted the importance of key components of the organisational structure which impacted on allied health governance and service delivery. Most commonly the context related to key aspects of organisational structures. Three aspects of organisational context were identified as having the greatest potential and impact for effective allied health management; executive allied health leadership roles, integrated professional and operational accountabilities and systems that support education and research opportunities. Where these contexts were combined with sufficient organisational stability, there was an increased impact and flow on effects that were supported across time.

From a deeper investigation of the range of different contexts, mechanisms were confidentially compared between health services as to their ability to produce effective outcomes. CMO configurations were explained to demonstrate how a specific context triggered a unique mechanism to produce the specific outcome. In many cases there was a ripple effect between CMOs that showed the close interdependencies as the outcome of one context became the context for a different set of mechanisms over time. This ripple effect of CMO sequences has been previously observed and provides a better temporal explanation of some of these complex mechanisms [12]. Most of the mechanisms identified are familiar to allied health managers; however, the patterns in which they facilitate key outcomes over time are unique. They have been described in detail in the results and are summarised in the following text and table.

Executive allied health leadership roles provide leaders with high level representation, together with opportunities to build positive relationships with other executives. They can use their influence in organisational planning and decision making to ensure clear allied health roles are defined for successful service delivery. Delivering results builds a positive reputation which generates trust from other executives and further opportunities to demonstrate allied health quality in innovative models of care. These mechanisms are reinforced when allied health leaders have offices in close proximity to their executive colleagues and when organisations have stable structures. Regular informal and strategic communication builds visibility and generates awareness, within collegial and collaborative partnerships that facilitate the delivery of positive allied

health outcomes. A stable structure embeds defined roles and also builds trust through longer term planning and delivery of both clinical and business benefits. Organisational stability provides opportunities for systems, structures and processes that promote positive outcomes to take effect. This occurs through the mechanism of time that allows strategy to be fully implemented and embedded. Organisational stability when combined with other contexts that lead to beneficial outcomes is seen to lead to greater impact in breadth and scale. Further, flow on effects from contexts that promote desirable outcomes, are seen when there is stability of this context.

An integrated and explicit model of accountabilities is required to separate professional governance and operational responsibilities. Professional governance systems embed the management and support of the clinical workforce, most efficiently within professional disciplines. Operational management systems define how clinical services should be delivered, monitored and measured. Consistent business rules and strategies are required to set and manage expectations between allied health professions and clinical services so that appropriate professional staff are integrated within clinical teams to provide high quality care. Credible, skilled and respected allied health leaders are required to enact these systems. Allied health leaders need to create effective team working and communication systems to build respect and trust between professional disciplines. Further they need effective data management systems to be able attribute professional staff to clinical areas and align clinical activity with financial costs in order to plan and implement clinical service delivery. Allied health leaders need business and strategic skills to build integrated service delivery models with appropriate staffing profiles to meet patient needs.

The allied health workforce is a capable one, where educational and learning opportunities are initially provided within disciplines to build technical capabilities. Career development and progression opportunities are required to engage and retain staff. When interprofessional learning opportunities are provided, collaborative work between professionals in enhanced. Building research capability is also important for staff retention and for quality service provision. When allied health leaders support and celebrate research success, they can build a greater desire for understanding and using research in all staff. This can lead to the translation of research evidence to inform and improve clinical practice. Ultimately, this can have a reinforcing effect on motivation for learning, retention and delivering positive patient and business outcomes for the health service.

These temporal patterns of CMOs have been described in a deliberate positive sequence, but in reality they are seldom fully implemented. Healthcare organisations often limit the contextual components and allied health leaders may not be able to enact all appropriate mechanisms. The mechanisms that support effective allied health management, governance and leadership have been described for this participant groups.

Table 3 provides a summary of all CMO configurations.

	Context	Mechanism/s	Outcome
Allied health executive roles	allied health leader is a member of executive team	• representation through positive relationships • defined roles and services • trusted to deliver results	• influence in planning and decision making • positive reputation • innovative, quality clinical care
Office location	allied health leader's office is near executives	• close to peer executives • visibility and strategic access • collaborative engagement	• opportunities for communication • collegiate relationships • effective contributions
Organisational stability	stable structure with defined leadership roles	• authority and autonomy • ability for long range planning • support to complete work	• mandate for decision making • implementation of plans • quality and efficient outcomes
Professional and operational accountabilities	Professional governance systems	• clinical workforce accountability • operational management strategies • business rules	• skilled clinicians deliver care • allied health integrated into clinical services • integrated clinical care
Leadership and communication systems	credible skilled respected leaders	• effective communication and teamwork • business and strategic skills • integrated models of care	• respect and trust from peers and executives • allied health influence • add value to patient outcomes
Data management	activity data collection strategies	• staff appropriately attributed to clinical areas • activity and financial data • strategic decision making	• professionals in clinical teams • appropriate financial reimbursement • maximal impact to patient care from allied health
Research capability	strategic plan and support for research	• build research capability • showcase, support and reward research • support staff use of research	• research successes • increased research activity and KPIs • research informs clinical practice
Education and learning opportunities	professions build technical competence	• professional development and learning opportunities • interprofessional education • implementation of research	• well educated and skilled professionals • collaborative working • sustainable high quality care
Workforce capacity	established workforce	• career development and progression • access to experienced, skilled staff • develop specialised services	• engage in professional development • staff retention of capable workforce • innovation and research

Table 3: Summary of all CMO configurations

Aspects of the organisational context and their resulting sequential patterns of CMO configurations observed in this study align closely with aspects of the extant literature. Strong representation of allied health at senior and executive levels is well supported as a strategy to promote allied health identity and influence service planning [5, 6]. The visibility of effective leaders is also key [7]. Most recently, there are consistencies to a Consensus Statement of Governance prepared by NSW Allied Health Directors in July 2013 [2]. Principles were delineated as recommendations without a clear methodology or evidence for how they were constructed. However, Queensland allied health professionals have provided qualitative evidence regarding contexts in which allied health services are delivered, that aligns with the following principles from the report:

- executive director allied health roles are positioned to provide expert allied health advice to chief executives and other executives in areas of strategy, planning, quality and safety.
- contexts that include professional leadership and governance for each profession support effective and appropriate leadership.
- allied health services with allocated budget for operational and service delivery responsibilities manage and implement strategy effectively and efficiently
- contexts where allied health structures integrate allied health clinical services across clinical streams and executive structures facilitate representation and collaboration
- contexts that provide for discipline specific clinical support, education, supervision and engagement in research promote a sustainable, skilled and capable allied health workforce.

The mechanisms that support effective allied health management, governance and leadership have been described by this group of Queensland allied health leaders and professionals, and consistently supported by their executive managers. There may also be alternative mechanisms that can be activated in different contexts. Ideally, these CMO configurations require another level of practical verification and validation, to determine the underlying theoretical explanations. This could also identify if alternative mechanisms can be activated in the specific contexts identified.

> *"It's important to have processes in place to ensure strong clinical governance. Part of that is to ensure there are ordered evaluation mechanisms in place as well as education and training of staff so that they understand what their responsibility and accountability is… also reporting that information back to the workforce is important for transparency*"
> **Allied Health Leader**

Conclusion

This study provides a comprehensive report of how key components of organisational structure trigger management mechanisms and generate positive outcomes for the allied health workforce and the population it serves. Three aspects of organisational context were identified as having the greatest potential and impact for effective allied health management; executive allied health leadership roles, integrated professional and operational accountabilities and systems that support education and research opportunities. Most identified mechanisms are familiar to allied health managers but the detailed patterns are described in detail as perceived by current staff. There is a need to investigate and discuss these sequential CMO configurations to determine organisational and management recommendations.

> *"It's achieved through having a good understanding of what governance is, having that documents and having a shared understanding with colleagues"*
> **Allied Health Leader**

Appendices

Appendix A. Interview template for Allied Health Leaders

In preparation, I'd like to invite you to reflect on some of the key topics which will be discussed in a semi-structured interview format. During the interview we will discuss and reflect the following areas:

- Your role in the organisation
- Your organisational structure
- Your successes and achievements
- Barriers and challenges as an allied health leader
- Influence of allied health
- How data is use and interpreted
- Allied Health governance
- Research and education

Appendix B. Interview Questions for focus group

1. Please introduce yourself including your role and professional background and where you work.

2. What do you consider to be the greatest success/es that your allied health leader has achieved in their role?

- What do you feel contributed to this success? How?
- What were the organisational factors that contributed? How?

3. What do you consider to be some the biggest barriers or challenges to effectiveness for allied health leadership?

- How do you feel these barrier limit success
- What organisational factors present challenges to effectiveness? How?

4. How are allied health effective in having influence within your organisation?

- Who do you consider to be strong allied health influencers in your organisation and how have they achieved this?
- What do you feel contributes to successful influence for allied health? How?
- What organisational factors do you feel contribute to the effective influence for allied health? How?
- Are you aware of allied health professionals in executive positions in the organisation? Do they identify with and represent themselves as allied health professionals?

5. How is the allied health workforce perceived in your organisation?

- How has the allied health leader or others built this allied health workforce?
- What do you feel influences outcomes for the allied health work force? How?
- What organisational factors contribute to allied health outcomes? How?

6. How do you use and interpret activity and financial data relating to allied health as part of your role?

- How does this influence outcomes for allied health
- How does the structure of you organisation influence how data is used and interpreted?

7. How is effective allied health governance achieved?

- What factors are important for effectiveness in allied health governance? How?
- What factors of organisational structure influence allied health governance? How?

8. What has contributed to success for allied health in areas of research and education in your organisation?

- What factors influence successes in research and education? How?
- What factors of organisational structure influence research and education outcomes? How?

9. How stable do you perceive the organisational structure to be?

- How does stability and change in your organisation influence outcomes for allied health?

Abbreviations

AHPOQ	Allied Health Professions' Office of Queensland
AH	Allied Health
AHL	Allied Health Leader
AHP	Allied Health Professional
AHPOQ	Allied Health Professions' Office of Queensland
CMO	Context, mechanism, outcome configuration
JD	Jessica Dawber
SM	Sharon Mickan
NC	Natasha Crow

Definition of Terms

Allied health leader	For the purpose of this report allied health leaders are the holder of the highest allied health position within their organisation structure.
Allied health professional	For the purpose of this report allied health professionals refers to Queensland Health employees with the following professions: Audiology Clinical Measurements Exercise Physiology Leisure Therapy Music Therapy Neurophysiology Nuclear Medicine Technology Nutrition/Dietetics Occupational Therapy Orthoptics Orthotics / Prosthetics Pharmacy Physiotherapy Podiatry Psychology Radiation Therapy Radiography Rehabilitation Engineering Social Work Sonography Speech Pathology
Context	The environment in which allied health operates including the features of the hospital and health service and the translation of this e.g. organizational structure.
Context, Mechanism, Outcome (CMO) configurations	The relationship between context, mechanism and outcomes and the flow on effect which links to other contexts, mechanism and outcomes. CMO configurations are represented in diagrams and a described in the results section of the report.
Executive	For the purpose of this report executive refers non-allied health members of the organisations executive team. Whilst it is acknowledged that some allied health leaders are executives, this report uses the term 'allied health leader' in reference allied health executives, directors and clinical leads alike.
HP3/HP4	Health Practitioner (HP) level as defined by the *Health Practitioners and Dental Officers (Queensland Health) Certified Agreement (No. 1) 2015*. The HP level outlines the knowledge, skills and accountabilities for allied health professionals employed by Queensland Health.
Mechanism	Mechanism was understood as the process through which this context lead to outcomes and included activities e.g. the use of data.

Operational Management	Management and delivery of defined clinical services
Outcome	Outcomes are understood as the effect produced, such quality and efficiency.
Professional governance	Accountable systems for managing and supporting a clinical workforce

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