

2020

## Evaluation of Structural Change in Primary Care

Alex McLaren

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# Evaluation of Structural Change in Primary Care

Alex McLaren

Supervisors:

Professor Kathy Eagar  
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This thesis is presented as part of the requirement for the conferral of the degree:

Doctor of Business Administration

This research has been conducted with the support of the Australian Government Research

Training Program Scholarship

University of Wollongong

School of Accounting, Economics and Finance

December 2020

# **Abstract**

## **Purpose**

National health systems are complex and new initiatives are continually being introduced. Well-established instruments exist for evaluating the outcomes of short-term projects and the introduction of new programs within the health system. However, large scale reform involving substantial structural change challenges the ability of existing tools to appropriately evaluate outcomes. In Australia, the National Disability Insurance Scheme (NDIS) and the Health Care Home (HCH) initiatives are examples of structural change although they are not widely recognised as such. This research makes an important contribution to knowledge by exploring structural change and using this exploration to develop new methods for evaluating structural change in the context of primary care in Australia.

## **Background**

Structural change, also known as ‘reform’, is habitually used by governments as a change tool (Braithwaite, Westbrook & Iedema 2005). In reform, the government plays a key role as investor and leader but does not usually have the tools to evaluate its interventions (Mazzucato 2015). Structural change initiatives in health systems are used by governments for the advancement of technology, health services and demographic improvement in health care systems (Roald & Edgren 2001). Structural change is often also attempted as a way to cut costs.

Structural change alters the way care is delivered to a nation but makes an expensive dent in the national budget that is seldom justified (Donato & Segal 2010; Dwyer 2004). Inconsistent evaluation methodologies and lack of standardisation in keywords and medical subject headings (MeSH) terms make the evaluation of structural change

challenging (Asada et al. 2017; Korenstein et al. 2016). Perhaps for this reason, structural change in health care has been misunderstood and perceived as an affliction with negative effects on health services organisations (Coid & Davies 2008), causing reform fatigue (Wynen, Verhoest & Kleizen 2016) and without evidence-based benefits (Braithwaite, Westbrook & Iedema 2005; Pollitt 2009).

### **Design/Methodological Approach**

The research philosophy adopted is interpretivist with an inductive approach by means of a Delphi questionnaire survey as strategy. Interpretivism was adopted because structural change in primary care is complex and under-researched. A Delphi study is recommended in these instances (Day & Bobeva 2005). Experts in health reform from Australia and a minority from Canada and UK, kindly participated in both rounds of the Delphi study.

### **Findings**

This research has resulted in a working definition of structural change in primary care and has identified the critical role of the government as initiator of structural change. Principal findings include the importance and benefits of context awareness and the need for outcomes of structural change to be evaluated over time. An intervention becomes context-aware when it uses context to provide relevant services. Context-awareness is designed to ensure that the user is provided with the appropriate service as the intervention adapts to the environment of its users (Bisgaard, Heise & Steffensen 2004; Gubert, da Costa & da Rosa Righi 2019; Lieberman & Selker 2000). Context awareness is vital for the success and evaluation of structural change interventions in primary care. Findings of the Delphi study were used to create a framework and prototype tool to evaluate the outcomes of structural change.



## **Research Limitations**

This research was undertaken in Australia and is largely focused on Australia. The Delphi study was capped at two rounds because of time and resource constraints. While more rounds are typically required in a Delphi study to build consensus (Keeney, McKenna & Hasson 2011; Scott & Black 1991), two rounds proved to be sufficient in this case to explore the opinions of the respondents,.

## **Implications**

Taxpayer resources are being cyclically used for funding structural change interventions nationally and internationally (Braithwaite, Westbrook & Iedema 2005). The use of public funds calls for a responsibility to use these funds in the most cost-effective way and to critically evaluate the real impact and value of structural change. The government plays a key role as investor of these funds and as the leader of structural change.

The multi-level evaluation tool for primary care developed through this research is built on evaluation principles that embed accountability for the government and for those on the receiving end of structural change.

## **Originality/Value**

This research is novel in its exploration of structural change in primary care in Australia. It proposes a multi-level evaluation framework that incorporates context-awareness at four levels consistent with the Quadruple Aim: patient, provider, system and cost of health care. An evaluation tool has been developed as the final stage of this study that integrates stakeholders, context awareness and time into the evaluation process.

## **Keywords**

Structural reform, structural transformation, health care reform, structural interventions in public health, complex structural interventions, structural change, large-scale transformational change, organisational change in the public sector, care delivery system reform, evaluation framework, evaluation tool, restructure, policy reform, health policy, health system, multi-level framework, context awareness, context in evaluation, primary care, primary health care, general practice, Quadruple Aim, health care home, prototype.

## Acknowledgments

I am filled with awe and gratitude on the completion of this thesis. A good supervisor is like a good surgeon; one who recognises the unique message a pupil carries buried deep inside and skilfully carves it out.

This work was possible thanks to the excellent supervision of my principal supervisor Senior Professor Kathy Eagar and co-supervisor Professor Helen Hasan. Their expertise, care and support will be in my memory for the rest of my days. When I felt small in a land of intellectually gifted giants, they gracefully took me under their wing and poured wisdom and skill over me. I am forever grateful.

Any good out of this work is because they believed in me.

I would also like to thank and acknowledge the amazing encouragement by my early supervisor Dr. Malcolm Masso for mentoring and helping me believe I could do this.

You too have a huge piece of heaven!

A big thank you to the people of the Australian Health Services Research Institute, without whose intellectual brilliance this research would not have been possible. In particular, thanks to Cristina Thompson, Darcy Morris, David Fildes and David Webster for their kindness and expertise. And to beautiful Erin Ritchie for helping me 'go live' with a smile.

To my dad, sister and brothers for their continued support and understanding when I could not be there, you loved me the same. To my mum, now in heaven, for her tenacity and sacrifice.

To my church and friends for holding my hands up in prayer so I would not give up.

To my God for His Faithfulness.

## **Certification**

*I, Alex McLaren, declare that this thesis submitted in fulfilment of the requirements for the conferral of the degree Doctor of Business Administration, from the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.*

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***Alex McLaren***

*December 2020*

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## **Glossary**

### **Chronic disease**

Term applied to a diverse group of diseases, such as heart disease, cancer and arthritis that tend to be long-lasting and persistent in their symptoms or development. Although these features also apply to some communicable diseases (infections), the term is usually confined to non-communicable diseases (National Health and Hospitals Reform Commission 2009, p. 294).

### **Health Care Home**

"An existing general practice or Aboriginal Community Controlled Health Service (ACCHS) that commits to a systematic approach to chronic disease management in primary care, which supports accountability for ongoing high-quality patient care. It uses an evidence-based, coordinated, multi-disciplinary model of care that aims to improve efficiencies and promote innovation in primary care services" (Primary Health Networks: Grant Programme Guidelines, Department of Health 2016).

### **Medicare**

Australia's universal health care system that provides access to free treatment as a public (Medicare) patient in a public hospital and free or subsidised treatment by medical practitioners including general practitioners, specialists, participating optometrists or dentists (for specified services only). Medicare is financed through progressive income tax and an income-related Medicare levy (National Health and Hospitals Reform Commission 2009, p. 296).

### **Primary Health Care**

"Services in the community accessed directly by consumers. It includes primary medical care (general practice), nursing and other services such as community health services, pharmacists, Aboriginal health workers, physiotherapists, podiatrists, dental care and other registered practitioners. It includes community mental health, domiciliary nursing, maternity and early childhood, child and family health, sexual and reproductive health, and other services" (National Health and Hospitals Reform Commission 2009, p. 297). For brevity, this thesis will use the term 'primary care' to mean primary health care.

### **Public health**

Public health refers to the level of health in the population, to actions that improve that level or to related study. Activities aimed at benefiting a population tend to emphasise prevention, protection and health promotion as distinct from treatment tailored to individuals with symptoms. Examples include provision of a clean water supply and good sewerage, conduct of antismoking education campaigns, and screening for diseases such as cancer of the breast and cervix. (National Health and Hospitals Reform Commission 2009, p. 297).

### **Structural Change**

Structural change is known as policy, systems and environmental change (Asada et al. 2017). Coid and Davies (2008) consider structural changes as "commonly inflicted on public health care services and include the creation of new organizations, agencies and positions, and the merging or abolition of old ones" (p. 278).

### **Structural Reform**

"Structural reforms imply changes to the way the government works" (Anon, The Economist, 2017 p. 1). Structural reform deals with hindrances to economic growth to improve productivity. Structural reforms include policies that foster innovation, improve business environments and address issues of population ageing (European Commission 2017).

### **Structure**

"The settings, qualifications of providers and administrative systems through which care takes place" (Ayanian & Markel 2016, p. 206).

### **Quadruple Aim**

The Quadruple Aim seeks to optimise the health system in four dimensions of performance by improving population health, patient experience and provider satisfaction whilst reducing cost of health care (Bodenheimer & Sinsky 2002; Sikka & Leape 2015).



# Chapter 1 Introduction

## 1.1 Introduction

According to Swerissen, Duckett and Wright (2016), primary care is a renovator's opportunity and the Health Care Home (HCH) initiative is an example of how policy makers draft structural change initiatives that not necessarily *take* when deployed. *Renovating* primary care and, particularly, General Practice is plagued with complexities, chaos and outcome uncertainties. My past involvement working in Divisions of General Practice and having experienced *restructure* when these became Medicare Locals sparked my interest for the development of this research.

To my knowledge, this is the first research in examining a definition of structural change and its evaluation in primary care. The context of the research presented in this thesis is the Australian health system that, like most public health systems, is complex and is continually undergoing change. Change can range from the introduction of a small project, or a change in existing programs to the introduction of new large-scale programs that is so substantial that it involves structural change.

Structural change impacts each stakeholder (Jolley et al. 2008). This is achieved through involving changes to funding mechanisms (Donato & Segal 2010), changing the way patients access care (Martsolf et al. 2015), and altering the ways in which practitioners deliver patient-based care (Zlateva et al. 2015).

Structural change is disruptive to pre-existing structures, systems and cultures. In Australia, structural change consistently occurs when a new leader gets into power i.e. political party in government, new CEO in industry (Jolley et al. 2008; Pollitt 2009).

Large amounts of public funds and other resources are required for structural change and the consequences for a nation, organisation or community are usually long-term (Pollitt 2009).

History has shown that newly positioned government authorities opt for structural change to make a statement about their leadership (Jolley et al. 2008).

In healthcare, structural change alters the way care is delivered to a nation and it makes an expensive dent in the National budget that seldom is justified (Dwyer 2004; Donato & Segal 2010). For this reason, the evaluation of structural change in health care is important.

Structural change is perceived as a way of improving health care but it is currently under-researched and not well understood (Asada et al. 2017; Aysola et al. 2015; Braithwaite, Westbrook & Iedema 2005).

In primary care, structural change is not only important but a game changer in the way service is delivered to patients, how disease is managed, and how funds are maximised. Interestingly, evidence on the linkages between structural change and its outcomes is uncommon (Coid & Davies 2008; Jolley et al. 2008; Wynen, Verhoest & Kleizen 2016). This present research examines the notion and evaluation of structural change in primary care by presenting a preliminary definition and a multi-level evaluation framework through a prototype applied to General Practice.

## **1.2 Background**

There is no consensus in the national and international literature on a definition and evaluation of structural change (Asada et al. 2017). Some authors have concerns about structural change and its evaluation (Coid & Davies 2008; Gupta et al. 2008; Jolley et al. 2008; Wynen, Verhoest & Kleizen 2016). In many cases, structural change is not *treated* differently to regular projects and

programs overlooking, in the process, the nature, complexities and magnitude of structural change.

A suitable evaluation tool based on consultation with experts and analysis of linkages (or the lack of them) between structural change and health care delivery and outcomes will contribute towards filling gaps and add to the current body of knowledge.

To put this thesis in context, I looked at structural change in Australia and particularly in the field of primary care with a focus on evaluation.

Historically, centralisation and decentralisation patterns of governance have been cyclical. In 2011, hospital services were assigned to the administration of regional organisations called Local Health Networks (LHNs) for the purposes of integrating Commonwealth and State-funded health care services and for the improvement of chronic disease management (Rix, Owen & Eagar 2005).

Initiatives to reform how Primary Health Care is financed in Australia go back to the 2009 National Health and Hospital Reform Commission report, 'A Healthier Future for All Australians', in which access to services, equity, quality, innovation and governance in Primary Health Care were of concern (Fitzgerald 2015).

More broadly, there is some evidence that these reconfigurations are effective but rather damaging to the therapeutic relationship between patient and carer (Coid & Davies 2008). A lack of government support towards systematic evaluations that potentially challenge party political objectives is highly influential toward reform. Jolley et al. (2008) cite this as one of the main

reasons for the lack of evidence on the effectiveness of health care reforms in Australia and the world.

Structural change involves changes to payment structure (Fitzgerald 2015), prescriptive practices among agencies via reforms (Ozcan & Khushalani 2016), and management and governance changes (Cockerill & Lemieux Charles 1998). Modifications to health care delivery alter the structure of the entities, service model and system (Korenstein et al. 2016).

In this thesis I make the case that the evaluation of structural change should focus on how it impacts the system's ability to deliver improved models of care which are context aware when viewed from a long-term perspective.

One of the reasons why structural reform is seldom evaluated is political; evaluation is triggered when reform deficiencies are highlighted by those that will make the next round of changes to support their claims (Dwyer 2004). In Australia, structural change consistently occurs when a new leader gets into power (Jolley et al. 2008; Pollitt 2009) i.e. a new political party in government.

### **1.3 Gaps in the Literature**

The research presented in this thesis addresses the following identified gaps in the literature:

- No consensus on a definition of structural change in health (Asada et al. 2017),
- Lack of evidence of the impact of structural change (Coid & Davies 2008; Jolley et al. 2008; Wynen, Verhoest & Kleizen 2016),
- The evaluation of structural change in healthcare is under researched (Dwyer 2004).

No prior research has proposed a framework that assesses structural change including context awareness, originating policy and outcomes analysed at multiple levels of stakeholders.

To address these gaps, this study first develops a conceptual framework on structural change in primary care from national and international evidence (Chapter 2). Secondly, it validates the framework via a Delphi technique (Chapters 4 and 5) and lastly, an adapted evaluation tool is prototyped for General Practice considering the Health Care Home (HCH) initiative as an example (Chapter 6).

## **1.4 Aims of the Study**

The aims of this study are to:

1. Examine the definition of Structural Change in healthcare,
2. Develop a conceptual framework to evaluate structural change,
3. Consult with experts to identify domains and elements of structural change relevant to its evaluation,
4. Adopt or adapt a tool suitable for the evaluation of structural change in primary care,
5. Develop a prototype for structural change evaluation applied to General Practice.

This thesis advances the understanding of structural change in primary care by drafting a definition of structural change in primary care, examining a suitable framework for its evaluation and creating a prototype applied to General Practice.

These findings could have an impact on policy and funds optimisation through improved decision making in primary care. Insights may extend to other industries. Further, this research

sheds light on current methodologies used in structural change evaluation.

## **1.5 Research Questions**

The following questions are investigated in this research:

- What is structural change?
  - What are the features of structural change in the context of the Australian primary care system?
  - To what extent are structural change interventions different from regular projects and programs that aim to achieve change?
- What are some of the key issues in the evaluation of structural change in the primary care system in Australia?
- What are the characteristics of a framework that can be used for the evaluation of structural change?
- To what extent can any existing evaluation tools be adopted or adapted to make them suitable for the evaluation of structural change in the primary care system?

## **1.6 Research Approach**

A “research onion” is depicted in Figure 1-1 Research Onion adapted from Saunders, Lewis & Thornhill (2019) illustrates the methodology used in this research:

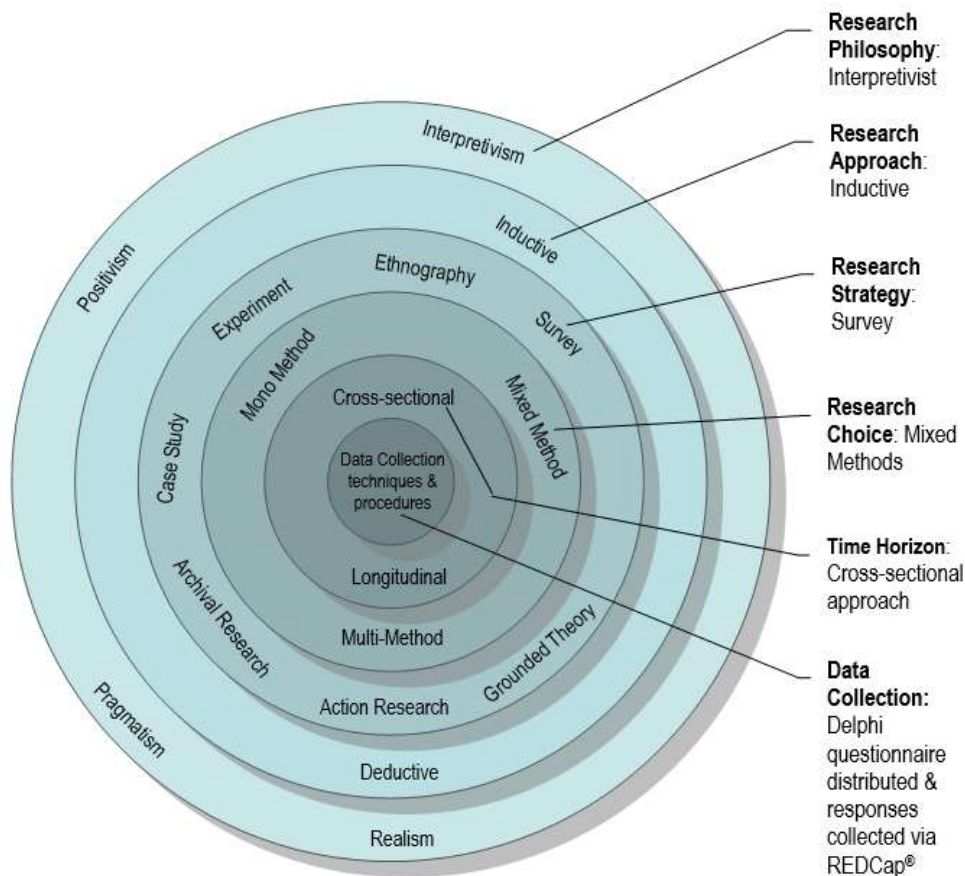


Figure 1-1 Research Onion adapted from Saunders, Lewis & Thornhill (2019)

The research onion has been used in business and social sciences doctoral studies to describe research approaches and methodologies (Haydam & Steenkamp 2000; Zefeiti & Mohamad 2015; Musson & Stebbings 2012). The research philosophy adopted for this study is interpretivist with an inductive approach by means of a Delphi questionnaire survey as strategy. The use of a quantitative (descriptive) method with a cross-sectional approach suited the exploration of the aims and research questions in this research. Interpretivism has been previously used in quantitative investigations (Westerman 2006). Primary and secondary sources in the form of two rounds of a Delphi questionnaire, academic literature and press articles provided the data for analysis. Each layer of the research onion is explained in Chapter 3.

The research methodology includes the development of a conceptual framework from the

literature and the gathering of expert opinion on the definition and domains of structural change in primary care using two rounds of a Delphi questionnaire. Findings and analyses will inform the examination of the literature for an evaluation tool that can be adopted or adapted to structural change. Once adopted or adapted, a prototype of the evaluation tool is developed with its application to General Practice.

The research design is further elaborated in Chapter 3. Figure 1-2 Research Design and Research Aims Alignment: Evaluation of Structural Change in Primary Care illustrates the research design and its alignment to the aims of this research.

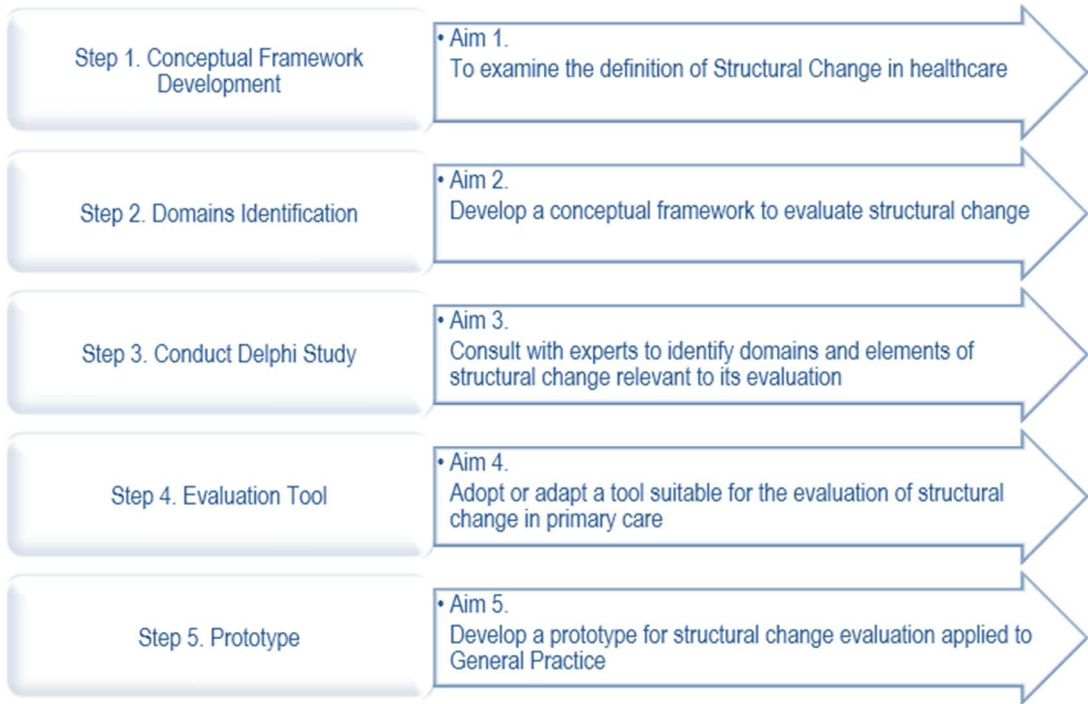


Figure 1-2 Research Design and Research Aims Alignment: Evaluation of Structural Change in Primary Care

### 1.7 Contribution

As it will be seen in Chapter 2, structural change is important because it has the potential to advance the health of a community (Asada et al. 2017) and often the inefficiencies of the health system are addressed through structural change (Duckett 2008). Furthermore, these major changes have occurred in jolts, unplanned and as a response to changes in demography patterns



and disease (Coid & Davies 2008). Therefore, it is necessary that a definition of structural change and its tools for evaluation be clear and systematic across all platforms of the health system.

As previously stated, there is no consensus in the literature on the notion of structural change in primary care and its evaluation is currently under-researched. This research proposes a preliminary definition of structural change in primary care. Furthermore, using a Delphi technique, this thesis proposes a framework for examining various elements of structural change and presents a multi-level tool for assessment of structural change in primary care organisations.

The definition and framework represent the theoretical contribution of this thesis.

The major contribution of this thesis is for practice. Implications for practitioners such as health care managers, administrators and clinicians include insights on the evaluation of initiatives with structural change elements and the application of approaches that the evaluation of regular projects and programs may overlook.

A framework specific to structural change provides insights into the way structural change is managed at different levels of stakeholder groups.

This thesis investigates the definition of structural change, the features that are unique to structural change, the differences between structural change interventions and regular projects and programs, challenges to the evaluation of structural change, current frameworks that can evaluate structural change, characteristics of the most appropriate framework to evaluate structural change, and presents a prototype of an evaluation framework in primary care. The next

chapter presents a review of the literature on structural change with a focus on its evaluation.

## Chapter 2 Literature review

This chapter includes a review of literature related to structural change in the context of primary care with a focus on its evaluation. The aim of the literature review was to examine the notion of structural change in health care and, more specifically, in primary care, and to understand the features characteristic of structural change, its evaluation, triggers, barriers and gaps in the study of structural change.

This research applied a form of framework synthesis (Carroll, Booth & Cooper 2011; Dixon-Woods 2011; Oliver et al. 2008); a method that pragmatically combines themes from an array of literature sources that the author familiarised herself with and consulted about with her supervisors and other members of the Australian Health Services Research Institute (AHSRI) team to develop an a priori framework. The author's personal experience in the field of primary care also contributed to the framework synthesis for the analysis of literature on structural change in primary care; a topic seldom investigated before.

Figure 2-1 depicts a form of framework synthesis used in the development of this research. For the analysis of structural change, the first branch of the framework synthesis contains literature on the rationale and examples of structural change; the second branch aimed to gather information about conceptual frameworks that were foundational including the Donabedian model, (Donabedian 1966, Ayanian et al. 2016; Zlateva et al. 2015), and includes elements from the Kringos et al. (2010, 2013) dimensions of primary care framework and Cockerill and Lemieux's (1998) structural change framework. The third branch included the domains of structural change in primary care which involved four sub-themes: characteristic of structural change, environment/context, stakeholders and outcomes of structural change.

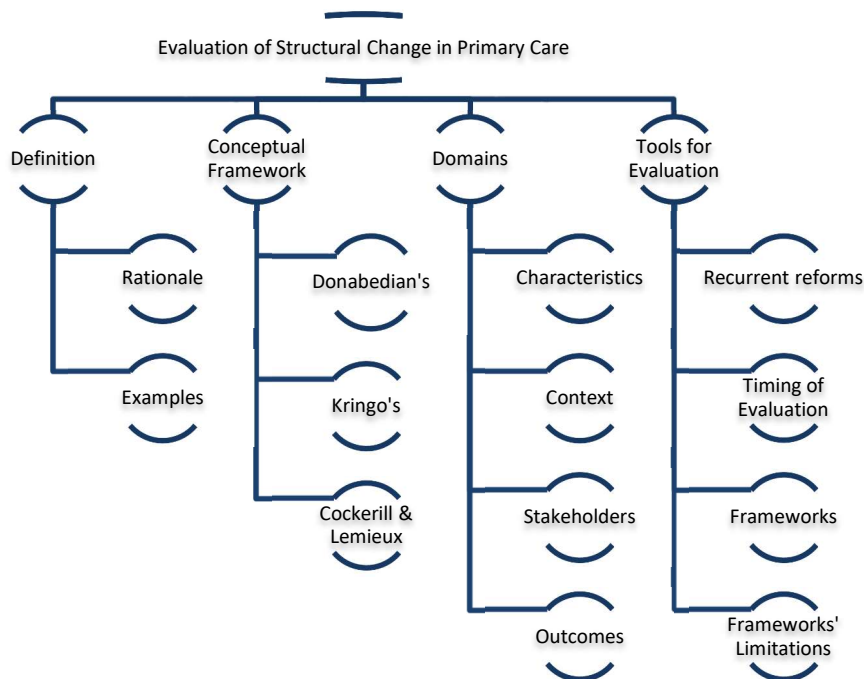


Figure 2-1 Framework Synthesis for Analysing Structural Change in Primary Care

The fourth branch contained aspects of the evaluation of structural change and organised them into recurrent reforms, timing of evaluation, evaluation frameworks and limitations of these frameworks.

As such, this chapter is organised in four sections. Section 2.1 explores the definition of structural change, section 2.2 examines a conceptual framework for structural change, section 2.3 investigates the domains of structural change within the context of General Practice, and section 2.4 looks at tools for the evaluation of structural change in primary care.

## 2.1 Towards a Definition of Structural Change

This section examines the literature in order to identify existing definitions of structural change in the context of primary health care. However, few authors have published such a definition so there is no consensus on a definition of structural change and most authors do not identify their work as 'structural change' via MeSH terms and keywords (Asada et al. 2017; Korenstein et al. 2016).

### 2.1.1 Understanding Structure

Before attempting to find a definition for structural change, it is important to understand the meaning of 'structure' as relevant to this research.

Structure is defined as a “organisation of parts as dominated by the general character of the whole” or the “arrangement of parts in a pattern of organisation” (Merriam-Webster dictionary 2018, p.1). *The Oxford dictionary* (2018) lists as synonyms for structure, the words: formation, configuration, framework, conformation, pattern, composition and constitution amongst others. These definitions highlight the fact that organisation is essential for structure.

It is now useful to look at what ‘structure’ is not as the use of contrast and oppositions assists the mind to understand a concept (Berger 2011). Antonyms for the word ‘structure’ as per the *Oxford thesaurus* (2018) include disorganisation, chaos, formlessness, destruction, disorder, disarray, turmoil, disarrangement, demolition, separation and ruins. It will be seen later in the section that definitions of structural change have striking similarities to these antonyms.

In the literature, Avedis Donabedian, defined 'structure' as "the settings, qualifications of providers and administrative systems through which care takes place" (Ayanian & Markel 2016, p. 206). Jolley et al. (2008) consider structure as a key element of health policy represented by the institutions and structural arrangement of the health system and governance.

Structuralism analysis, an economic term, looks at a system in its entirety and the interrelations between its elements instead of looking at its elements individually or in isolation (Blankenburg, Palma & Tregenna 2008) and so it is with structural change in health care; its elements need to be considered to be in inter-relation with each other.

From these definitions, ‘structure’ requires elements or parts to be in formation, organised or configured. Therefore, structure is to be studied in conjunction with the interconnectedness of its elements.

### **2.1.2 Understanding Change**

Change in organisations is triggered by leadership change, mergers, growth and expansions, downsizing, new products, technological changes, competition, changes in political environment and legislation, industrial disputes, changes in consumer tastes and legal interventions. Change is defined as “an alteration of a core aspect of an organisation’s operation” (Helms-Mills, Dye & Mills 2008, p. 5). These core aspects refer to structure, culture, technology, goals, leadership and personnel. Change is also called restructuring (Helms-Mills, Dye & Mills 2008).

### **2.1.3 Towards a definition of Structural Change in Primary Care**

Domingo and Tonella (2000) claim that structural change happens when parts or properties are added to, or subtracted from, subsystems that lead to disintegration, collapses and changes in main behaviour. As a result, the interaction between elements in the new structure displays emergent properties. The European Commission (2017) calls this structural reform that deals with hindrances to economic growth in order to improve productivity, including policies that foster innovation, improve business environments and address issues of population ageing. The Economist (December 2017) claims that structural reforms imply changes to the way a government works. Matsuyama (2008) defines structural change as a complex and intertwined phenomenon brought about by “plagues, wars, revolutions, the discovery of a continent and major technological advances” (Matsuyama 2008 p. 1).

Structural change in healthcare is the re-orientation of the health system towards primary healthcare and has, as objectives, the improvement of health outcomes, reduction of health

inequalities and regulation of health expenditure. This shift has been the inclination of many countries in Europe and has been amply recommended by the World Health Organisation (WHO) (Donato & Segal 2010) and the Organisation for Economic Co-operation and Development (OECD) (2015).

In the health care literature, structural change has been defined by a wide array of connotations. Coid and Davies (2008) describe structural changes as "commonly inflicted on public health care services" (p. 278). Martsolf et al. (2015) used keywords such as 'structural transformation' to address the topic of structural change. Jolley et al. (2008) referred to structural change as transformational change within health policy.

For Asada et al. (2017), structural change is known as policy, systems and environmental change. Cockerill and Lemieux (1998) refer to it as organisational change and re-engineering in the health-care sector. Ozcan and Khushalani (2016) accounted policy changes and health care reform as structural change. Rix, Owen and Eagar (2005) refer to it as re-organisation and reforms. Braithwaite, Westbrook and Iedema (2005) call it restructuring and considers it to be a pervasive change tool. Wynen, Verhoest and Kleizen (2016) describe it as cyclical reform programs likely to cause 'reform fatigue'. Grielen, Boerma and Groenewegen (2000) refer to it as health care reform projects.

In summary, structural change has been described in several ways, all of which point to change and shift. From this point forward, structural change will be used interchangeably with structural reform and restructuring.

### **2.1.3.1 Change Management in Healthcare**

This section introduces the notion of structural change in healthcare within the context of change management. It discusses the differences between ordinary change and structural change in healthcare and highlights the challenges and drivers for change in primary care.

Change management is inherent to healthcare. Continuous advances in science, procedures, programs, techniques and knowledge about patient care are rapidly outdated. Furthermore, the speed of knowledge transfer does not match implementation in daily practice and new insights do not necessarily mean changes in clinicians' daily routines (Grol et al. 2013).

Implementation, therefore, plays an essential role in the understanding of structural change within the context of healthcare because the implementation phase is the optimal time to customise an innovation (Grol et al. 2013).

Implementation is defined as “a planned process and systematic introduction of innovations and/or changes of proven value; the aim being that there are given a structural place in professional practice, in the functioning of organisations or in the health care structure” (Grol et al. 2013, p. 10). Implementation has also been known as knowledge translation.

The implementation literature proposes five phases in the process of change for care providers and their teams. It is important to consider their readiness to change and these five phases assist to differentiate between groups:

Phase 1. Orientation

Phase 2. Insight



Phase 3. Acceptance

Phase 4. Change

Phase 5. Maintenance

If the improvement is required in terms of clinical decision-making, the innovation requires having a review of the scientific literature and evidence-based guidelines. If the improvement is required in multidisciplinary routines, care plans, integrated care pathways, and disease management systems are required. If the improvement is required in efficiency of care provision, it is necessary to implement improved care processes, business redesign models and best practices (Grol, Wensing & Eccles 2013).

When changes in structures do occur, there are consequences for the patient and the primary care process as these changes aim (usually) to improve efficiency, or effectiveness, or to make the care more patient centred (Grol, Wensing & Eccles 2013).

### **2.1.3.2 Resistance to Change**

The link between complexity, size, formalisation and resistance to change has been well established. The larger the organisation, the greater the hierarchy, and the more use of complex procedures that require the presence of technocrats (experts in science or technology with influence with government or industry) to analyse and ensure compliance of standards. These bureaucratic organisations cope well with routine but not with non-routine decision making as political processes and the interest of self-perpetuating groups in maintaining the status-quo slow down decision making (Tushman & Romanelli 1985).

### **2.1.4 Definition of Primary Care**

Effective primary care is the “cornerstone of a healthy population” (White & Wylie 2004, p. 10).

In the US, primary care has been recognised as the backbone of a ‘rational’ health care system (Coleman et al. 2016; Lawless & Baum 2014).

Greenhalgh's (2007, p. 12) definition is:

Primary health care is what happens when someone who is ill (or who thinks he or she is ill or who wants to avoid getting ill) consults a health professional in a community setting for advice, tests, treatment or referral to specialist care. Such care should be holistic, balanced, personalised, rigorous and equitable, and delivered by reflexive practitioners who recognise their own limitations and draw appropriately on the strengths of others

Primary healthcare includes front line health services provided in the community such as general practice, allied health services, dental services, pathology, radiology and community and public health initiatives. Preventative health is also part of primary health care (Fitzgerald 2015).

In Australia, numerous attempts have been made to improve health outcomes in primary care. Over the years, the Commonwealth and State governments have introduced changes to the structure of the health system. In the 1990s, Divisions of General Practice were created to strengthen General Practice. In 2000, the Government introduced the Enhanced Primary Care Package (EPC) to improve Chronic Disease Management, and in 2007 substantial funding was devoted to creating comprehensive primary care centres called GP Super Clinics (Donato & Segal 2010).

In 2010, the Australian government stated that primary care was more a “disparate set of services rather than an integrated service system” (Health & Ageing 2010, p. 11) and promised that these

reforms will transform our health system as the Australian government takes on full responsibility for primary health care funding and policy (Health & Ageing 2010, p. 39). However, it recognised that the changes would take time.

Most of these initiatives have ended or have been transformed as governments change. For example, the Divisions of General Practice initiative (created under the Labor party) became Medicare Locals in 2011 and in 2015 became Primary Health Networks (PHNs) under the Liberal Party; all of them with the goal of improving health outcomes.

This research will focus on General Practice.

### **2.1.5 Definition of General Practice**

General Practice is the backbone of primary care and the cornerstone of the Australian health system (Beilby 2016). General practitioners “work at the interface between illness and disease and between individual health and population health” (White & Wylie 2004, p.1).

The nature of the work of General Practitioners is complex and because of this, collecting information is challenging. At the heart of general practice is the consultation (Beilby 2016).

Services provided by a General Practitioner are complex and highly divergent as the doctor is required to alter their performance in response to new data, measure probabilities, arrive at conclusions to then make decision to act. Each of their performances is adapted to specific situations but the end result is the satisfaction of the patient. These processes are to be understood as interconnected, interdependent and interactive systems rather than seen in isolation (Shostack 1987).

Blueprinting is a mapping technique that helps visualise service systems in their interconnected steps (Shostack 1987) as seen in figure 2-2. Service blueprinting gives a visual representation of the service process and its organisational structure to help recognise failure points and areas for improvement and innovation (Bitner, Ostrom & Morgan 2008). In general practice, a consultation triggers a series of events as seen in the map below:

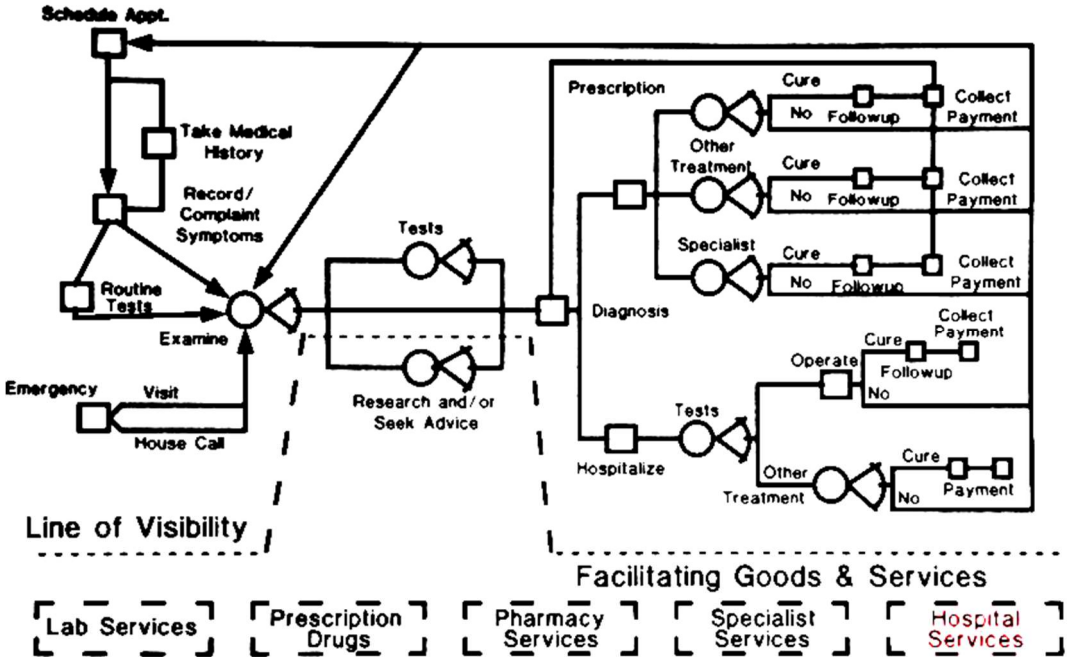


Figure 2-2 Blueprinting of GP Services (Shostack 1987, pp. 34-43)

Shostack (1987) states that processes are structural elements that can be re-engineered. The nature of structural change involves such analysis.

**2.1.6 The Quadruple Aim**

“Large-scale public policy changes are often recommended to improve public health” (Basu, Meghani & Siddiqi 2017, p. 351). The Quadruple Aim seeks to optimise the health system in the four dimensions of performance by improving population health, patient experience and provider satisfaction whilst reducing cost of health care (Bodenheimer & Sinsky 2002; Sikka & Leape

2015).

The declaration of Alma Ata proclaimed, 41 years ago, that a strong foundation of primary care was essential to achieve 'health for all'. When the Four Cs or four pillars of primary care (Bodenheimer et al. 2014) are supported, primary care can achieve the Quadruple Aim of improving patient experience of care, improving provider satisfaction, achieving population health goals and reducing costs. In consequence the performance of the overall health system improves (Park et al. 2018). The "4 C's (or four pillars of primary care) are:

- Contact: first point of access to the health care system,
- Comprehensive care: accountable for covering a wide range of individual care needs,
- Coordinated care, coordinated, integrated and preventive care across settings,
- Continuous care, ensure continuity of care adhering to the person-centred care principle

Likewise, the ten building blocks of primary care (see Figure 2-3) encompasses how practices can transform to become high performing and contribute to improve primary care outcomes (Bodenheimer et al. 2014).

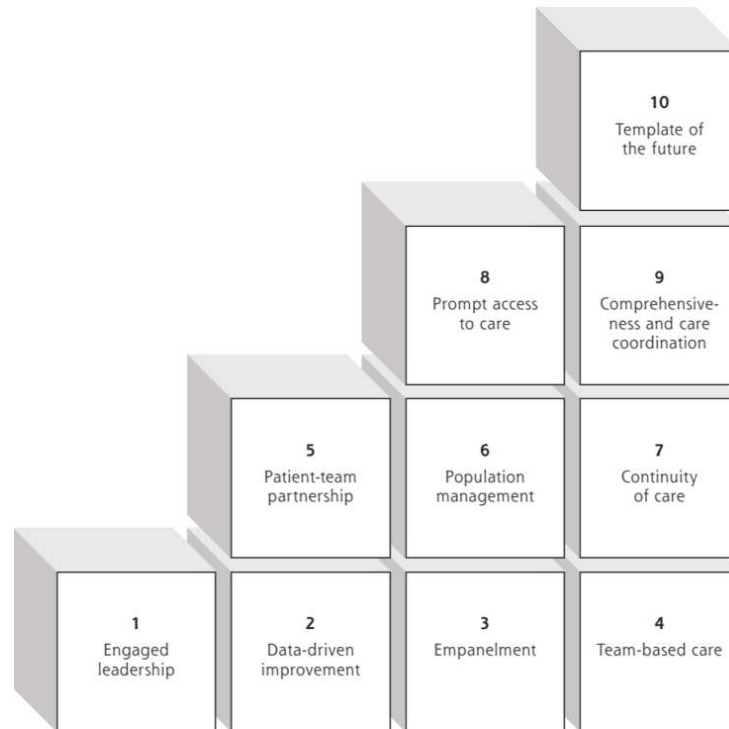


Figure 2-3 Ten building blocks of high performing Primary Care (Bodenheimer et al. 2014, pp. 166-171)

The Quadruple Aim is the hinge from which improvement of the primary care system hangs and should underpin structural change interventions.

### 2.1.7 Rationale for Structural Change

In structural change, the rationale for change is to improve efficiency in services and population health outcomes as well as to control costs (Braithwaite, Westbrook & Iedema 2005). It has been used for the advancement of technology, health services and demographic improvement in health care systems (Roald & Edgren 2001). The following segment presents examples of structural change as found in the literature.

### 2.1.8 Examples of Structural Change

With this understanding of structural change, it is interesting to see how tangible structural change is in practice. The manifestations of structural change include changes in relationships, displacement of current activities and change in the way resources are distributed (Wight et al.

2015). It takes the form of mergers, shifting responsibilities between central and peripheral bodies, setting up agencies and changes in reporting lines (Braithwaite, Westbrook & Iedema 2005). It also includes "the creation of new organisations, agencies and positions, and the merging or abolition of old ones" (Coid & Davies 2008, p. 278).

An example of attempted structural change from the Australian health system was 'Consumer Directed Care' (CDC). CDC is an Australian Aged Care reform that aimed to give older people autonomy enabling them to choose services whereby they can continue to live at home. The CDC was piloted in 2010-2011 and from 2015 all subsequent Home Care Packages were required to be delivered on a CDC basis (You, Dunt & Doyle 2017). This structural change introduced a new way of utilising funding putting choice into the hands of the consumer. However, this intervention had challenges as the participants confuse this program with person-centred care, where decisions are made by service providers. The assumption is that consumers with complex needs are unable to make an informed choice and require professional advice to choose and coordinate services. This had prevented the structural changes needed for successful CDC. An added challenge is the difficulty of evaluation outcomes as this intervention was not accompanied by sufficient report monitoring involving assessments sent back to government Health Departments (You, Dunt & Doyle 2017).

This example supports this research's contributions by demonstrating that the main focus of the evaluation of structural change interventions should be context awareness and the four pillars of Quadruple Aim, where consumers receive Comprehensive, Coordinated and Continuous Care from their first Contact with the Health System. (see Section 2.1.6). For example, the implementers of the CDC did not take into account the level of health literacy of its consumers (context awareness); when given the ability to choose from an array of health services,

consumers were unsure of what Consumer Directed Care (CDC) meant and found it difficult to distinguish between CDC and services provided by previous interventions (Gill et al 2018). The Quadruple Aim, which seeks to improve population health, patient experience and provider satisfaction whilst reducing cost of health care, was not fulfilled in its entirety. For instance, CDC consumers could not obtain the full benefits offered by the intervention as they were unable to choose a provider and services most appropriate for their needs due to their inability to understand how CDC could benefit them from a person-centric perspective (Gill et al 2018). As such, patient experience and population health improvement were not achieved with a window of opportunity for these patients to seek for services in another area of the health system when these could have been provided by CDC. The Quadruple Aim of reducing the cost of health care may have been also compromised.

**2.1.8.1 Internal Structural Change**

Structural change occurs internally at the organisational level through events with major, mild and minor impact. Maintenance events are events that take place during the life of the organisation (Wynen, Verhoest & Kleizen 2016).

Table 1 shows structural change categorised into three levels:

<b>Level 3 Structural Change</b> Major impact	<b>Level 2 Structural Change</b> Mild impact	<b>Level 1 Structural Change</b> Minor impact
- Restructuring the organisation by absorption of (parts or tasks from) another organisation	- Restructuring the organisation by changing its legal status	- Restructuring the organisation by shifting organisations to another ministerial portfolio (sub-ordinance to another ministry)
- Restructuring the organisation by secession of parts or tasks of the organisation (which are shifted to other organisations)	- Restructuring the organisation by imposed internal reorganisations (different from those listed in level 3)	- Change of name
	- Restructuring the organisation by the attribution of new tasks, not existing before in the public sector	

*Table 1 Expected impact of Structural Change on the organisation according to Maintenance Events (events occurred between the creation and closure of the organisation). Adapted from Wynen, Verhoest and Kleizen, 2016, p. 10*



According to Wynen, Verhoest and Kleizen (2016), there are three levels of reform as follows.

Major impact on the organization are level 3 reforms that include:

- Restructuring the organization by absorption of (parts or tasks from) another organization
- Restructuring the organization by secession of parts or tasks of the organization (which are shifted to other organizations)

Mild impact on the organisation are level 2 reforms:

- Restructuring the organization by changing its legal status
- Restructuring the organization by imposed internal reorganisations (different from those listed above)
- Restructuring the organization by the attribution of new tasks, not existing before in the public sector

Minor impacts on the organisation are level 1 reforms:

- Restructuring the organization by shifting organizations to another ministerial portfolio (sub-ordinance to another ministry)
- Change of name

Wynen, Verhoest and Kleizen (2016) confirm the complexity of structural change and accentuate its differences with regular projects and programs.

### **2.1.8.2 Difference between Structural Change and Projects and Programs**

In studying structural change in healthcare, it is important to establish how it differs from regular projects and programs.

A project is defined as a temporary venture with a defined start and end in time, scope and resources. A project is unique with a set of specific steps to achieve a specific objective with people in the team that might belong to other departments or companies. For example, the relief effort after a natural disaster or the development of software to improve a business process (PMI 2017).

Thiry (2016) defines a program as “a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually”. Programs are comprised of various components.

Structural change goes beyond organisational change. Organisational change happens at a micro level e.g. within a hospital whereas structural change is top-down and happens at a macro level e.g. in the highest structures of a country which later ripples down to the organisational level. Structural change, therefore, is known as policy, systems and environmental change (Asada et al. 2017). Structural change is a continuing feature in any economy (Lowe 2012). Examples of structural changes include changes in relationships, displacement of current activities and change in the way resources are distributed (Wight et al. 2015).

From there, it appears that structural change is systemic, whereas projects are limited and programs, although perhaps resembling structural change, are not pervasive enough to reach the structure and stay to cause permanent change.

### **2.1.9 The Importance of Structural Change**

Structural change is important for several reasons. The drivers for structural change at different

levels requires its initiators, implementers and influencers to be informed and prepared to navigate structural change.

Historically, reform, restructure or structural change has been driven as a response to a crisis, public criticism or rising costs (Rix, Owen & Eagar 2005). Crises like hospital scandals e.g. a doctor's death in Queensland (Rix, Owen & Eagar 2005) and rising costs such identified in the 'The Blame Game' result of a parliamentary inquiry into health funding (Donato & Segal 2010).

The Blame Game report identified issues with funding arrangements such as source of waste, duplication and cost shifting between jurisdictions which negatively affected the way illness and continuity of care was managed (Donato & Segal 2010).

Demographic changes, political climates and disease trends have forced OECD countries to make changes to their health care systems. The OECD countries share common challenges such as having an ageing population, having to preserve access and quality whilst controlling costs, fragmented healthcare systems and increased chronic disease incidence which puts pressure on resource availability (Ozcan & Khushalani 2016).

At an organisational level, political drivers make structural change efforts evident immediately thus making senior management appear more dynamic and offering good financial and professional opportunities. Structural change allows senior management to detach from staff at the coalface and avoid the feelings of these people as they deal with redundancy, role disruption and uncertainty (Coid & Davies 2008). With this background it is important to understand how structural change takes place.

### **2.1.10 Triggers to Structural Change**

Demographic changes, political climates and disease trends have forced OECD countries to make changes to their health care systems. The OECD countries share common challenges not only in regards of an ageing population but also by having to preserve access and quality whilst controlling cost, fragmented healthcare systems and increased chronic disease incidence which puts pressure on resource availability. Policy changes and health care reform are a necessary part of this process (Ozcan & Khushalani 2016).

In healthcare, structural change is the re-orientation of the health system towards primary healthcare for the purposes of improving health outcomes, reduction of health inequalities and regulation of health expenditure. Many countries in Europe are realigning their healthcare towards primary care and these practices have been amply recommended by the World Health Organisation (Donato & Segal 2010; Epping-Jordan et al. 2001).

Independent reviews have triggered structural change in the states for different reasons. In NSW for example, a hospital scandal and the successive media coverage was the trigger (Dwyer 2004). In Queensland, the 'Dr Death' scandal triggered a major review of the system's administration, management and performance (Rix, Owen & Eagar 2005). Workforce reform, for example, is managed differently across states and reinforcing the lack of a national health system in Australia (Rix, Owen & Eagar 2005) making it complex for assessment and evaluation of the change.

Crisis management of their health systems has triggered structural change within the states in the form of decentralisation. The fact that their organisational structures differ without having evidence of their strengths and weaknesses (Rix, Owen & Eagar 2005) makes the delivery of their policy aims and the evaluation of its impact complex.

In 2015, the Australian government stated "the health system is under increasing pressure to provide better quality, affordable and accessible health care, built on universal access to Medicare. A long-term strategy for the health system is needed, including providing better management of patients with complex and chronic conditions, eliminating waste and improving efficiency" (Department of Health 2016 p.1).

Another trigger to structural change is the aim to create innovative and adaptable public organisations (Wynen, Verhoest & Kleizen 2016).

There has been a history in which the states and territories conduct independent reviews that lead to a cyclical pattern of centralisation and decentralisation of governance. Back in 2004, structural change took place in Australia with the purpose of improving the health system by clarification of roles, decreasing duplication and gaps in services, particularly in the elderly and disabilities sectors (Rix, Owen & Eagar 2005).

In November 2003, there was an agreement to take immediate action to make structural changes to the health system in the area of chronic disease (Rix, Owen & Eagar 2005). Structural opportunities to reform depend on the scope and role of the various health authorities along with the organisational and executive structures between jurisdictions.

### **2.1.11 The Need for Structural Change**

According to Duckett (2008), structural change is often used to address inefficiencies of the health system. However, its necessity should be judged by equity, quality, efficiency and acceptability in the health system. For this purpose, the assessment and evaluation of structural

change is important.

Structural change is significant because it has the potential to advance the health of a community by fostering healthier choices in a population (Asada et al. 2017). Senior executives and government authorities are required to plan for health outcomes in a systematic way. However, major changes in the history of health services have occurred in 'jolts' as a response to changes in demography patterns and disease (Coid & Davies 2008).

In summary, structural change seems to be driven by real world problems and it happens mostly by imposition rather than by choice. Structural change is disruptive because old structures and systems do not remain the same. Nevertheless, research of structural change remains under-developed.

#### **2.1.12 Features Unique to Structural Change**

Structural change has the capacity to change financial mechanisms and legal frameworks, and it can introduce new vocabulary such as commissioning and fundholding (Coid & Davies 2008).

Structural change can be used to 'cure' deficiencies such as "poor strategic focus, lack of financial control, lack of accountability, excess bureaucracy, lack of efficiency and many other manifestations of organisational ills" (Coid & Davies 2008, p. 278).

Structural change has been labelled pervasive and is judged as the choice change-management tool when major change is at stake (Braithwaite, Westbrook & Iedema 2005). Structural change also has the ability to alter culture in organisations (Grol, Wensing & Eccles 2013; Wynen, Verhoest & Kleizen 2016).

Structural change aims to achieve longevity of solutions and sustainability (Gupta et al. 2008). Programs usually stop when funding ceases; whereas structural change attempts to achieve fundamental transformation for an innovation to perpetuate and endure the test of time (Grol, Wensing & Eccles 2013).

In health services history, structural change has occurred in irrepressible 'jolts' as a response to changes in demography patterns and disease and the inability of senior executives and politicians to systematically plan for health outcomes (Coid & Davies 2008).

These unique features make structural change boisterous and suggest that its assessment should be customised rather than being evaluated by the same means as regular projects and programs. Structural change is large scale change that has consequences; it is important to look at the triggers for structural change.

### **2.1.13 Barriers to Structural Change**

Although in organisational and political arenas, reviews are originated by those in power to look into lower levels, official published reviews of the roles and responsibilities of the Commonwealth health authority are rare. This is an important barrier to the evaluation of structural change as the Commonwealth/State responsibility split represents a challenge in the design of the health system of Australia (Dwyer 2004).

Structural change can be either aided or hindered by the system itself or by the agendas of its recipients and initiators. An example of is the Australian health system's tendency to move towards fragmentation. The Commonwealth/State responsibility split fosters fragmentation and is therefore considered the principal structural weakness of the primary care system. This split

hinders any structural change (Rix, Owen & Eagar 2005).

The agendas of structural change initiators can also become a barrier to structural change. Some authors have attributed the purpose of structural change to be political with the aim to demonstrate significant action without considering the underlying problems in the system (Braithwaite, Westbrook & Iedema 2005).

Structural change could also be held captive in a time-loop. In Australia, structural change centralises and decentralises management and governance depending on the latest independent review (Rix, Owen & Eagar 2005) and seemingly goes in circles time after time. The frequent turnover of goals, policies, influential players, new stakeholders, shifts in accountability, changes in leadership and interrupted evaluation attempts (Jolley et al. 2008) become a vicious cycle that cripple the progress of structural change.

Recipients of structural change can also be a barrier. In the organisation, self-perpetuating groups interested in maintaining the status-quo do so by resisting change and slowing down the decision-making process (Tushman & Romanelli 1985). In public sector organisations, continuous reform brings about reform fatigue which takes its toll on the organisation's culture. Staff continuously exposed to cyclical reforms can become cynical and resistive to future reforms. (Wynen, Verhoest & Kleizen, 2016).

#### **2.1.14 Gaps in the study of Structural Change**

The study of structural change lacks consensus on its definition (Asada et al. (2017) and evidence of its impact (Coid & Davies 2008; Jolley et al. 2008; Wynen, Verhoest & Kleizen 2016). Furthermore, the correlation between structural change and improved health outcomes has



been questioned (Braithwaite, Westbrook & Iedema 2005).

According to Pollitt (2009, pp. 285-291), the following features mean that it is usually hard to attribute a specific change in performance to a specific change in structure:

- Structural changes are usually connected to outputs and outcomes only by long causal chains,
- Structural changes are multi-faceted, so it is difficult to know what parts of the new structure are working and which are not,
- Structural changes do not occur in isolation, there are usually other processes taking place at the same time,
- The views on the justifications and meanings of the reforms and their results are different amongst stakeholders.

In New Zealand for example, almost 10 years of reform were evaluated. The results of the first official evaluation stated that it was not possible to connect structural change and improved efficiency and effectiveness of the public service. A second assessment in 1996, praises the results of the reform without detailed or quantitative evidence that links structural change to performance improvement (Pollitt 2009, pp. 285-291).

Furthermore, the evidence that structural change or restructuring improves productivity and outcomes is unclear (Braithwaite, Westbrook & Iedema 2005). An analysis of the success of structural changes in meeting organisational goals and objectives is lacking (Cockerill & Lemieux 1998). In general, the evaluation of structural change in healthcare is under-researched (Dwyer 2004; Wynen, Verhoest & Kleizen 2016).

A framework to assess whether an initiative has elements of structural change and the potential difference in the evaluation of these initiatives has not yet been proposed; neither has a tool been adapted or adopted. The following sections outline a conceptual framework for structural change in primary care.

## **2.2 Towards a Conceptual Framework for Structural Change**

A framework is "the basic structure underlying a system of thought; a set of coherent principles widely enough accepted to serve as a guide within a particular discipline, while both allowing for and demanding that local judgement be required in the local application and use of the framework" (Frank, Novokowsky & Zummer 2012, p. 12). A framework has also be defined as 'structure, order, scheme, system, configuration, composition, makeup and archetypal patterning' (Frank, Novokowsky & Zummer 2012).

The development of the conceptual framework for structural change in primary care started with the Donabedian model, dominant in health services research (Donabedian 1966, Ayanian et al. 2016; Zlateva et al. 2015), and was built up with elements from two more frameworks: the Kringos et al. (2010, 2013) dimensions of primary care framework and Cockerill and Lemieux's (1998) structural change framework. These are explained below.

### **2.2.1 Donabedian's Framework for Health Care Quality**

Back in 1966, Donabedian recommended researchers use structure to evaluate healthcare outcomes and highlighted a gap in the study of the relationship between structure and outcomes. Donabedian believes that good medical care takes place if proper structures are in place.

The Donabedian model emphasises a systems-level approach towards the determinants of health care quality and is dominant in health services research (Ayanian et al. 2016; Zlateva et al. 2015).

The three components of the Donabedian framework are shown in Figure 2-4:

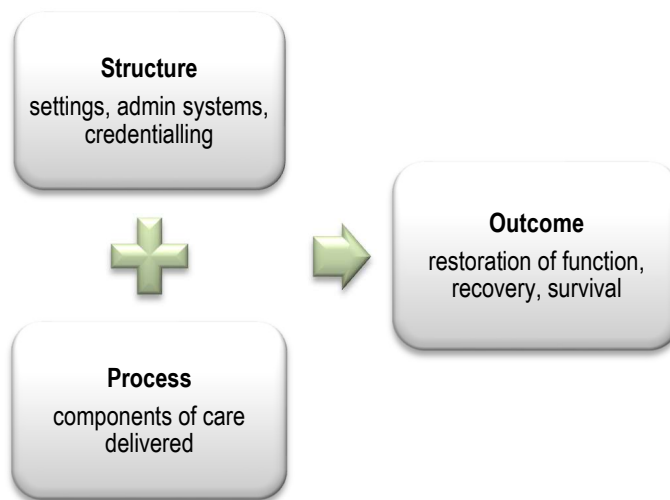


Figure 2-4 'Donabedian Framework for Health Care Quality' adapted from Ayanian and Markel 2016, p. 205

The Donabedian framework definition for structure includes a variety of aspects to be considered. These include the environment, provider and medical staff credentials, instrumentalities which result in care, facility and equipment adequacy, care provision process and support, fiscal organisation, administrative structure, and institution operation (Donabedian 1966; Ayanian & Markel 2016).

Process entails the elements that compose the care delivered and is also known as 'activities' (Zlateva et al. 2015). Outcome is the result of the two manifested as restoration of function, recovery and survival (Ayanian & Markel 2016).

The Donabedian framework is important in understanding the concept of structure in health care.

Next, a framework specific for primary care is explored.

### **2.2.2 Kringos' Dimensions of Primary Care**

Primary care is the first form of healthcare provided by a health system (White & Wylie 2004). It aims to:

- be accessible to the whole population with reference to distance and time taken to see a patient.
- be acceptable, which includes measures of patient satisfaction.
- be able to identify populations, which includes proactivity and planning strategically based on need rather than demand.
- use resources in a cost-effective way, which involves using judgment in assigning resources according to guidelines and priorities for provision of services (White & Wylie 2004).

Primary care plays an important role in the delivery of accessible and effective healthcare and is concerned with providing continuous, comprehensive patient-centred care (Dowrick 2017).

Primary care is a complex system that can be seen through structure, process and outcome (Kringos et al. 2010a, 2010b). As such, the Kringos framework maintains the basic structure of the Donabedian framework and applies it to primary care.

Kringos et al. (2013) identified two levels and seven dimensions that characterise a strong primary care. A primary care dimension is a subject area that encompasses primary care system features (Kringos et al. 2010) and there is ample evidence that these dimensions are partly responsible for the overall health system performance and population health of a nation (Kringos

et al. 2013).

The structure level has three dimensions: governance system, economic conditions and workforce development. The processes or services level has four dimensions: access to primary care services, comprehensiveness of primary care services, continuity of primary care, and coordination of primary care as shown in Figure 2-5 Dimensions of Primary Care Kringos et al. 2013

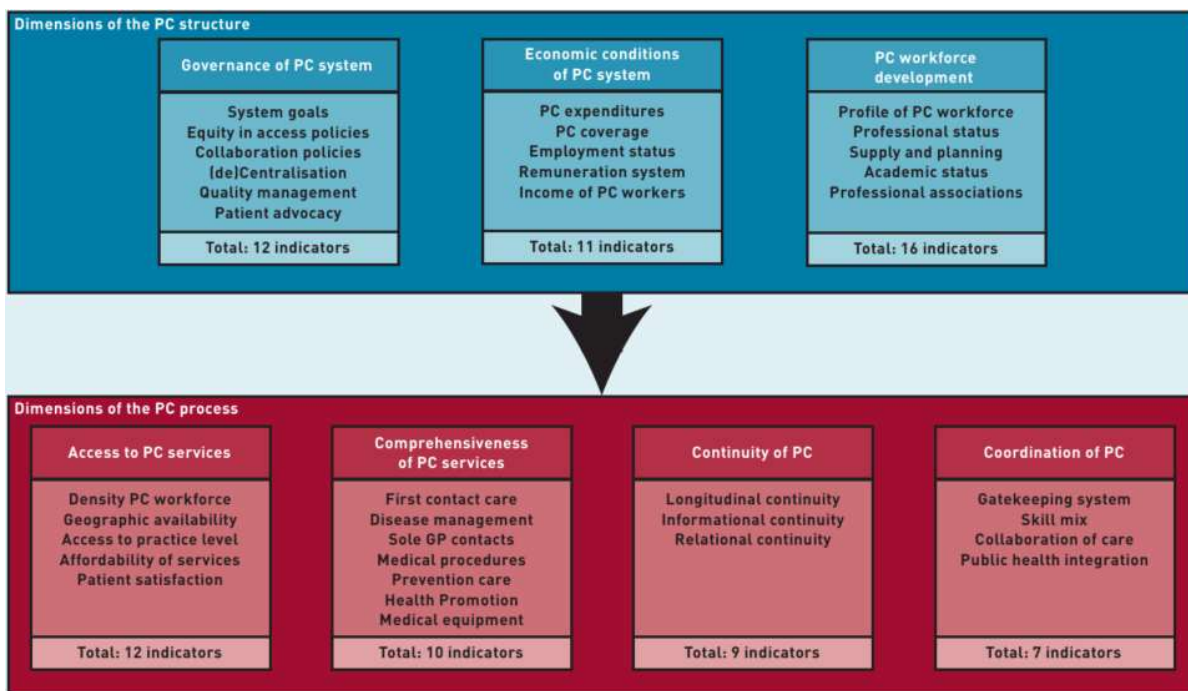


Figure 2-5 Dimensions of Primary Care Kringos et al. 2013, p. 65

The dimensions of the primary care structure of Kringos et al. (2013) are governance system, economic conditions and workforce development. These are expanded below.

The governance dimension of the primary care system includes:

- healthcare system goals.
- policies on equity of access.
- policies on collaboration.

- centralisation or decentralisation of primary care management and service development which is determined by the level at which policies are set in place; whether national, regional or local.
- Quality management infrastructure which includes the mechanisms required to ensure quality of care such as quality assessments, certification of providers, licensing of facilities, and clinical guidelines.
- patient advocacy entails person-centred oriented organisations and patient compliance procedures in healthcare facilities.

The economic conditions dimension of the primary care system has the following features:

- health care funding system refers to how health is financed either by taxes, private funds or health insurance and health care expenditures.
- employment status of the primary care workforce either salaried, self-employed providers with or without contracts.
- remuneration of the workforce including fee for service, capitation, salary or mixed payments.
- income of workforce refers to the annual income of the primary care workforce.

The workforce development dimension of the primary care system has the following features:

- profile of workforce refers to the profile of health professionals considered for primary care.
- professional status reflects academic departments within universities.
- supply and planning refer to workforce supply, retention and capacity.

- academic status includes vocational training.
- professional associations include organisations for the workforce.

The Kringos framework was useful to the study to understand elements at play in primary care. Elements of governance, economic conditions and workforce were particularly relevant in the formation of the conceptual framework for structural change in primary care.

The last framework was found to be specific for evaluating organisational change. The Cockerill and Lemieux framework is described below.

### **2.2.3 Cockerill and Lemieux's Framework for Evaluating Organisational Change in health care Agencies**

The Cockerill & Lemieux (1998) framework aims to evaluate the impact of re-structuring in health care. The Cockerill and Lemieux framework is based on structure, process and outcome indicators. Structure indicators refer to the infrastructure required by the programs to run, process indicators refer to how the programs run, and outcome indicators refer to the results given by these programs.

The impact of organisational restructuring in healthcare agencies (e.g. hospitals) has not been evaluated (according to Cockerill and Lemieux) for the following reasons:

- No clear point of implementation,
- Key players and components of restructuring change throughout the process,
- Evaluation is fragmented because of extraneous environmental changes,
- Unavailability of a framework for the evaluation of impacts of restructuring.

This framework includes seven dimensions:

1. Perspectives of patients and families of the quality of care they receive whilst the change is in process, such as global evaluation of the facility, admission and discharge procedures, cleanliness, and access to information
2. Perspectives of staff and doctors over the period of time when the change takes place, including work environment, morale, absenteeism, staff turnover, culture and climate,
3. Roles and relationships of the working team, and perceptions of their effectiveness in managing working processes and achieving objectives,
4. Efficiency and productivity of the healthcare agency includes financial measures, and productivity measures such as length of stay, change in service volumes, waiting times for elective procedures.
5. Adverse incidents, the rates of adverse occurrences as a measure for performance as it reflects inadequacies and shortcomings, that can be monitored throughout the restructuring process,
6. Perspectives of board and community; suggests measuring the responsiveness of the healthcare agency to community needs through the restructure and whether links with relevant agencies are impacted.
7. Teaching and research, which aims to monitor, if applicable, teaching and research activities through the change process by tracking number of students in training, number of publications, and funding attracted by staff and doctors whilst the restructure was in place.

This framework provided useful insights into stakeholder's engagement and consultation, and



feedback systems such as tracking and performance measurement. The framework is depicted in Figure 2-6 below.

<b>DIMENSIONS</b>	<b>PROPOSED MEASURES</b>
<b>Patients' and Families' Perspectives</b>	<b>Patient satisfaction questionnaires</b> <b>Patient focus groups</b> <b>Complaints monitoring</b>
<b>Staff and Physicians' Perspectives</b>	<b>Perceptions of work environment (culture and climate)</b> <b>Staff satisfaction questionnaires</b> <b>Staff focus groups</b> <b>Turnover trends</b> <b>Absenteeism rates</b>
<b>Roles and Relationships</b>	<b>Team effectiveness questionnaires</b> <b>Workload measurement data</b> <b>Workload sampling data</b>
<b>Efficiency</b>	<b>Operating margins</b> <b>Average cost per weighted case</b> <b>Variable revenue</b> <b>Percent change in foundation assets</b> <b>Average length of stay</b> <b>Percent change in service volumes</b> <b>Test results turn-around times</b> <b>Waiting times for elective procedures</b> <b>Nursing hours per weighted case</b>
<b>Adverse Occurrences</b>	<b>Rates of readmission/complication</b> <b>Rates of medication errors</b> <b>Rates of nosocomial infections</b> <b>Numbers of procedure cancellations</b> <b>Numbers of patient falls</b> <b>Numbers of patients awaiting transfer</b>
<b>Community and Board's Perspectives</b>	<b>Community needs assessments</b> <b>Community health status rates</b> <b>Relationships with community agencies</b>
<b>Commitment to Teaching and Research</b>	<b>Research funds attracted by staff</b> <b>Publications/presentations</b> <b>Students involved in training</b> <b>Survey of staff on perceptions</b> <b>Survey of deans/directors on perceptions of academic commitment</b>

Figure 2-6 Framework for Evaluating Organisational Change in Healthcare Agencies (Cockerill & Lemieux 1998, p. 139)

With the foundation of these three frameworks, the conceptual framework is now developed.

### 2.2.4 Conceptual Framework for Structural Change in Primary Care

The conceptual framework of Structural Care presented in this thesis, takes its basis from the Donabedian model, dominant in health services research (Donabedian 1966, Ayanian et al. 2016; Zlateva et al. 2015), and includes elements from the Kringos et al. (2010, 2013) dimensions of primary care framework and Cockerill and Lemieux’s (1998) structural change framework. These elements inspired by findings from the literature review conducted by the author, gave birth to the Conceptual Framework for Structural Change in Primary Care as depicted in Fig 2-7 below:

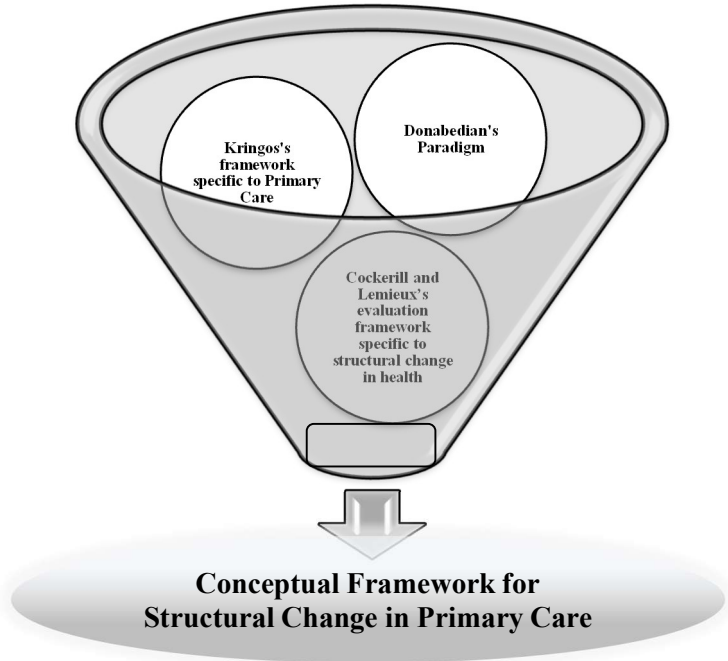


Figure 2-7 Three Frameworks contributed towards the Conceptual Framework for Structural Change in Primary Care developed in this thesis

The conceptual framework for structural change in primary care developed by this research is shown in Figure 2-8 Conceptual Framework for Structural Change in Primary Care. The process of development is further explained in Section 3.2.1 Step 1. Development of the Conceptual

Framework in Chapter 3.

The elements of the conceptual framework include:

- Patterns/characteristics of structural change,
- Stakeholders,
- Structures changed in the past and the number of change attempts,
- Outcomes/Impacts of the structural change,
- Government (both as leader and as investor),
- Context/environment,
- Feedback systems (loops within the intervention/system that inform on performance)

These elements are shaped by measurement, analysis and knowledge management systems. They are heavily influenced by the vision of structural change held by the government and by the vision held by the recipients of structural change. The priorities of structural change are to reform, to generate solutions and, as Mazzucato (2015) puts it, to innovate.

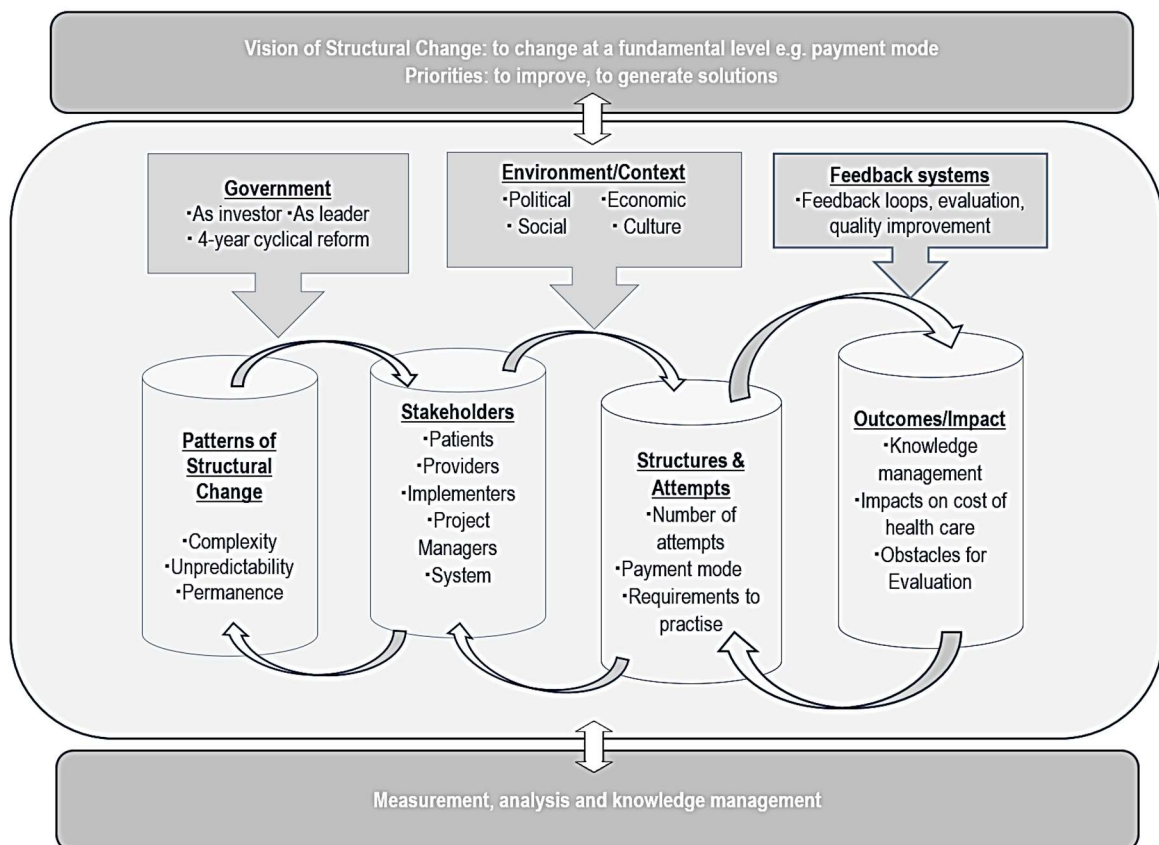


Figure 2-8 Conceptual Framework for Structural Change in Primary Care

The conceptual framework includes one of the elements that distinguish structural change interventions from regular programs and projects. This is the government playing an important role as a leader and investor in the structural change intervention.

As a leader, the government originates structural change via a policy (Pollitt 2009) and its recipients expect to be led or have ‘how-to guides’ to be able to implement the change on the ground. Structural change aims to fix, to reform, to innovate. As an investor, the government has the responsibility to appraise the value of investing public funds to ensure the benefits exceed the costs of implementing the reform (Mazzucato 2015). According to Mazzucato, governments do not have the right tools to evaluate such investments.

Elements of the conceptual framework are elaborated in the next section.

## **2.3 Domains of Structural Change in Primary Care**

Elements of the conceptual framework in section 2 are now used as domains of structural change as described below.

### **2.3.1 Domain I. Characteristics of Structural Change**

Structural change, whether in the form of restructuring, reform, or structural transformation, has specific characteristics that differentiate it from regular projects and programs and requires, therefore, specific evaluation elements.

#### **2.3.1.1 Complexity**

Structural change is complex as it creates difficulties when attempting to make linkages between causes and effects that result from lack of accountability (Coid & Davies 2008).

#### **2.3.1.2 Unpredictability**

Domingo and Tonella (2000) refer to structural change as a 'revolution' and deem it as costly, destructive, and with unpredictable outcomes. Because of the continuous 'moving parts' whilst the change is in process, unpredictability can be a core factor of structural change.

#### **2.3.1.3 Permanence**

At practical and political levels, once the structural change has taken place it is not feasible to reverse as the structural change has already created a new normal. Evaluators, therefore, could only offer a formative evaluation rather than a summative evaluation that would have connected the initiative to its desired outcomes (Pollitt 2009).

Structural change has been characteristic of public sector reform and includes change at internal division levels and change in patterns of coordination. However, its permanence lies in how the

boundaries of the organisations are changed; the form of mergers, splits, devolvement and creation of agencies (Pollitt 2009).

### **2.3.2 Domain II. Environment/Context**

As advised by Toop (2017) from his Health Care Home (HCH) New Zealand experience, the Australian context of HCH will need to answer questions regarding the problems this model is seeking to address and the new versus business-as-usual processes the HCH brings about.

Furthermore, clarity is required to ascertain if the HCH model was preferable to the traditional model in terms of improved outcomes for patients, providers and the whole system (Goldman et al. 2015). Goldman believes that the analysis of context and process of transformation is usually absent and it is an important element in the understanding of change.

#### **2.3.2.1 Political**

Changes in structure are seldom evaluated, except when its deficiencies are highlighted to support the claim of those who will make the next round of changes to the system (Dwyer 2004). "There are many reasons for this failure, some of them political. One pertinent reason is that outcomes like containing the pressure of future growth in demand, or improving health outcomes for the population, cannot be judged within a realistic time frame" (Dwyer 2004, p.5).

#### **2.3.2.2 Social**

The socioecological model includes individual, interpersonal, community, organisational, environmental and macro policy levels. Each level is impacted by complex interventions at different degrees and times in the implementation journey (Wight et al. 2015). Further, the social context in which programs are executed, the complexity of these programs, and the methodological rigour required make the evaluation of health programs challenging (Masso, Quinsey & Fildes 2017).

### **2.3.2.3 Economic**

The structure of the Australian economy has changed over the years moving from a production-based economy, manufacturing and agriculture, to a services-based economy. The rate of change has increased from 2000 onwards (Connolly & Lewis 2010). As manufacturing and agriculture declined, business services, such as financial and professional services along with social services such as health and education, have increased. The services industry is less capital intensive than manufacturing, mining and agriculture but more labour intensive and employs 85% of the workforce (Connolly & Lewis 2010).

Structural change in Australia has been driven by increased demand for services, industrialisation of East Asia, economic reform and technical change (Connolly & Lewis 2010). Demand for services increased from 40% in 1960 to more than 60% in 2010 for services including health, education and financial services. The global manufacturing share of east Asia has almost tripled from 1970 to 2008 creating a decrease in the share of manufacturing goods in Australia, the US and Europe. Economic reform included the restructuring and deregulation of services. Services that were previously provided by monopolies of government were restructured and policies to promote competition in the service industry were put in place. Technical change had driven structural change since 1970 when investments in computers and software increased at a rapid rate improving business practices and communications technology (Connolly & Lewis 2010).

Initiatives driving structural change, particularly to reform how Primary Health Care is financed in Australia, go back to the 2009 National Health and Hospital Reform Commission report, 'A Healthier Future for All Australians', in which access to services, equity, quality, innovation and

governance in Primary Health Care were of concern (Fitzgerald 2015). The economic environment, therefore, plays an important role in the evaluation of structural change.

#### **2.3.2.4 Culture**

So far, structural change has resembled organisational change and health reform by having the ability to change funding mechanisms and by introducing new vocabulary into the organisations and systems undergoing the change. It seems as if structural change could also alter the culture of an organisation or system.

"Organisations are likely to behave in the future according to previously used routines" (Amburgey, Kelly & Barnett 1990, p. 163). Wynen, Verhoest and Kleizen (2016) studied the effects of reforms on the culture of existing organisations as did Cockerill and Lemieux (1998) in their framework for Evaluating Organisational Change in Healthcare Agencies with indicators such as staff morale and absenteeism.

#### **2.3.3 Domain III. Stakeholders**

A wide array of stakeholders with competing interests (Jolley et al. 2008) are involved in structural change either by initiating, implementing or influencing the success of structural change. It is clear that even when an organisation is going through structural change, the same quality of service delivery or performance is expected by its stakeholders.

When implementing structural change, the corporate/private sector deals only with shareholders; whereas, in the public sector, successful structural change is more difficult because of the broad range of stakeholders involved (Jolley et al. 2008). For example, in the 1990s an attempt to rationalise services by moving a hospital from the city to a suburb was stopped following stakeholder pressure (Jolley et al. 2008).



Therefore, a tool for evaluation needs to include stakeholder engagement, a careful examination of their desired outcomes and elements such as the program's merit, sustainability and expansion to other areas or populations. The tool should be easily understood by the wide array of stakeholders and should use a language and method that invites their interaction (Masso, Quinsey & Fildes 2017).

For instance, a framework developed by Kotter has a list of requirements for achieving structural change. The list includes agreement among staff and managers that the change is needed, involvement of leaders who will drive the change, communicate the change's goals and vision thoroughly, agreed willingness to overcome barriers to change, and make sure progress does not depend only on key people being present. Lastly, it checks that the change is altering the culture within the organisation (Jolley et al. 2008).

### **2.3.3.1 Patients and Practice Staff**

The awareness of structural change by patients is important as ultimately, they will be recipients of the change.

Aysola et al. (2013) found that patients in a general practice did not perceive structural changes even though the practice had already switched to a patient-centred model. This might happen when practices have adapted to expectations of them instead of having a deep understanding about what the structural change is pursuing. Adaptation is a 'defensive adjustment'; it does not imply the understanding of causal relationships or implies organisational learning (Fiol & Lyles 1985). Structural change must reach deep enough into stakeholders to make them feel part of the process.

McAllister, Sherrieb & Cooley (2009) highlight the importance of patient engagement on care redesign, role expansion for improved care coordination, proactive and planned care, and how patient information helps families to know what to expect from the practice to better engage in healthcare partnerships with their team and foster an active role for the patient. The practice expanded the roles for staff to provide practice-based care coordination, development and monitoring of care plans, development of information for patients and families (e.g., brochures, newsletters, and websites) to communicate the best ways to access care. The practice provides a medical home definition and explained practice-based care coordination in order for their patients to be part of the process.

### **2.3.3.2 Providers**

Medical professional groups, because of their expert knowledge and access to the political process, have great influence in shaping health policy. Consumers, politicians and bureaucrats cannot challenge this group because they lack expertise. High expectations from the community and life and death decisions characterise health care, therefore the media and politicians can use this at their convenience (Jolley et al., 2008).

Amburgey, Kelly and Barnett (1990, p. 163) warn that "decision makers often seem able to reinterpret their objectives or outcomes in such a way as to make themselves successful even when the shortfall seems quite large" therefore change often happens despite unwanted consequences or without any consequences at all.

Stakeholder analysis is required in the structural change evaluation process. Stakeholders are a large group capable of influencing the outcomes of structural change.

#### **2.3.4 Domain IV. Outcomes of Structural Change**

Policy makers are not always committed to feedback and evaluation. This leaves the connection between structural change and performance unexplored (Pollitt 2009, pp. 285-291). According to Pollitt (2009, p. 3) there are different reasons for this:

- the new policy is politically sensitive and its promoters want to drive forward, minimizing the possibility of critical comment, and resulting doubts, distractions and delays.
- a reversal of the reorganization is just not feasible, so any idea that a summative evaluation will result in a change to something else is unrealistic.
- Evaluations are often set up, but too late, so that evaluators can have no clear view of the baseline performance, prior to the structural reform
- Policy makers cannot wait for the full set of results

The UK has more data on performance than other countries but concludes that data is unavailable on the "extent of the reform and its consequences" and when impact of the reforms is estimated it does not consider the full range of factors (Pollitt 2009, pp. 285-291).

Many authors have pursued the outcomes of structural change under the definitions of health reform, restructure, transformation and many others.

Zlateva et al. (2015) examined the experiences of patients in care coordination services and the ability of staff to notice the structural elements of care coordination in favour of continuous improvement of care coordination services and clinical and financial outcomes.

Reeve, Humphreys and Wakerman (2015) propose a framework that links structure and processes with community health outcomes with the added caveat that the framework required further testing.

Hannan and Freeman (1984) caution that adjusting structure to fit with the shifts in environment requires speed in responsiveness on the part of the organisation and that those changes become moral and political instead of technical therefore causing opposition for the purposes of maintaining the status quo. These oppositions delay structural change and a more productive stance is for organisations to adopt a 'structural change mode' where structures of communication and coordination are mobilised to assist staff and stakeholders through the change process.

However, in structural change in health care, when significant changes in the history of health services have occurred in 'jolts' as a response to changes in demography patterns and disease (Coid & Davies 2008), jolts make the linkages of changes to outcomes challenging. Indicators are therefore required in the areas of direct patient care, patient outcomes, staff satisfaction, cost of healthcare and remuneration and funding.

Rule et al. (2017) found that changes at a practice level did not translate to outcomes in quality of care for patients. General Practitioner services are under-resourced because of constant changes in policy and managing program redesign in the dynamic environment of primary care is challenging as policy, populations and funding structures are constantly changing. This is another example of the challenges in linking outcomes to structural change.

Remuneration of General Practitioners (GPs) in Australia changed during 2014 and 2015 as the

government suggested a reduction in Medicare rebates and introduced patient co-payments that gave rise to fears about negative effects such as inequality and affordability (Fitzgerald 2015).

More recently, structural change happened again with the Health Care Home (HCH) initiative being introduced to transform the health care system by making fundamental changes to the way service providers are compensated and the way care is delivered (Cumming et al. 2018). Robust studies that link remuneration of General Practitioners to improved health outcomes remain lacking.

## **2.4 Tools for Evaluation of Structural Change**

In Australia, the evaluation of structural reforms between 1983 and 1992 was unable to link a productivity increase to reforms. The evaluation explained it was because it was done in a time of rapid change making it impossible to separate impacts on cost, agency performance and clients (Pollitt 2009).

Internationally there has been a trend for lack of evaluation of structural change. In the US, reforms under the Clinton and Bush presidencies were not formally evaluated but rather informal assessments were made. In Belgium, there was no official evaluation for a prominent public service reform for a whole generation. In the Netherlands, a reform consisted of 60 projects termed 'Modernizing Government'. A programme over five years was not systematically evaluated and therefore there is little evidence of evaluation in government management reforms. In Finland, a major structural change to national boards and agencies was not evaluated; however, academic reviews were performed on staff attitudes and reforms were compared to other countries. In Italy, reforms in which political parties were realigned and decentralisation took place were evaluated in health care and local governments; however, there was no formal evaluation of the reform in central government (Pollitt 2009).

### **2.4.1 What has been learnt from Recurrent Reforms**

After reviewing ten years of health system reforms in New Zealand, lessons learnt include that clear goals and strategies are required as well as early consultation with stakeholders, establishing a rapport and appointment of champions amongst staff to promote change. Deep reform needs time and before replacing or changing a current structure it should be evaluated in for effectiveness (Jolley et al., 2008).

### **2.4.2 Timing of Evaluation of Structural Change**

Amburgey, Kelly and Barnett (1990) consider the effects of change to be dependent on the timing within the organisation's life cycle. It is important to consider the 4-year election cycle (Jolley et al., 2008) in which structural change in Australia is framed and whether a change of people in power brings about a change in policy.

Amburgey, Kelly and Barnett assert that structural resistance to change extends the time for change to occur and that this slow response is characteristic of structural change. This is relevant to structural change timing as the effects of the last change might yet have been manifested and this has implications for the evaluation of its impacts.

Jolley et al. (2008) stated that in health reform, and before introducing another change in policy, a long time is required for implementation and evaluation using indicators over 1-2 years, 2-4 years, 5-10 years using measurement tools such as surveys, and strategic plans.

### **2.4.3 Frameworks to Measure and Evaluate Health System Performance in Australia**

Hoffman et al. (2012) found that health systems are multi-layered, sophisticated, nonlinear and

resistant to planned change because of ingrained practitioner silos, policies, guarded interests, and diversity in culture; all of which adds complexities. The authors found 41 health systems frameworks globally and 50% of these were focused on portions of the health system rather than the whole.

In Australia, the pursuit of a framework to measure the performance of the health system has been ongoing (see figure 2-9). A national framework to evaluate health system performance has been in evolution since 1987 when the Australian Institute of Health and Welfare (AIHW) was established to manage data on welfare statistics. In 2001, the National Health Performance Framework (NHPF) was developed to inform health system performance with data on improvements of health services, health policies and overall performance (Department of Health 2018).

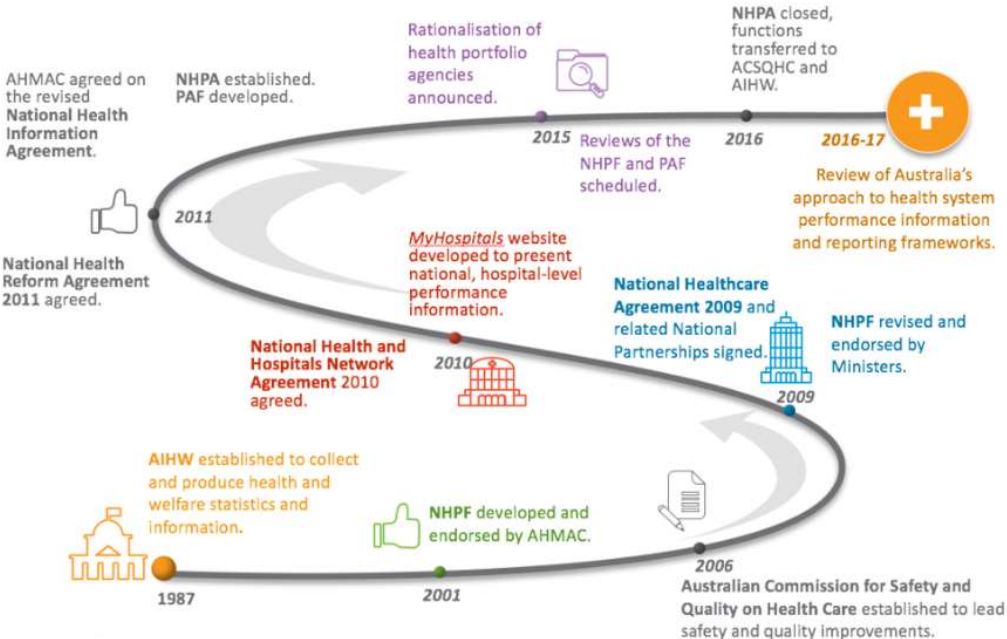


Figure 2-9 Changes in Performance Framework 1987-2017 Source: Commonwealth Department of Health 2017

The Australian Commission for Safety and Quality on Health Care (ACSQHC) released a framework in 2009 which stipulates three core principles for safe and high-quality care: consumer centred, driven by information, and organised for safety. These were endorsed by the

Australia Health Ministers' Advisory Council (AHMAC) in 2010. The National Safety and Quality Health Service (NSQHS) Standards are were released in 2019 (Australian Commission on Safety and Quality in Health Care 2017).

Taking the example of the Health Care Home (HCH) initiative, launched as structural change by the Commonwealth government, the table below features indicators that some authors have studied in the quest to find linkages between changes made and outcomes achieved.



Author	HCH Outcomes	Indicators
Gilfillan et al. 2010	Integrate and improve patient care whilst reducing healthcare spending	Evaluated the ability of a medical home model to improve the efficiency of care. Used Proven Health Navigator (PHN) a model to address care delivery and financing to improve quality, efficiency and patient experience of care. PHN reduced admissions and readmissions for the population studied.
Sia et al. 2004	1) Commitment to the individual, 2) primary services, 3) full- time accessibility, 4) service continuity, 5) comprehensive record-keeping, 6) competent medical management, and 7) cost-effective care.	<ul style="list-style-type: none"> <li>• Creation of the Division of Community Paediatrics to support community access to child health</li> <li>• Medical home training program that included factsheet on the medical home concept and codes to improve reimbursement for services provided.</li> </ul>
Cooley et al. 2009	Reduced hospitalisations	To test the hypothesis that increased medical homeness is associated with decreased utilization of health services and increased patient satisfaction. Used the Medical Home Index (MHI) to measure “medical homeness”
Aysola et al. 2013	Improved quality of care	Using multivariable regression to compare children without Medical Homes to those with Medical Homes and found that those with Medical Homes showed improvements on 6 out of 10 quality of care measures (adjusted rates)
McAllister & Sherrieb 2009	Patient engagement on care redesign, role expansion for improved care coordination, proactive and planned care, patient information helped families to know what to expect from the practice and to better engage them in healthcare partnerships with their team, fostered active role of the patient	1. Practice engagement of patients and families in decisions about care redesign. 2. Identification of patients, assignment of a complexity level, and enrolment in a practice registry. 3. The expansion of roles for one or more staff to provide practice-based care coordination. 4. Development and monitoring of care plans 5. Delivery of care that is proactive and planned with the intention of increasing the value of the office visit (this includes pre-visit contacts with families to update all information prior to the appointment, having medical records readied for visits, and timing of visit duration being appropriately set). 6. Development of information for patients and families (e.g., brochures, newsletters, Websites) was completed to communicate the best ways to access care, provide a medical home definition, and explain practice-based care coordination.
Jackson et al. 2013	Outcomes in Cost & utilisation, population health & Preventative Services, Access and patient or clinician satisfaction	<ul style="list-style-type: none"> <li>• Cost &amp; utilisation e.g. ED use, inpatient admissions, specialty visits, increase in phone encounters, patients evaluated within 48 hrs of discharge, lower rate of inappropriate antibiotic use, fewer readmissions</li> <li>• Population Health and Preventative Services</li> <li>• Access</li> <li>• Patient or Clinician satisfaction</li> </ul>

Table 2 Indicators of HCH Outcomes

The following section considers the possible requirements for the evaluation of structural change.

### **2.4.3.1 Requirements for the Evaluation of Structural Change Impacts**

To evaluate the impact of structural change, it is necessary to attribute a specific change in structure to a specific change in performance. Therefore, it is necessary that policy makers commit to feedback and evaluation (Pollitt 2009):

- connect structural changes to outputs and outcomes using (as much as possible) a short, straight causal chain
- ask what parts of the structural change is effective in improving outputs and outcomes e.g. new planning and budgeting systems may be introduced and new personnel assigned; however, not all will effectively contribute to improvement,
- Consider other processes happening at the time of the structural change e.g. funding increases and decreases, cultural change, policies, decision making changes,
- Consider stakeholders' perceptions of the justification and meaning of the structural change and their intended results,
- Have a clear baseline performance preceding the structural change and make it available for the evaluation.

Assessment of the impact of structural change should include the split responsibilities between the Commonwealth and states/territories and the future determinants of supply and demand of health services, health financing (Federal and State responsibilities), individual services coordination (e.g. aged care), information management and prevention and the treatment resourcing mix (Rix, Owen & Eagar 2005).

### **2.4.3.2 Ensuring sustainability of Structural Change**

Jolley et al. (2008) found that political commitment, monitoring and evaluation, along with

appropriate workforce and resources were necessary to ensure a change was sustainable.

However, they highlighted that with a four-year election cycle, the re-education of people in power is required.

### **2.4.3.3 Existing Frameworks used in Evaluating Structural Change**

Some of the existing frameworks for evaluating complex interventions include 'intervention mapping'. Intervention mapping includes six steps and is rigorous and elaborate and requires years for implementation. A conceptual framework for planning intervention-related research proposes nine steps for developing and evaluating public health interventions with sufficient detail for operationalisation.

The PRECEDE-PROCEED model in which 'PRECEDE' is planning and 'PROCEED' is evaluation requires highly technical skills, has high demands of time, and is expensive.

The framework for design and evaluation of complex interventions to improve health is particularly applied to healthcare services but has not enough detail on intervention development.

The MRC guidance for the development and evaluation of complex interventions (mainly dedicated to evaluation) includes three stages of intervention development but does not elaborate the stages in detail.

The design for behaviour change framework focuses on behaviour change and uses steps illogically and its terminology is confusing (Wight et al. 2016).

Because of the intricate nature of complex interventions, Campbell et al. (2000) recommend the use of an iterative approach rather than a sequential step approach. As such, current approaches

tend to focus on individual behaviour change and insufficient guidance is available on the development and evaluation of public health interventions. Other approaches focus on the individual and community levels but do not address the system level; a dimension necessary for structural change evaluation (Wight et al. 2015).

More recently, a US study (Asada et al. 2017), found that 76% of the studies of structural change evaluation did not use a framework for evaluation. A small percentage did include a logic model, RE-AIM, health impact analysis framework, theory of change, systems theory and process evaluation framework as illustrated in tables 3 and 4. Some studies mentioned the use of conceptual or theoretical frameworks for the design of the evaluation but these differ from frameworks for evaluation and were, therefore, not considered.

Other approaches have applied strategies at multiple ecological levels such as policy level, media level, community level, school level, family level and individual level. These approaches highlight the need to assess the various combinations between levels and strategies to ascertain their level of impact (Evans et al. 2010).

Maar et al. (2017) identified four evaluation domains or human organisational levels influenced by the intervention: these are patients, providers, community and organisation actors, and health systems and settings. In each domain, the authors explored themes such as main component of the intervention, technology of the intervention, cultural congruence, task-shifting and unintended consequences. They propose a framework to inform stakeholders on implementation and scale up of mobile health services.

Tables 3 and 4 are a compilation of a group of frameworks found in the literature, their strengths,

weaknesses and opportunities for improvement.

Framework	Principles	Strengths/Weaknesses	Opportunities for Improvement	Example
The Medical Research Council framework (MRC) for the development and evaluation of randomised controlled trials for complex interventions (Campbell et al. 2007)	Stepwise approach, similar to the one used in evaluating new drugs: Phase 0--Preclinical or theoretical (why should this intervention work?) Phase 1--Modelling (how does it work?) Phase 2-- Exploratory or pilot trial (optimising trial measures) Phase 3--Definitive randomised controlled trial Phase 4-- Implementation	Strengths: direct implications on causation. Influential worldwide Weaknesses: may blur the lines between context and intervention and their several connections; randomisation and blinding can be problematic or not applicable; risk of contamination between groups (Portela et al. 2015)	Reduce bias via improvement of design and reporting of RCTs, reduce preconceptions and judgments about an intervention	Community based screening for genital Chlamydia trachomatis infection
Knowledge to Action (KTA) Framework – uses action cycle: Plan-Do-Study-Adjust-Sustain Zullig & Bosworth 2015	Applies KTA framework to a case study. It assists in identifying appropriateness of program for scale up	Strength: Flexible to test changes and adapt interventions. Weakness: generalisability of findings not forthright, mechanisms of change not systematically explained, reports can be vague (Portela et al. 2015) •" Has the intervention been proven beneficial to patients? Are there potential harms? •Are the improvements in medication adherence and blood pressure control maintained over time? •Is there new knowledge worth translating into action? •What alterations would need to be made if the intervention is scaled up to the health care system?" p. 200	Requires integration of theoretical base and qualitative methods systematically to explain the mechanisms of change involved; requires scientific rigour in the application and reporting of PDSA cycles (Portela et al. 2015)	Apply research from small case study in primary care to larger health care systems. Integrates knowledge creation and knowledge application.

Table 3 Frameworks currently in use

Framework	Principles	Strengths/Weaknesses	Opportunities for Improvement	Example
Multilevel Framework for Health Program Evaluation Masso, Quinsey and Fildes 2017	Level 1 – Consumers Level 2 – Providers Level 3 – Care Delivery System	Strengths: direct inferences on causality. Weakness: •Ability to differentiate between interventions (treatment or prevention) •Can categorise implementation strategies at each level according to each strategy's goal •Identifies methods to evaluate effects of program strategies and to identify gaps in implementation •Serves as sustainability planning tool: "What strategies will be used to implement the program at	Allows for predictability and explanation of mechanisms of change, requires adaptation and testing, particularly in structural change	Public hospitals, Palliative Care, School-based programs, Nursing Homes.

Framework	Principles	Strengths/Weaknesses	Opportunities for Improvement	Example
		each of the three levels? • What strategies will be used to sustain the program? • What capacity will be built by the program? • How this will be measured?" p. 243		
Structural Change Approaches to Health Promotion (Asada et al. 2017)	Logic Model (Ellen 2015)	Individual level only, via survey – intervention length: 10 years. Non-experimental.	No system level. Provider and systems level missing. Should involve multiple measurements before and after the intervention is applied (Portela et al. 2015) No system level	HIV risk outcomes
	Logic Model (Brownson 2015)	Individual and community level – Quasi-experimental. No control group		Chronic Disease Prevention
	Logic Model (Cheadle et al. 2010)	Individual and community levels. Non- Experimental. Length 5 years		Chronic Disease Prevention
	Process Framework (Baquero 2014)	Individual and site level, observational, training sheets, survey	Must be longitudinal and prospective. Could compensate with statistical techniques if no control group (Portela et al. 2015)	Community focused
	Health Impact Assessment (Cole 2005)	Individual and community	Simulated model. Secondary analysis	Living wage/ housing policy
	Process Evaluation (Gittelsohn 2010)	At individual and site level – 10 months long	No system level	Community focused

Table 4 Continuation - Frameworks currently in use

From the compilation above, it can be concluded that there is currently no framework that can satisfy the requirements of evaluating structural change.

#### 2.4.4 Characteristics of the most suitable Framework

Desirable characteristics of a framework to evaluate structural change include a multilevel evaluation framework that allow the categorisation of structural change, implementation of strategies, identify methods to evaluate the effects of these changes and strategies, and foster the recognition of implementation gaps (Masso, Quinsey & Fildes 2017). The framework should offer the ability to be used as a planning tool to ensure that change becomes daily practice (Wight et al. 2016).

The different frameworks used steps, a series of questions and target different levels at which the

intervention might have an impact. However, challenges arise because of intricacies in evaluating complex structural change, including its socioecological model which encompasses individual, interpersonal, community, organisational, environmental and macro policy levels. Each level is impacted by complex interventions at different degrees and times in the implementation journey (Wight et al. 2016).

Evans et al. (2010) highlights the need to assess the various combinations between levels and strategies to ascertain their level of impact. Therefore, it is important for the framework to include stakeholder engagement, a careful examination of their desired outcomes and elements such as the program's merit, sustainability and expansion to other areas or populations. The tool should be easily understood by the wide array of stakeholders and should use a language and method that invites their interaction (Masso, Quinsey & Fildes 2017).

One of the intricacies of evaluating structural change involves defining and understanding the problem of complex interventions, Campbell et al. (2000) recommend that mechanisms and pathways be mapped out from intervention to desired outcomes adding to this map its corresponding evidence and data. For example, cardiovascular disease and smoking behaviour are directly related. To understand the pathways that create the problem, several linkages need to occur; added to smoking there is also poor diet and sedentary lifestyle. The understanding of these linkages could be aided by psychology theories that connect intention with behaviour; in this case, desired lifestyle change (Campbell et al. 2000). Further, an analysis is required to ascertain whether these pathways are subject to change and at what points, and if the potential for improvement is quantifiable and how (Campbell et al. 2000).

Frameworks guiding the evaluations were seldom mentioned and emphasized the need for

having a 'strong evaluation framework' for clarification as complex structural interventions "often target multiple and complex causal chains" (Asada et al. 2017, p. 9). As most of the studies estimated outcomes at individual and site level, and only a few involved community levels, an easy to use multilevel evaluation framework could serve as guidance for evaluation of structural change.

#### **2.4.5 Limitations of Evaluation Frameworks in Structural Change**

Some of the existing frameworks for evaluating complex interventions present limitations such as requiring highly technical skills; they lack sufficient detail and are difficult to operationalise (Wight et al. 2016). The evaluation tool should allow mapping to patient, provider and system levels and be easily understood by the wide array of stakeholders through using a language and method that invites their interaction (Masso, Quinsey & Fildes 2017).

The evaluation of structural change should start with the recognition that as complex interventions are "made up of various interconnecting parts" (Campbell et al. 2000, p. 694) the same applies for structural change. The problem in evaluating complex interventions arises with issues in developing, identifying, documenting and reproducing the complex intervention (Campbell et al. 2000).

The social context in which programs are executed, the complexity of these programs and the methodological rigour required make the evaluation of these interventions challenging (Masso, Quinsey & Fildes 2017).

A multilevel evaluation framework would allow the categorisation of structural change, implementation strategies, identify methods to evaluate the effects of the changes and strategies,



and foster the recognition of implementation gaps (Masso, Quinsey & Fildes 2017).

#### **2.4.5.1.1 Challenges of Structural Change Evaluation**

Implementation of structural change can often seem to be chaotic and as something that adds further complexity to the system in which it is to be deployed. Coid and Davies (2008) add that such complex systems create difficulties when trying to make linkages between causes and effects and lack of accountability can be a result.

Evaluating structural change is challenging largely due to the same factors that characterize any complex intervention (Asada et al. 2017):

- A long pathway between environmental changes and targeted health status changes requiring long-term extensive evaluation which can be costly and carry study design issues,
- Multi-levels to be able to inter-relate intervention mechanisms with health or behavioural effects, which is problematic as these effects are brought about by multiple factors,
- Interaction at an organisational level and at a relationship and individual level that needs to occur simultaneously or consecutively.

Even when public health is changed at its structure, the evaluation of the impact of these changes can be challenging. For instance, a structural change might not help a community in disadvantage because of the levels of crime within the community. For example, new walk pathways might not be enjoyed by a community as intended because of danger in their streets (Asada et al. 2017).

Issues of value, equality and cost effectiveness in public policy add complexity to the overall evaluation (Milstein & Wetterhall 1999; Petticrew et al. 2004). In the process, a challenge arises when having to analyse connections between the content and process of change and of outcomes. Therefore, change must have a solid causative theoretical basis and its strategy needs to be clear.

Adding to this challenge, the socioecological model consists of individual, interpersonal, community, organisational, environmental and macro policy levels. Each level is impacted by complex interventions at different degrees and times in the implementation journey (Wight et al. 2015).

Other challenges for evaluation consist of the social context in which programs are executed, the complexity of these programs, and the methodological rigour required for the evaluation (Masso, Quinsey & Fildes 2017). There have been several frameworks to evaluate system performance; however, none are specific to structural change.

#### **2.4.5.1.2 Obstacles for Evaluation**

Constant changes and reform in health care around the world and to its effectiveness remains unevaluated; and there are reasons for this (Jolley et al. 2008):

- Research and evaluation are not concurrent with changes in policy, which makes an evidence base for health policy problematic,
- There might be the idea that reform is an end in itself instead of being a means to achieve policy goals,
- Governments do not support systematic evaluations as these could undermine political objectives.

Obstacles to evaluation and feedback include the desire to avoid critical comments, doubts, distractions and delays; particularly if the policy is politically sensitive and the sponsors want to go ahead and implement change (Pollitt 2009).

Also, as high amounts of energy are required for structural change, it is difficult to maintain the same energy during the evaluation stage as evaluating change is challenging. These evaluations of structural change do not have a clear point of implementation. Changes in key staff, stakeholders and elements of the structural change that occur during the process together with simultaneous changes in the environment contribute to making evaluation a challenge. The lack of a framework to provide a perspective on the impacts of large-scale change is another obstacle for evaluation of structural change (Cockerill & Lemieux 1998).

Cockerill & Lemieux (1998) found that key stakeholder concerns about being evaluated or judged can also be an obstacle to evaluation. They renamed the process ‘monitoring’ to ease these concerns. However, they continued to call their framework ‘evaluation’ as it encompasses the structure-process-outcomes relationship.

Sometimes, the reason for lack of evaluation of structural change is the absence of change. In the US, the Medical Home (equivalent to the HCH initiative) was supported as a strategy for the improvement of quality and efficiency of the healthcare system. This meant that General Practices needed to embrace structural changes such as team-based care, quality measurement and improvement, enhanced access and care coordination. General Practices were given incentives to implement such changes; however, because of differences in practice's baseline levels, some practices could achieve incentives without making any structural changes as they

were already well developed in these areas. For example, if they had transformed information systems, their patients' access to care did not undergo any change at all (Martsolf et al. 2015).

## **2.5 Key Research Learnings**

This chapter has explored the definition, conceptual framework, domains and tools for the evaluation of structural change. Challenges to evaluation include ambiguity in the definition of structural change in primary care and the lack of a tool able to accommodate its intricacies.

As outlined in this chapter, there has been little research and because authors do not label their research as structural change, it is also difficult to find a robust body of knowledge on structural change.

Key learnings include the lack of consensus in the literature on the notion of structural change in primary care. It is clear that structural change is often misunderstood in practice and its evaluation is currently under-researched and approached no differently than that of regular projects and programs which has implications to its evaluation. Structural change requires time to implement, establish and evaluate. It is recommended to have a clear picture of the advantages and shortcomings of the current structures and their effectiveness before undertaking structural change. The case for change should be strong and not one that moves with, for example, election waves.

## **Chapter 3 Methodology**

This chapter describes the sequence of research activities and the research design used to examine structural change and its evaluation within the context of the primary care system in Australia.

In the literature, authors do not identify their work as structural change and a definition in health care has not been yet agreed upon (Asada et al. 2017). Authors have referred to structural change as the re-orientation of the health system towards primary health (Donato & Segal 2010), structural transformation (Martsolf et al. 2015), transformational change within health policy (Jolley et al. 2008), cyclical reform (Wynen, Verhoest & Kleizen 2016), restructuring (Braithwaite, Westbrook & Iedema 2005) and many others. This creates challenges for the evaluation of structural change, more specifically in General Practice. The evaluation of the Patient Centred Medical Home (the equivalent to Health Care Home in Australia), for example, proved challenging in the US because of inconsistent methodologies and lack of standardisation in MeSH terms (Korenstein et al. 2016).

### **3.1 Research Overview**

As foreshadowed in the introduction to this thesis, a “research onion” (Saunders, Lewis & Thornhill 2019, pp. 343-353) illustrates the stages of the methodology used in this present research (see Figure 3.1):

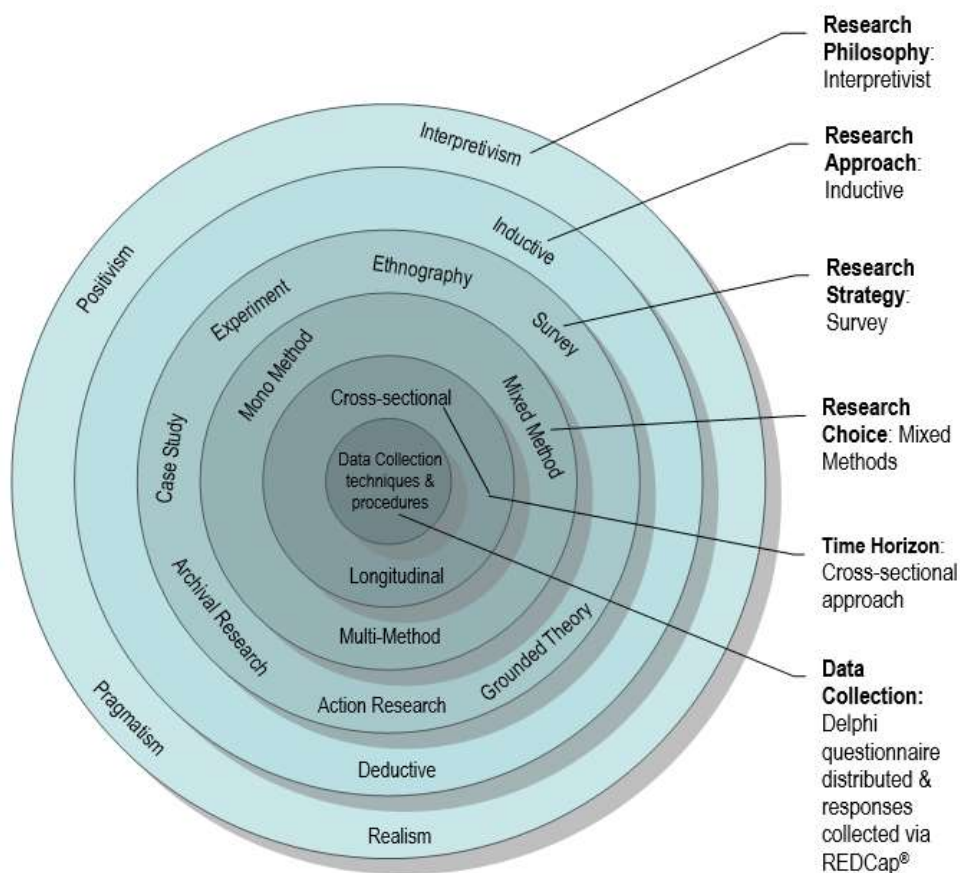


Figure 3-1 Research Onion adapted from Saunders, Lewis & Thornhill 2019 pp. 343-353

The research philosophy adopted for this study is interpretivist with an inductive approach by means of a Delphi questionnaire survey as strategy. Interpretivism was adopted because structural change in primary care is complex and under-researched and a Delphi study has been recommended in these instances (Day & Bobeva 2005). Within an interpretivist philosophy, the use of a quantitative (descriptive) method with a cross-sectional approach was determined to suit the exploration of the aims and research questions in this research. Interpretive quantitative research focuses on looking at the research topic through the perceptions of participants and allows for a more holistic process of discovery (Westerman 2006). Primary and secondary sources in the form of two rounds of a Delphi questionnaire, academic and grey literature provided the data for analysis.

<b>Methodology Stages of this Research</b>	
<b>Research Philosophy</b>	Interpretivist
<b>Research Approach</b>	Inductive
<b>Research Strategy</b>	Survey
<b>Research Choice</b>	Quantitative (descriptive)
<b>Time Horizon</b>	Cross-sectional approach
<b>Data Collection</b>	e-Delphi questionnaire

Table 5 Methodology Stages adapted from Saunders et al., pp. 343-353, 2019

The research methodology includes the development of a conceptual framework and the gathering of expert opinion on the definition and domains of structural change in primary care using two rounds of a Delphi questionnaire. These findings and analyses inform the examination of the literature for an evaluation tool that can be adopted or adapted to structural change. Once adopted or adapted, a prototype of the evaluation tool is developed with its application to primary care.

### 3.2 Research Design

The graph in Figure 3-2 illustrates the research design and its alignment with the aims of this research (previously stated in Chapter 1):

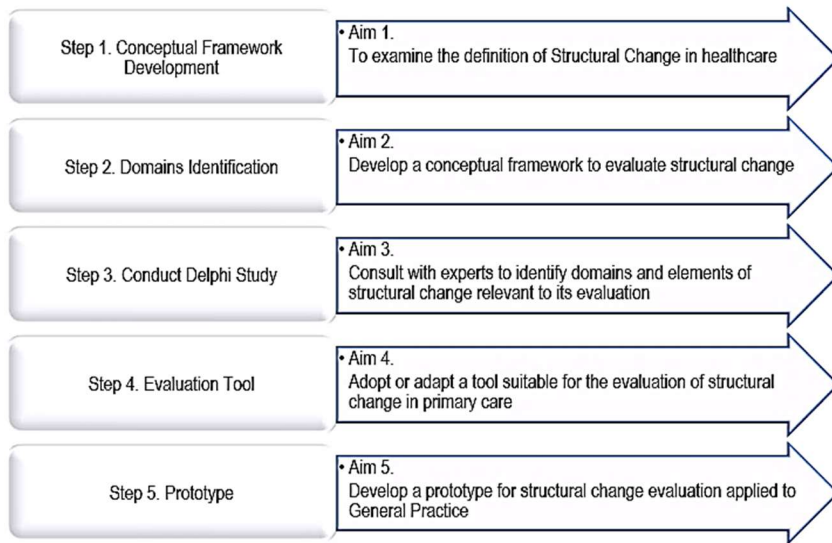


Figure 3-2 Research Design and Research Aims Alignment: Evaluation of Structural Change in Primary Care

A methodological decision tree based on Mock (1972) was considered when studying the options for this research (see ‘Methodological Decision Tree’ in Appendix 1) which form part of the audit trail for this research. Figure 3-3 shows how this research was conducted.

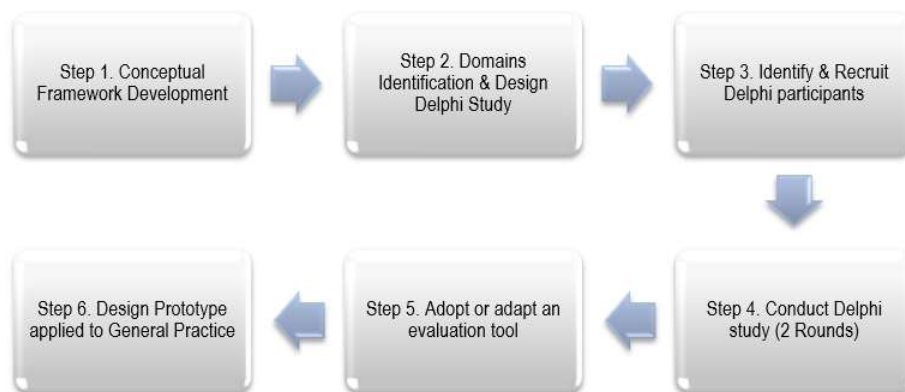


Figure 3-3 Sequence of Research Activities

### 3.2.1 Step 1: Development of the Conceptual Framework

A literature review was conducted to develop a conceptual framework for the evaluation of structural change in Primary Healthcare.

In this step, elements of the Donabedian model (Ayanian & Markel 2016; Donabedian 1966)



were used to identify domains and characteristics of structural change. Donabedian (1966) defines structure as the settings in which the process of care takes place as well as the ‘instrumentalities’ that produce that process of care. Donabedian assumed that “given the proper settings and instrumentalities, good medical care will follow” (p. 695).

Donabedian proposed that rather than studying the process of care itself, researchers could use structure as a means of healthcare assessment. He recognised that the lack of research in the relationship between structure and process or structure and outcome was a major limitation.

### **3.2.2 Step 2: Identification of Domains and Items for Exploration**

From the literature, a set of domains for the study of structural change was obtained. Domains are the areas of interest to be explored in the topic of structural change in primary care. Items for exploration include the questions the expert panel will rate under each domain. The domains helped to structure the questionnaire used to collect data on structural change. Section I of the questionnaire included the definition of Structural Change in Health Care (Asada et al. 2017) and Section II contained the domains or areas for exploration as extracted from the literature:

- Domain 1. Characteristics of Structural Change (Domingo & Tonella 2000)
- Domain 2. Environment/Context for Structural Change (Pollitt 2009)
- Domain 3. Stakeholders in Healthcare (Jolley et al. 2008)
- Domain 4. Outcomes of Structural Change (Coid & Davies 2008; Lieberman & Selker 2000; Martsolf et al. 2015).

The Delphi technique is an iterative method used to achieve consensus in areas with small scientific evidence (Zlateva et al. 2015). Consensus has been defined as “a gathering around median responses with minimal divergence” (de Villiers, de Villiers & Kent 2005, p. 639). In

this research, consensus was determined through a stratification consensus rule in which consensus is classified as clear and general consensus with a third classification being ‘mixed views’. This process is explained later.

The Delphi method allows anonymity of participants, iteration, controlled feedback to participants and statistical aggregation of group response (Skulmoski, Hartman & Krahn 2007). Evaluation of structural change in primary care has been scarcely researched, therefore the decision to use the Delphi technique in this research was deemed appropriate.

This study used two rounds in the Delphi study. The first round contained items or questions on the definition and domains of structural change as found in the literature. Participants rate these items using a Likert scale. Free text fields or ‘comments’ sections are included to allow participants to express opinions and suggest items not listed. The second round’s questionnaire was shorter and was developed to clarify issues from the results of the first round.

The questionnaire was hosted on a secure web application for online surveys called Research Electronic Data Capture REDCap® (Harris et al. 2009). REDCap® has previously been used to successfully conduct Delphi studies (Zlateva et al. 2015).

### **3.2.3 Step 3: Identification and recruitment of participants for the Delphi process**

In this step, experts for the Delphi process were identified. According to de Villiers, de Villiers & Kent (2005, p. 640) “a suitable expert is defined in the literature as someone who possesses the relevant knowledge and experience and whose opinions are respected by fellow workers in their field”. The criteria for inclusion was based on national recognition, publications, clinical/practical experience in the field and participation on structural change consulting groups

as publicly available in government websites.

The sample was recruited using a snowballing technique. In snowball sampling, each participant leads to the selection of another participant in order to get a diversity of participants (Leavy 2017).

A script explaining the methodology, time requirements and expectations was sent to potential participants via email. These expanded on characteristics and methodology of the expert group.

Regarding the number of participants for Delphi studies, the norm is to have 15 to 30 from the same discipline or 5 to 10 per category when they belong to different professional groups. Going beyond 30 has not improved results (De Villiers, De Villiers & Kent 2005). For this research, twenty-one experts were invited via email for completion of two rounds of the Delphi process. Potential participants were followed up via email or phone within ten days.

#### **3.2.4 Step 4: Conducting the Delphi Study**

Participants received a participant information sheet (PIS) attached to the email invite with an expected date of return. Once responses from the first round were received, a file extracted from REDCap® was fed into SPSS for descriptive statistics and ‘free text’ were coded using qualitative data analysis software MAXQDA (2019).

The Delphi participants rated individual items on a 1 to 7 Likert scale ranging from 1 being ‘entirely disagree’ to 7 ‘entirely agree’.

Convergence of opinions was determined through a consensus stratification rule that included all

ratings (full panel responses without eliminating outliers) and included clear consensus, general consensus and mixed views.

With this analysis and insights, the questionnaire used in Round One was modified to produce a questionnaire for Round Two. In the second round, participants were asked to rate items of non-consensus from Round One along with items they might consider for inclusion in a tool for the evaluation of structural change interventions.

A more detailed description of the Design and Conduct of the Delphi Study is presented in a separate section below.

### **3.2.5 Step 5: Adoption or Adaptation of an Evaluation Tool**

Analysis from the Delphi study informed features required of the tool for the evaluation of structural change in primary care. A search of the literature provides information about the tools available for adoption or amendment. As the topic is under-researched, a specific tool for the evaluation of structural change is unlikely to exist. In practice, however, structural change in all its known names is evaluated by the same tools used to evaluate regular projects and programs. It was anticipated that the findings of the research would show that these existing tools would not include all items required for the evaluation of structural change in primary care.

### **3.2.6 Step 6: Prototype of the Evaluation Tool**

Once the tool was adopted or adapted, a prototype for the use in primary care was developed ready for testing in the field.

Prototype testing could take the form of:

- a self-assessment that three people within the practice complete without communicating with each other and returning the results via REDCap®,
- interview or use of a questionnaire to determine the degree of difficulty in using the tool e.g. comprehensibility,
- interview or use of a questionnaire to determine usability and reliability of the tool
- two researchers use the tool to collect data at different times to ascertain the degree of interrater reliability.

The prototype includes a series of screens a hypothetical user of the tool will work through (in this case a general practitioner) to methodically answer questions regarding the structural change they are to implement or have implemented at a practice level.

Once the tool is tested (which is outside the scope of this research) findings could be used to:

- refine the evaluation tool,
- understand areas in which the policy that originated the structural change is misinterpreted or misunderstood,
- identify and address implementation issues,
- reconsider the direction of change management strategies to influence user buy-in and to boost stakeholder engagement.

### **3.3 The Delphi Study**

This section presents an account of the Delphi technique including the process undertaken by this research, characteristics, strengths, limitations, rigour, the rationale for the sample and ethics approval.

Structural change is perceived as a way of improving health care; however, it is currently under-researched and not well understood (Asada et al. 2017; Aysola et al. 2015; Braithwaite, Westbrook & Iedema 2005) this study contribute to filling this gap. Exploratory research “tends to tackle new problems on which little or no previous research has been done” (Brown 2006, p. 43) and the Delphi technique aims to achieve consensus (Hsu & Sandford 2007). This present research used exploratory research and the Delphi technique.

Currently there is no consensus in the literature for a definition for structural change (Asada et al. 2017) or its evaluation. The definition, characteristics, strengths and limitations of the Delphi technique are included below.

### **3.3.1 The Delphi Technique**

The Delphi technique was developed by Dalkey and Helmer in 1963 as a method to achieve consensus regarding real-world knowledge from experts in a topic of interest (Hsu & Stanford 2007). This method has since been widely used and accepted (Hsu & Stanford 2007; Zlateva et al. 2015). The Delphi technique is a group communication process that aims to examine and discuss a particular issue either to set goals, study policy or predict the incidence of future events. Whilst a survey tries to ascertain ‘what is’, the Delphi technique aims to find the ‘what could or should be’ (Hsu & Sandford 2007).

This technique is useful when it is difficult to have all the experts in one room because interactions between researcher and the group of experts happen through a series of questionnaires. The Delphi technique is recommended when opinions on complex matters are required and precise information on the topic of study is not obtainable (Yousuf 2007).

The Delphi technique is helpful in the area of structural change in primary care and its evaluation

where more research is required.

The Delphi technique has been applied in the fields of program planning, needs assessment, and policy and resource utilisation, and has been used to achieve the following (Hsu & Stanford 2007, p.1):

- “to determine or develop a range of possible program alternatives,
- to explore or expose underlying assumptions or information leading to different judgments,
- to seek out information which may generate a consensus on the part of the respondent group,
- to correlate informed judgments on a topic spanning a wide range of disciplines, and
- to educate the respondent group as to the diverse and interrelated aspects of the topic”.

### **3.3.2 The Delphi Process**

A review of the literature, publicly available government documentation and grey literature provided the basis for the exploration of a definition of structural change in primary care and its evaluation.

The Delphi study entailed two rounds. The first round included 52 items in a seven-point Likert scale ranging from ‘entirely disagree’ (1) to ‘entirely agree’ (7). The second round comprised twenty items including non-consensus items from Round One and focused on the evaluation of structural change. The second round used the seven-point Likert scale and introduced a three-point scale for some of the items.

Round One achieved 81% response rate based on 21 potential participants and Round Two achieved 100% response rate based on 17 respondents invited to participate in Round Two. The second round's high response rate was assisted by systematic reminders sent via email.

The Delphi study process is depicted in Figure 3-4 Delphi Process: Structural Change in Primary Care - adapted from Fernández-Llamazares et al., pp. 168-176 (2013).

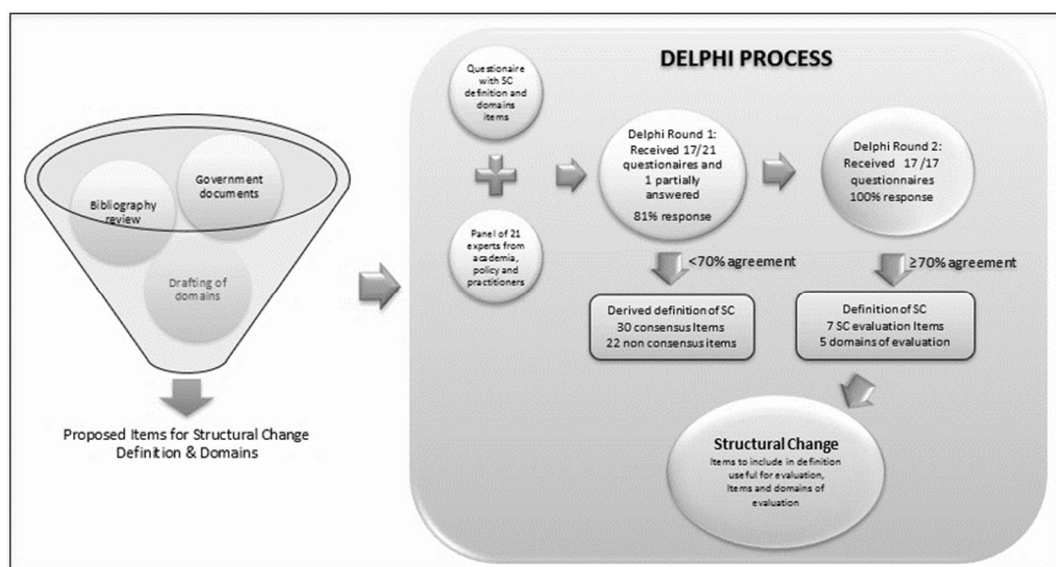


Figure 3-4 Delphi Process: Structural Change in Primary Care - adapted from Fernández-Llamazares et al., pp. 168-176 (2013)

### 3.3.3 Characteristics of the Delphi Technique

According to Yousuf (2007), the characteristics of the Delphi technique are:

- Anonymity – de-identified questionnaires allow for opinions to be anonymous. This is helpful so stronger voices in the group do not dominate quieter members of the group,
- Controlled feedback from the interaction – participants interact by reviewing responses from other group members and evaluate their own opinions as they compare them with those of the rest of the group,
- Statistical group response - the whole group's opinion becomes the statistical



average of individual opinions from participants.

### **3.3.4 Strengths of the Delphi Technique**

The Delphi technique allows:

- the collection of subjective judgments to study a complex problem that cannot be addressed with precise analytical techniques,
- the expert group to communicate albeit not having a previous history of efficient communication,
- conduct of research when time and cost are factors,
- validity of results as participation is equal and there is not domination of participants over others either as a consequence of numbers or personalities,
- consensus to surface with one opinion that represents the group of experts,
- for unpopular and disagreeing views to be stated by participants; these can also amend positions adopted earlier,
- the prevention of ‘groupthink’ which is the illusion of unanimity in a group (Cline 1990) where the whole group thinks likewise. The Delphi technique prevents this as it limits the exposure to dominant personalities (Yousuf 2007).

### **3.3.5 Limitations of the Delphi Technique**

Some of the limitations of the Delphi technique are:

- the researcher could impose preconceptions about the issue on the group by restricting other perspectives related to this issue,
- it can be assumed that Delphi can be a substitute for direct communication,
- reporting on the group response could be summarised poorly,
- risk of achieving artificial consensus if disagreement is not properly explored and

presented back to the group for fear of participant drop-out,

- participants should be recognised as consultants and properly compensated if participation is not part of their job as Delphi is a demanding process. (Yousuf 2007)

To counteract and manage some of these limitations, the report summary of the group response was spot audited by another investigator and items of non-consensus were presented to participants in Round Two of the Delphi study.

The Delphi technique allows input from a group of experts who reply on questionnaires and receive feedback on the statistical representation of the group response. This research design is the most appropriate approach for this study as it allows the gathering of expert opinion in terms of the definition and evaluation of structural change in the field of primary care in Australia.

### **3.3.6 Rigour**

Achieving methodological rigour in the Delphi technique is unclear because of the particularities of each research in terms of study design, sampling and consensus processes. However, Delphi study findings can be compared to appropriate published research to assess their generalisability (Hasson & Keeney 2011). Findings of this research, particularly in terms of the complexity and ambiguity in definition of structural change, were consistent with published literature.

Delphi studies are appropriate for exploration and to gather expert opinion on topics with little or no prior research. The rationale for the development of the Delphi questionnaire initiated from the need to explore a definition of structural change in primary care with a focus on its evaluation. Items for the Delphi questionnaire originated from the literature review.

The evaluation tool for structural change will be adapted or adopted depending on its ability to accommodate the intricacies of structural change i.e. the various levels of stakeholders and how they perceive structural change from within the context in which they are located.

### **3.3.7 Location**

The location of this study was Australia.

### **3.3.8 Time**

Data collection commenced in early 2019 and analysis and findings were finalised in late 2019.

### **3.3.9 Sample**

A group of experts was identified through literature searches, recommendations from institutions, leaders of opinion in the subject and through recommendations from other experts in the topic of structural change in health care, structural change in primary care and health reform. Experts were required to have been involved in structural change by the way of policy, academia, or executive leadership, or to be a practitioner publicly acknowledged experienced in health care reform and (preferably) structural change as known in the literature and depicted in

Twenty-one experts from across Australia were identified through online searches using academic and public databases. The experts are publicly recognised in academia, policy, senior health executives or as leading health practitioners and were invited via email to participate in the study. Their email addresses are publicly available.

Out of twenty-one experts, seventeen completed rounds one and two. One participant's survey was incomplete in Round One and despite reminders it remained incomplete. This survey and its

data were withdrawn from the study. Expert 21 (see Table 6) registered and completed less than half of the questionnaire in Round One (incomplete records were highlighted by REDCap® in orange). This record and its data were removed from the study. Expert 15, 27 and 30 in Table 7 never attempted the questionnaire and were also removed.

Table 7 also forms part of the audit trail for this research. An audit trail of important theoretical and methodological decisions is necessary in a Delphi study to maintain trustworthiness (Skulmoski, Hartman & Krahn 2007).

Email reminders were used as technique to encourage participation.

<b>Record ID</b> (names have been removed)	<b>Participant Register</b>	<b>Structural Change in Primary Care - Round 1</b>	<b>Structural Change in Primary Care - Round 2</b>
<u>14</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>15</u> Expert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>16</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>17</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>18</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>19</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>20</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>21</u> Expert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>22</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>23</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>24</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>25</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>26</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>27</u> Expert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>28</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>29</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>30</u> Expert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>31</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>32</u> Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>







<b>Record ID</b> (names have been removed)	<b>Participant Register</b>	<b>Structural Change in Primary Care - Round 1</b>	<b>Structural Change in Primary Care - Round 2</b>
<u>33</u> Expert			
<u>34</u> Expert			

Table 6 Questionnaire Completion by Record ID

Panellists acknowledged their understanding of structural change and some offered rich expositions alluding to the complexities of structural change in health care and, particularly, primary care in Australia.

### 3.3.10 Rationale for this Group

The expert group consisted of Australian and a minority of Canadian and UK experts versed in structural change and health reform in Australia. Most of the experts are publicly recognised and have publications on the topic. The rationale for this choice is based on the unique Federation arrangements in the structure of the Australian primary care system which is different from other nations and needs to be approached accordingly.

<b>REDCap® Expert Code</b>	<b>Policy</b>	<b>Academia</b>	<b>Practitioner</b>	<b>Executive</b>
14			✓	
15				✓
16		✓	✓	
17			✓	✓
18	✓			✓
19		✓	✓	
20	✓			✓
21			✓	✓
22	✓	✓		
23	✓	✓		
24	✓			✓
25	✓	✓		✓
26	✓		✓	

REDCap® Expert Code	Policy	Academia	Practitioner	Executive
27	✓			✓
28	✓		✓	
29		✓		✓
30	✓			✓
31		✓	✓	
32	✓	✓		✓
33	✓	✓		
34			✓	✓

Table 7 Required skills/experience for Delphi Participants adapted from Gordon, pp. 1-30, 1994

To make sure participants had the required skills for this study (Gordon 1994, pp.1-30), Table 7 was developed. The group came from four major fields, policy, academia, senior executive members and publicly recognised practitioners. They are leaders of opinion and all were versed and involved in health reform and structural change. Participants included high calibre executives that are doctors, one nurse, allied health professionals and other backgrounds who are easily identified in academia, the media and primary care and therefore revealing more could breach anonymity.

### 3.3.11 Ethics Approval and Consent

Upon receipt of approval from the Human Research Ethics Committee 2018/407, I proceeded to contact prospective research participants via email explaining the purpose of the study, criteria for selection and potential benefits of the research and requested their cooperation. The Participant Information Sheet (PIS) and consent form were approved. Their participation was voluntary and participants were free to withdraw from the research including data they had provided at any time. They could inform of their withdrawal via email, phone call or text message. One participant completed the first part of Round One and left the questionnaire incomplete despite email reminders sent to all participants. The participant did not contact me nor my supervisors with their wishes to withdraw therefore at the completion of data collection for Round One, their partial data was withdrawn from the study. Two other participants never

started Round One of the Delphi study and their details were also removed from the study.

### 3.4 Delphi Methodology

The methodology includes an iterative process of inviting experts identified through the literature as having participated in either the Primary Health Care Advisory Group (PHCAG) or the Health Care Home’s Advisory Group supplemented by a snowballing technique whereby the initial group of experts were invited to nominate other experts who should also be consulted. This process led to the final group of participants being identified as experts for this Delphi study.

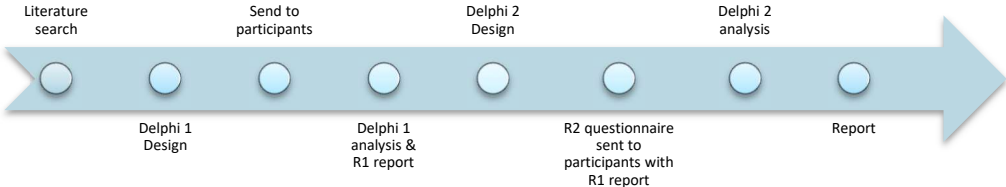


Figure 3-5 Methodology

#### 3.4.1 Design of the Delphi Questionnaire

The type of Delphi design is e-Delphi. e-Delphi aims vary depending on the nature of the research; its expert selection depends of the aims of the research, its number of rounds are varied and its administration happens via email or online web survey (Hasson & Keeney 2011). This research refers to the study as Delphi instead of e-Delphi.

This research is also a modified Delphi study, the first questionnaire was structured from the literature. In the classic Delphi study, however, qualitative data is collected from the first round and used to develop items for the questionnaires (Stewart et al. 2017).

##### 3.4.1.1 Delphi Questionnaire Structure

The first-round questionnaire comprised 52 questions. According to Keeney, McKenna and

Hasson (2011), there is an inverse relationship between length of questionnaire and response rate in the second round. The longer the questionnaire the less likely are experts to complete it, therefore the second round of this Delphi study was less than half of the first questionnaire. The second round contained 20 questions.

In Round One of the Delphi questionnaire, panellists were provided with pre-selected items drawn from the literature (including grey literature). The full questionnaire is available upon request from the Australian Health Services Research Institute (AHSRI). Table 8 shows how the questionnaire was organised:



<b>DELPHI QUESTIONNAIRE STRUCTURE</b>	
<ul style="list-style-type: none"> <li>• <b>Section I. Definition of Structural Change in Health Care (Asada et al. 2017)</b></li> </ul>	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8
<ul style="list-style-type: none"> <li>• <b>Section II. Domains of Structural Change</b></li> </ul>	
<ul style="list-style-type: none"> <li>○ <b>Domain 1. Characteristics of Structural Change (Domingo &amp; Tonella 2000)</b></li> </ul>	Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16
<ul style="list-style-type: none"> <li>○ <b>Domain 2. Environment/Context for Structural Change (Pollitt 2009)</b></li> </ul>	Q17, Q18, Q19, Q20
<ul style="list-style-type: none"> <li>○ <b>Domain 3. Stakeholders in Healthcare (Jolley et al. 2008)</b></li> </ul>	Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41
<ul style="list-style-type: none"> <li>○ <b>Domain 4. Outcomes of Structural Change (Coid &amp; Davies 2008; Lieberman &amp; Selker 2000; Martsof et al. 2015)</b></li> </ul>	Q42, Q43, Q44, Q45, Q46, Q47, Q48, Q49, Q50, Q51, Q52

Table 8 Round 1 Delphi Questionnaire Structure

This section has made linkages between structural change concepts and their corresponding

question numbers, the next section addresses the factors that came into play when developing the questionnaire for Round One of the Delphi study.

### 3.4.1.2 Factors influencing the Delphi Questionnaire Development

The conceptual framework is key for the design of the Delphi questionnaire used to gather expert opinion on structural change and its evaluation. Table 9 shows factors that influenced the development of the questionnaire with concepts found in the literature review.

STRUCTURAL CHANGE CONCEPTS	QUESTION FOCUS																					
<b>Definition of Structural Change</b>																						
Conceptualisation	Understanding of structural change in health care																					
Nature	Multidimensional (Rix et al. 2005)																					
Different to other industries/fields	Different to other industries/fields																					
<b>Activities of Structural Change</b>	Resource distribution and activities (Wight et al. 2015)																					
	Changes policy, systems and environment (Asada et al. 2017)																					
	Transforms core business																					
	Changes physical, social, political and economic environment in which health-related decisions take place (Lieberman et al. 2013)																					
<b>DOMAINS OF STRUCTURAL CHANGE</b>	<b>QUESTION FOCUS</b>																					
<b>1. Characteristics</b>																						
Complex	Structural change in health care is complex (Coid & Davies 2008)																					
Costly	Structural change is expensive (Dwyer 2004, Domingo & Tonella 2000)																					
Outcomes	Unpredictable outcomes (Domingo & Tonella 2000)																					
Funding & remuneration	Modifications in GP payments/remuneration (Donato & Segal 2010)																					
Introduction relative to other changes	Structural changes rarely happen in a vacuum (Pollitt, 2009)																					
<b>2. Environment</b>																						
Political	Political climate drives structural change (Rix, Owen & Eagar 2005).																					
Economic	Australian economy drive structural change (Donato & Segal 2010).																					
Culture	Culture in primary care is conducive to successful structural change (Grol, Wensing & Eccles 2013; Wynen, Verhoest and Kleizen 2016)																					
<b>3. Stakeholders</b>																						
A wide array of stakeholders with competing interests is involved in structural change (Jolley et al 2008).																						
	<table border="0"> <tr> <td style="text-align: center; vertical-align: middle;">Initiator Implementer Influencer</td> <td style="font-size: 2em; vertical-align: middle;">}</td> <td>Government</td> </tr> <tr> <td></td> <td></td> <td>Medical Colleges</td> </tr> <tr> <td></td> <td></td> <td>General Practitioners</td> </tr> <tr> <td></td> <td></td> <td>Nurses</td> </tr> <tr> <td></td> <td></td> <td>Allied health</td> </tr> <tr> <td></td> <td></td> <td>Practice staff</td> </tr> <tr> <td></td> <td></td> <td>Consumers</td> </tr> </table>	Initiator Implementer Influencer	}	Government			Medical Colleges			General Practitioners			Nurses			Allied health			Practice staff			Consumers
Initiator Implementer Influencer	}	Government																				
		Medical Colleges																				
		General Practitioners																				
		Nurses																				
		Allied health																				
		Practice staff																				
		Consumers																				
<b>4. Outcomes</b>																						
In the context of healthcare, the outcomes of structural change are diverse (Lieberman et al. 2013, Coid & Davies 2008, Martsof et al. 2015, Dwyer 2004, Pollitt 2009, Asada et al. 2017).	<ul style="list-style-type: none"> <li>Changes to business systems in health care</li> <li>Direct influence on patient care.</li> <li>Effects on patient outcomes.</li> <li>Impacts staff retention.</li> <li>Staff satisfaction.</li> <li>Impacts on the recurrent cost of health care nation-wide.</li> <li>Changes in remuneration and funding.</li> <li>Repercussions on models of care.</li> <li>Influence on care coordination.</li> <li>Impacts on information management and technology.</li> <li>Impacts that ripple into the wider community.</li> </ul>																					

Table 9 Factors influencing Questionnaire Development

This exercise was a launching pad for discussion with academics and experts at AHSRI about the refinement of the wording of each question in Round One of the Delphi study. For example, question one read ‘the concept of structural change is well understood in health care’. This question was listed as conceptualisation and its question focus was ‘understanding of structural change in health care’ as seen in Table 9 above.

The Round Two questionnaire was developed based on Round One responses as explained in Chapter 5.

### **3.4.1.3 Sample Characteristics**

The group of experts ranged from those whose work has been profusely publicised in high calibre journals to those who execute policy and have been publicly involved when structural change has taken place. These experts are normally difficult to reach and pressed for time. The sample contained a minority in number of international experts from UK and Canada.

### **3.4.1.4 Sample Recruitment**

Potential participants were invited via email. These details are publicly available in the web. Out of twenty-one invitations sent, seventeen experts agreed to participate. Section 3.3.9 of this chapter elaborates on the sample in more detail.

### **3.4.1.5 Data Access, Confidentiality and Privacy**

Potential participants were sent a Participant Information Sheet and consent was integrated as they proceeded to complete the questionnaire. Participants were ensured that their participation would remain anonymous and their views could be used only as long as their identity was protected.

### 3.4.1.6 Data Collection

Participants were sent a unique link to REDCap®; a secure online data collection tool (Harris et al. 2009). Both rounds of the questionnaire were designed on paper through consultation with two academics and entered into REDCap® with the support of AHSRI's IT department and a training session on REDCap's® data management. Responses to the Delphi study were collected using REDCap. Figure 3-6 below shows this process:

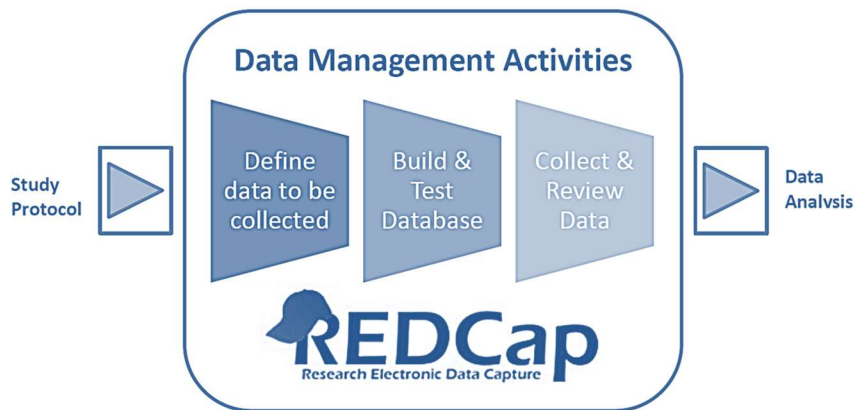


Figure 3-6 Data management in REDCap®, University of Chicago 2015

Once the questionnaire was returned by the experts, data was locked down so no amendments could be made to any questionnaire by researchers. If participants wanted to revisit their submitted answers, their link was no longer active and they received a message informing them that their answers had been submitted and their unique link had expired. This ensured the integrity of the data.

### 3.4.1.7 Data Limitations

One of the risks with Delphi data is specious consensus where panellists develop a tendency to conform to the middle judgement (Cole et al. 2013). This research addressed this risk by adding a 'comments' box and encouraged respondents to justify their answers.

### **3.4.1.8 Data Advantages**

Although modest, data collected during this research is the first expert concurrence on structural change in primary care, an area where no data of this kind previously existed. Data collected through Delphi not only allows the researcher to explore topics of minimal agreement but also allows integration of viewpoints, opinions and insights from experts in several disciplines (Cole et al. 2013).

In this case, experts from policy, academia, general practice and top executives in health care participated. Free text allowed for experts to expand on their opinions about structural change in primary care.

This preliminary exploration of the topic serves as a springboard for a broader discussion about the evaluation of structural change in primary care and why it needs to be evaluated. Delphi findings of this sort enable structural change to be looked at from different angles relevant to its evaluation e.g. patient, provider, system and cost of health care.

### **3.4.2 Testing of the Delphi Questionnaire**

The questionnaire was tested using a small advisory panel involving experts in health services research and evaluation. The testing included filling the questionnaire. The test served to find flaws in the way questions were asked and assisted with finding potentials for misinterpretation. Additionally, the advisory panel made recommendations on the participant information and consent forms.

### **3.4.3 Data Analysis**

Responses were collected with REDCap® via a unique link sent to the expert panel. REDCap® produced a SPSS format data export which was used for calculations and analysis. A 7-point

Likert response format was used as fewer scale points can have reduced reliability coefficients (Gelin et al. 2003). However, Jacoby and Matell (1971) argue that the number of scale points in Likert-type items is independent of its reliability and validity. Data analysis of Likert scale items is related to the nature of the data; be it interval or ordinal.

Furthermore, Allen and Seaman (2007) warn about reaching misleading conclusions about agreement when analysing Likert-type data using means and recommend that the researcher should consider the ordinal nature of the data for analysis.

According to Keeney, McKenna and Hasson (2011), there is wide variation in statistical tests researchers use for Delphi results analysis and how they provide feedback to participants. Common statistical methods include reporting the mean, standard deviation, percentages, median, interquartile range and median. Findings in this research were reported using the mean and standard deviation.

#### **3.4.3.1 Feedback to Participants**

Descriptive statistics using SPSS were calculated (including mean, standard deviation and variance) for this research. Individual and group feedback was provided to participants using the mean and standard deviation for each item.

This research's data is ordinal as the intervals between scale items cannot be measured given the abstraction of structural change items investigated. Therefore, consensus was identified according to consensus categories. Section 4.1.1 in Chapter 4 addresses this topic in more detail.

#### **3.4.3.2 The Likert Scale Debate**

Likert scales were developed in 1932 by Rensis Likert with the purpose of measuring attitudes

and to rate the degree by which respondents agreed or disagreed with a statement. Unlike interval data, ordinal data from a Likert scale distances between responses cannot be measured (Pornel 2009).

That distances between responses cannot be measured has generated over 50 years of debate in which there are two bands arguing against each other; one side defending that the distance between responses in a Likert scale can be measured and the opposition stating it cannot be measured. Carifio and Perla (2007) argue that researchers should not carelessly use the term 'scale' when in reality it is a 'response format'.

Likewise, the authors warn about the use of the term 'interval' which researchers use without discrimination between interval scale, data interval and confidence interval.

This study used a seven-point Likert scale as the human mind can distinguish amongst seven different categories of absolute judgement and a span of immediate memory for seven items and a span of attention of six objects at a time. A higher number of response categories are not recommended as very little additional information can be obtained (Colman, Norris & Preston 1997; Miller 1956; Preston & Colman 2000).

Data collected from the Delphi study includes ordinal data in a seven-point Likert scale ranging from 7 at 'entirely agree' and 1 'entirely disagree'. Round One used a seven-point Likert scale throughout the whole survey and the nature of the data collected was ordinal. Round Two introduced an additional three item Likert scale for the second part of the questionnaire. The difference in scales was homogenized for analysis by hand by collapsing them into three point by agreement, neutral and disagreement.

REDCap® allows exportation of all data per instrument in excel format. The mean and standard deviation were calculated using SPSS. The questionnaire in Round Two used a seven-point Likert scale. However, the last part of the questionnaire used a three-point frequency response Likert scale. The three-point scale allowed the researchers to introduce a narrow focus on evaluation of each of the items.

### **3.4.3.3 Analysis of Likert Scale Type Data**

Likert methodology is frequently used in allied health, medicine and medical education. There has been a fifty-year debate about the use of Likert scales. No single view of Likert scales exists. Rather, researchers have been divided into two groups based on perception of the scales as either ordinal or interval. These groups are referred to as ordinalists and intervalists (Carifio & Perla 2008). According to Carifio & Perla, the first group is empirical in their claims and the second is very well supported. The data in this research is ordinal as the interval within the Likert scale cannot be determined e.g. the distance between ‘strongly agree’ and ‘mostly agree’ cannot be measured. —

The Delphi study produced two types of data, quantitative 7-point Likert type data and qualitative, harvested from ‘free text’ comments sections. Figure 3-7 below shows how data was processed as recommended in the literature.



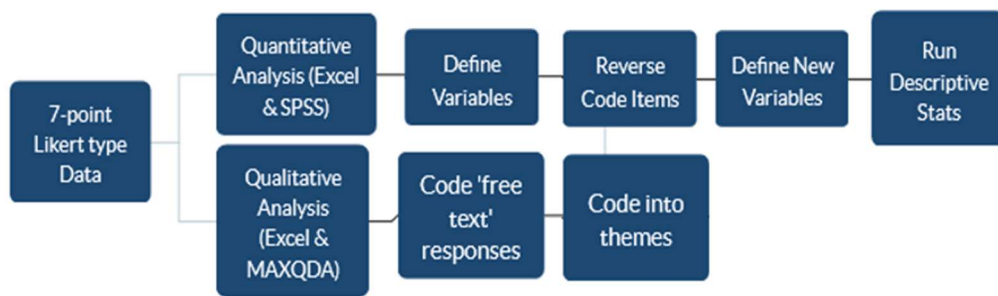


Figure 3-7 How Delphi Study Data was managed

There is no consensus on what method is best for the analysis of Delphi data. Cole, Donohoe and Stollefson (2013) suggest that a determinant for consensus was a small variance and Shah and Kalaian (2009) recommended that coefficient of variation is the best parametric statistical method for obtaining reliability in a Delphi study with a sample size smaller than 50. Dr. Geoff Norman, leader in medical education research methodology, demonstrated that parametric tests can be used with ordinal data from Likert scales and these are more robust than non-parametric tests (Sullivan & Artino Jr 2013). Analysis of Likert scales data with parametric tests are recommended, particularly when concepts investigated such as patient satisfaction, trainee motivation or doctor's confidence are less concrete; as such a single item in the questionnaire is incapable of capturing the concept being investigated. Tests like Cronbach alpha or the Kappa test or factor analysis techniques give evidence of the inter-correlation of the components in the scale and tell if grouped items are measuring the variable (Sullivan & Artino Jr 2013). Section 4.5.4 in Chapter 4 includes Cronbach alpha for Round One.

In the end, Sullivan and Artino (2013) caution researchers to analyse their data well and assess its suitability for parametric testing as with some, a mean will 'mean' nothing much.

However, Carifio and Perla (2008) debate that Likert scale data is interval not ordinal in nature

and therefore it is best analysed using parametric tests. The authors warn researchers about analysing single Likert items and instead prescribe the summarisation of ratings from Likert scales using the mean, standard deviation and analysis of variance. And from there, the Pearson correlation coefficients should be calculated and used for analyses such as multiple regression, factor analysis and meta-analysis. According to Carifio and Perla (2008), this will result in powerful and nuanced analysis of data and the topic being investigated. Although the mean, SD and variance were calculated with SPSS, this research interpreted findings as ordinal data and analysed it as such.

### 3.4.3.3.1 REDCap®: Preliminary Data Cleansing

Data was cleansed in REDCap® (Harris et al. 2009) prior to analysis. REDCap® in its calculations, was considering three empty questionnaires and one partially empty, therefore, these had to be removed.

REDCap® counted 21 results (experts who were originally invited, see figure 3-8) including three participants who did not answer the questionnaire and one participant who only answered

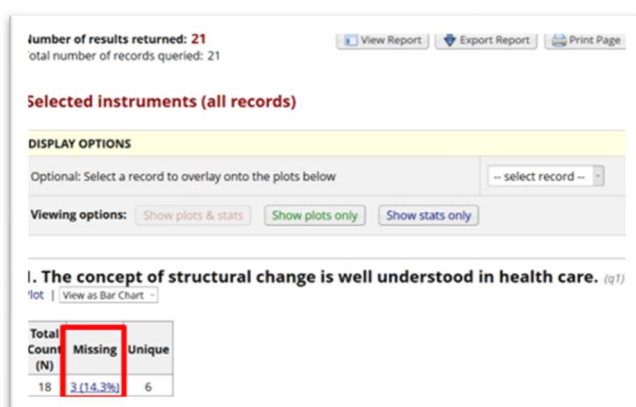


Figure 3-8 Missing data: incomplete response in REDCap®

10% of the questionnaire. These records were deleted from REDCap® as part of the data cleansing process otherwise they would have appeared as ‘missing’ data’ affecting calculations

(as found when a comparison between SPSS and REDCap® analysis was done). Figure 3-9

Data Cleansing in REDCap® shows three records missing which were ‘empty’ questionnaires. REDCap® considered one partially answered questionnaire that had to be removed along with the other three. Records removed were participants 15, 21 (partial), 27 and 30.

record_id	Register	Round 1	Round 2
14	✓	✓	✓
15	✓	○	○
16	✓	✓	✓
17	✓	✓	✓
18	✓	✓	✓
19	✓	✓	✓
20	✓	✓	✓
21	✓	○	○
22	✓	✓	✓
23	✓	✓	✓
24	✓	✓	✓
25	✓	✓	✓
26	✓	✓	✓
27	✓	○	○
28	✓	✓	✓
29	✓	✓	✓
30	✓	○	○
31	✓	✓	✓
32	✓	✓	✓
33	✓	✓	✓
34	✓	✓	✓

After removal

record_id	Register	Round 1	Round 2
14	✓	✓	✓
16	✓	✓	✓
17	✓	✓	✓
18	✓	✓	✓
19	✓	✓	✓
20	✓	✓	✓
22	✓	✓	✓
23	✓	✓	✓
24	✓	✓	✓
25	✓	✓	✓
26	✓	✓	✓
28	✓	✓	✓
29	✓	✓	✓
31	✓	✓	✓
32	✓	✓	✓
33	✓	✓	✓
34	✓	✓	✓

Figure 3-9 Data Cleansing in REDCap®

Figure 3-10 shows the process of deleting these records which had no data in them:

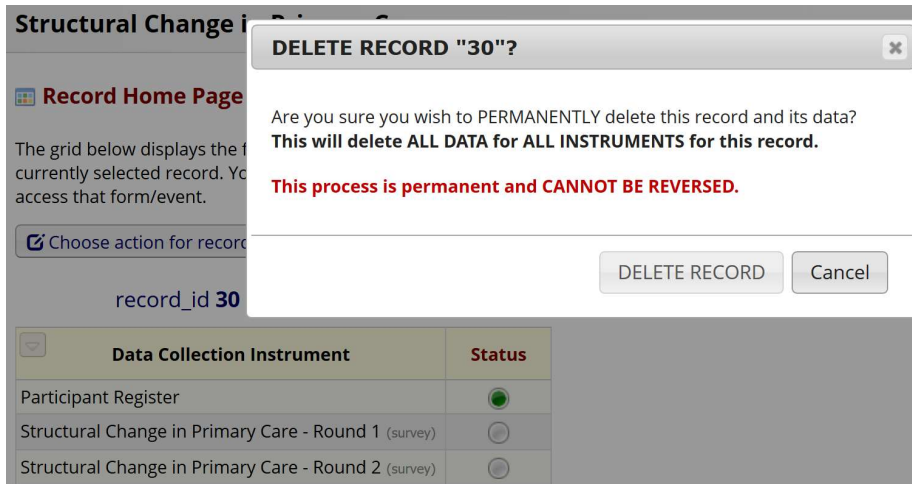


Figure 3-10 REDCap® empty record deletion

### 3.4.3.3.2 Reverse Score Approach

Item 4 in round 1 was posted to participants with a negative going against the direction of all the other questions in the rest of the questionnaire. Reverse item scoring adapts the data set to face in the direction on which the other data is heading (Dragow, Chernyshenko & Stark 2010).

The scale ranged from entirely agree at 7 to entirely disagree at 1. High scores indicate high agreement with the statement about structural change. As there was one item negatively constructed, I needed to reverse the score as shown in Table 10:

Before	Reversed for Analysis
<b>1 Entirely disagree</b>	7 Entirely agree
<b>2 Mostly disagree</b>	6 Mostly agree
<b>3 Somewhat disagree</b>	5 Somewhat agree
<b>4 Neither agree nor disagree</b>	4 Neither agree nor disagree
<b>5 Somewhat agree</b>	3 Somewhat disagree
<b>6 Mostly agree</b>	2 Mostly disagree
<b>7 Entirely agree</b>	1 Entirely disagree

Table 10 Reverse Scoring Approach

This approach was applied to the following question shown in Table 11:

Original Item	Reverse Scoring
R1 Item 4. Structural change in primary care is no different to structural change in other industries.	If answer is 1 (entirely disagree) it means that structural change is different in other industries which has a score of 7 (entirely agree)

Table 11 Reverse Scoring R1\_Q4

Therefore, all the answers for question 4 in the first round were reverse scored before running SPSS analysis.

As we established, in this research, Likert-type data is ordinal, one score is higher than another and, furthermore, the distance between scores cannot be determined.

### 3.4.3.3.3 Likert Type Data into SPSS

REDCap® provides researchers several options to extract Likert-scale type collected data as seen in Figure 3-11. Extracts in SPSS format and csv format were used for the development of this research.

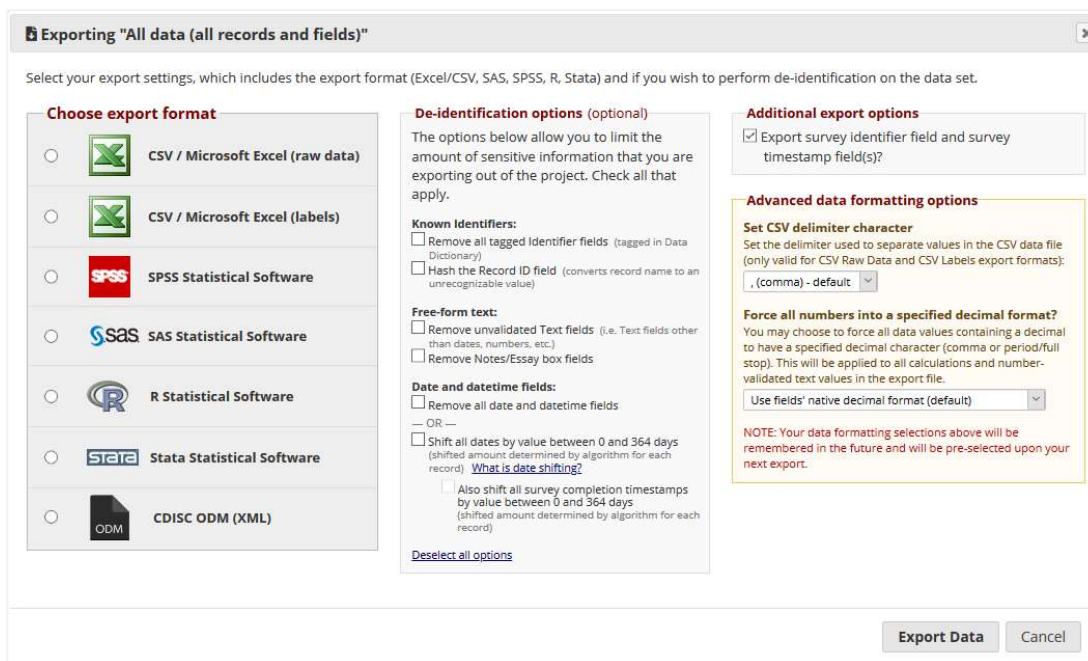


Figure 3-11 Data Extract options in REDCap

Figure 3-12 shows round 1 data in variable view once imported into SPSS:

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	ID	Numeric	8	0	REDCap ID	None	None	8	Right	Unknown
2	Q1	Numeric	8	0	The concept of structural change is well understood in health care.	{1, Entirely ...	None	8	Right	Unknown
3	Q2	Numeric	8	0	I have a good understanding of structural change in health care.	{1, Entirely ...	None	8	Right	Unknown
4	Q3	Numeric	8	0	Structural change is always multi-dimensional.	{1, Entirely ...	None	8	Right	Unknown
5	Q4	Numeric	8	0	Structural change in primary care is different to structural change in other industries.	{1, Entirely ...	None	8	Right	Unknown
6	Q5	Numeric	8	0	Structural change involves changes in resource distribution and activities.	{1, Entirely ...	None	8	Right	Unknown
7	Q6	Numeric	8	0	Structural change involves policy, systems and environmental change.	{1, Entirely ...	None	8	Right	Unknown
8	Q7	Numeric	8	0	Structural change transforms the core business of the organisation.	{1, Entirely ...	None	8	Right	Unknown
9	Q8	Numeric	8	0	Structural change modifies the physical, social, political and economic environment ...	{1, Entirely ...	None	8	Right	Unknown
10	Q9	Numeric	8	0	Structural change in healthcare is complex.	{1, Entirely ...	None	8	Right	Unknown
11	Q10	Numeric	8	0	The implementation of structural change is expensive.	{1, Entirely ...	None	8	Right	Unknown
12	Q11	Numeric	8	0	The outcomes of structural change are always unpredictable.	{1, Entirely ...	None	8	Right	Unknown
13	Q12	Numeric	8	0	Structural change in healthcare is always irreversible.	{1, Entirely ...	None	8	Right	Unknown
14	Q13	Numeric	8	0	Structural change in health care includes modifications in remuneration.	{1, Entirely ...	None	8	Right	Unknown
15	Q14	Numeric	8	0	Structural change in primary care settings can be introduced in isolation to other ch...	{1, Entirely ...	None	8	Right	Unknown
16	Q15	Numeric	8	0	Structural change in General Practice necessarily involves modifications to GP pay...	{1, Entirely ...	None	8	Right	Unknown
17	Q16	Numeric	8	0	Structural change in General Practice can be introduced in isolation to other change...	{1, Entirely ...	None	8	Right	Unknown
18	Q17	Numeric	8	0	The political climate drives structural change.	{1, Entirely ...	None	8	Right	Unknown
19	Q18	Numeric	8	0	Changes in the Australian economy drive structural change.	{1, Entirely ...	None	8	Right	Unknown
20	Q19	Numeric	8	0	The culture in primary care is conducive to successful structural change.	{1, Entirely ...	None	8	Right	Unknown
21	Q20	Numeric	8	0	The culture specifically in general practice is conducive to successful structural cha...	{1, Entirely ...	None	8	Right	Unknown
22	Q21	Numeric	8	0	Gov role in initiating structural change.	{1, Entirely ...	None	8	Right	Unknown
23	Q22	Numeric	8	0	Gov role in implementing structural change.	{1, Entirely ...	None	8	Right	Unknown

Figure 3-12 Round 1 responses into SPSS

Comments from the expert panel were collected via a free text box. These data were analysed using content analysis as explained in the next section.

### 3.4.3.4 Qualitative Data Coding Process

Data collected from the free text fields in the two rounds of the Delphi questionnaire were coded and processed as depicted in Figure 3-13. Data labels related to the research questions in this research were created and kept visible as the coding process was in progress.

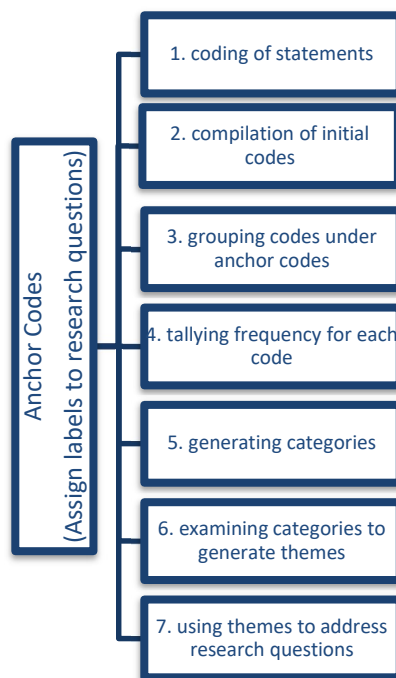


Figure 3-13 Qualitative data coding process adapted from Saldaña 2013

Relevant statements were coded using a number of coding techniques as recommended by Saldaña (2013) who suggests descriptive coding (assigning topics to aspects of the data), theming (used statements to describe meanings of the data segment), evaluation coding (assigning judgment to a segment of the data) and in vivo coding (assigning a code using a word from the data segment).

#### **3.4.4 Determining Consensus**

Determining the rules for consensus is one of the challenges of Delphi studies and a frequently adopted solution is to empirically compare variance in the participant's responses over the rounds. Reduction in variance typically indicates consensus (Cole et al. 2013).

Although variance calculations were performed for Round One, because of the high calibre of the panel and their time constraints in participating the second round of the Delphi study took a focus on evaluation and rather sought confirmation of the definition of structural change and explored further a few issues where the panel seemed to have scattered opinions along the Likert scale.

Consensus has been studied by relaxing the definition of agreement and disagreement and eliminating outliers which increases the likelihood of agreement (Scott & Black 1991). Thus, consensus depends on the nature of the topic being examined and data collected.

Type of Responses	Definition	No. of questions	%
<b>Clear Consensus</b>	Everyone agreed or neutral, no one disagrees	17/52	32.70%
<b>General Consensus</b>	Everyone responded in the same direction except for two people who responded in the opposite direction and they are not at the extreme end of the spectrum	13/52	25%
<b>Mixed Views</b>	If even if one person is at the extreme of the spectrum	22/52	42.30%

Table 12 Consensus Stratification Rule

As a modified Delphi, this study sought to study convergence of opinions in an unconventional way. A consensus stratification rule that included all ratings (full panel responses without eliminating outliers) was applied, and included clear consensus, general consensus and mixed views as seen in

Table 12 Consensus Stratification *Rule* above.

### 3.4.5 Reliability and Validity

Jacoby and Matell (1971) argue that reliability and validity are not dependent on the number of scale points in Likert-type items. To assess the effectiveness and appropriateness of a Delphi study, trustworthiness is more fitting than reliability and validity (Hasson & Keeney 2011).

Trustworthiness is achieved by credibility (feedback to panellists), dependability (a representative sample of experts), confirmability (detailed description of data collection and analysis) and transferability (applicability of findings) (Hasson & Keeney 2011).

Furthermore, an audit trail of important theoretical and methodological decisions upholds trustworthiness in a Delphi study (Skulmoski, Hartman & Krahn 2007). This present research has a decision tree (appendix) and a codes-to-themes matrix (appendix) as part of its audit trail.



### **3.5 Conclusion**

The payoff of a Delphi study is the ability to gather expert opinion on a topic with little or no prior research. It is cost-effective and in this current research it enabled reaching high calibre experts from Australia, Canada and UK who would have not been able to participate otherwise.

Delphi studies do not come without limitations, one of which was that time constraints meant that only two rounds of the study were possible. Follow up ensured 100 % response rate in Round Two; however, participation proved to be difficult for some experts who kindly made an effort to complete Round Two so the study would not be compromised.

In hindsight, such a complex subject as this one would require more exploration, perhaps deepening into some of the issues that experts raised in the comments section of both rounds and to help clarify and strengthen findings. Nonetheless, as the first of this kind, this research opens possibilities for further investigation of structural change in primary care. The following chapter presents the findings of Round One of the Delphi study.

## **Chapter 4 Findings of Round One**

Chapter 3 described the methodology used for this research. This chapter presents the results of the Delphi study in Round One.

### **4.1 The Delphi Study - Round One**

The first-round questionnaire yielded an 81% response rate with 17 out of 21 participants completing the questionnaire. Four respondents were away.

Important findings in the first round include:

- The definition of structural change in primary care is not well understood in health care.
- The expert panel reached consensus on their good understanding of structural change in health care which confirmed participants had the adequate skills and knowledge to participate in the Delphi study.
- It was found that the role in structural change of two stakeholder groups, consumers and allied health, was ambiguous in this first round of the Delphi study.
- Experts identified outcomes of structural change

#### **4.1.1 Consensus Categories**

Consensus was identified according to Table 13 below:

<i>Type of Responses</i>	Definition	No. of questions	%
<b><i>Clear Consensus</i></b>	Everyone agreed or neutral, no one disagrees	17	32.70%
<b><i>General Consensus</i></b>	Everyone responded in the same direction except for two people who responded in the opposite direction and they were not at the extreme end of the spectrum	13	25%
<b><i>Mixed Views</i></b>	Even if one person is at the extreme of the spectrum	22	42.30%
		52	100%

*Table 13 Consensus Categories*

Of the fifty-two questions, 58% showed clear and general consensus and 42% of the questions reflected mixed views. Mixed views questions were investigated in Round Two of the Delphi study as relevant.

Round One was designed on a seven-point Likert scale with the aim of capturing participants' thoughts on the definition of structural change and explored domains for the evaluation of structural change including characteristics, environment/context, stakeholders and outcomes relevant to the study of structural change.

The Delphi questionnaire in Round One was structured into two sections; section one investigated the definition of structural change and section two investigated four domains of structural change: characteristics, environment or context, stakeholders and outcomes. A summary of the most important findings in Round One of the Delphi study follows.

## **4.2 Section I. Definition of Structural Change in Health Care**

The most important findings in section I were:

- 100% of experts agreed that structural change is complex. Complexity is a characteristic of structural change that adds to the challenge of the definition as well as its evaluation components.

- 71% of experts agreed that structural change is expensive. The very structure of government may add to this characteristic as one of the experts stated: “...the Commonwealth of Australia Constitution is one of the fundamental influences of the way health care services are structured, funded and delivered in Australia. Section 51 prohibits the Commonwealth from any form of civil conscription in terms of medical and dental services (where both legal and practical compulsion may offend the caveat). Structural changes for health reform by the Commonwealth have always had this limitation” (expert 28 - policy).
- 53% of experts considered modifications to GP payments a necessity for structural change in General Practice. An expert stated, “structural change can be about ... giving care more efficiently and throwing money at reform is a carrot but does not necessarily change behaviour” (expert 17 - practitioner). With the introduction of each structural change, GPs might be expecting remuneration changes that need to be carefully considered prior to the change being implemented in order to foster behaviour change. This finding supports the significance of context for change in structural change.

#### 4.2.1 The concept of Structural Change in Health Care

Fifty three percent of experts maintained that the concept of structural change is not well understood in health care with a further 18% ‘somewhat’ agreeing with the statement. Only two experts, one academic and one practitioner, agreed that the concept of structural change is well understood in health care.

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
1. The concept of structural change is well understood in health care.	6%	47%	18%	6%	12%	12%	0

Figure 4-1 Question 1 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Eighty two percent of experts’ responses were located on the agree side of the spectrum stating they have a good understanding of the concept of structural change in health care. This confirmed the suitability of the panel to investigate this topic:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
2. I have a good understanding of structural change in health care.	0	6%	6%	6%	12%	41%	29%

Figure 4-2 Question 2 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

There was also agreement on the concept of structural change being multidimensional:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
3. Structural change is always multi-dimensional.	0	0	0	0	6%	35%	59%

Figure 4-3 Question 3 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

When compared to other industries, 60% of experts' opinion tilted towards the disagree side of the spectrum. Experts agreed that structural change is different in primary care when compared to other industries:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
4. Structural change in primary care is no different to structural change in other industries.	18%	29%	29%	0	12%	12%	0

Figure 4-4 Question 4 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Most experts agreed that the notion of structural change involved changes in resource distribution and activities. One academic neither agreed nor disagreed with the statement:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
5. Structural change involves changes in resource distribution and activities.	0	0	0	6%	12%	41%	41%

Figure 4-5 Question 5 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Eighty two percent of experts agreed that the notion of structural change involves changes in policy, systems and the environment:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
6. Structural change involves policy, systems and environmental change.	0	0	6%	6%	6%	29%	53%

Figure 4-6 Question 6 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Experts’ answers were spread throughout the scale in relation to structural change transforming the core business of the organisation and there were questions regarding ‘the organisation’ referring to the health system or a facility. Perhaps this question could have been phrased better:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
7. Structural change transforms the core business of the organisation.	6%	6%	0	18%	24%	29%	18%

Figure 4-7 Question 7 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

In contrast, experts’ answers on the effects of structural change in modifying the physical, social, political and economic environments where health-related decision-making takes place were located on the ‘agree’ side of the spectrum. One academic disagreed with this statement. The same academic, in an earlier question, disagreed with structural change relating to changes in resource distribution and activities (question 5).

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
8. Structural change modifies the physical, social, political and economic environment in which health-related decisions take place.	0	6%	0	0	35%	47%	12%

Figure 4-8 Question 8 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

In summary, section one ‘the concept of structural change’ served to understand that structural change is multi-dimensional, a concept not well understood in health care. We also found that structural change can modify resource distribution, policy, systems and the environment.

It could not be ascertained whether the core business of an organisation can be transformed by structural change. However, physical, social, political and economic environments in which decision-making takes place are seen to be altered by structural change.

Section II explores the characteristics of structural change which could explain the extent by

which structural change is able to bring about changes found in section I.

### 4.3 Section II. Domains of Structural Change

This section is structured into four domains: Domain 1, characteristics and attempts to understand its nature, domain 2, environment/context that seeks to understand the context of structural change, domain 3, stakeholders that pursues clarity in terms of how major categories of stakeholders influence structural change, and domain 4, outcomes, which aims to ascertain the effects and impacts of structural change on some of the outcome items found in the literature.

#### 4.3.1 Domain 1. Characteristics of Structural Change

All of the experts agreed that structural change in the health care sector is complex. This finding goes hand in hand with the finding above of multi-dimensionality. Whether structural change is complex because of its multidimensionality or the other way around, it is a topic for further research.

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
9. Structural change in healthcare is complex.	0	0	0	0	0	18%	82%

Figure 4-9 Question 9 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

There was also consensus on the implementation of structural change being expensive. The high price tag of structural change could be related to its complexity and multidimensionality; however, this was not explored in this research.

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
10. The implementation of structural change is expensive.	0	0	6%	12%	29%	41%	12%

Figure 4-10 Question 10 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

However, the panel ‘sat on the fence’ when it came to the outcomes of structural change being

always unpredictable; 29% of respondents could not agree or disagree and 24% disagreed with the statement. The rest of the data was scattered along the scale with no one daring to entirely disagree with the statement:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
11. The outcomes of structural change are always unpredictable.	0	24%	12%	29%	6%	18%	12%

Figure 4-11 Question 11 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

The following question on the reversibility of structural change resulted in a tie between ‘mostly disagree’ and ‘somewhat disagree’; however, most votes were in the disagree spectrum and the panel thought structural change in health care can be reversed after it had been initiated.

However, a few questions ahead, there was a shift when it comes to General Practice:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
12. Structural change in healthcare is always irreversible.	18%	24%	24%	18%	18%	0	0

Figure 4-12 Question 12 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

The majority of responses in this item were located on the agree spectrum of the Likert scale not only complementing the notion that structural change is expensive to implement but also drawing attention to remuneration being modified with every structural change and carrying with it ripple effects on the rest of the health system. Only one academic ‘entirely’ disagreed with this statement:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
13. Structural change in health care includes modifications in remuneration.	6%	0	0	24%	24%	47%	0

Figure 4-13 Question 13 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Although the majority of responses fell on ‘somewhat agree’, there was no clear consensus about



introducing structural change in isolation to other changes in health care. This question was explored in Round Two of the Delphi study:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
14. Structural change in primary care settings can be introduced in isolation to other changes in health care.	18%	12%	12%	18%	41%	0	0

Figure 4-14 Question 14 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

When it came to payments to General Practitioners (GPs), it was clear that modifications to GP payments are an essential element of structural change in primary care:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
15. Structural change in General Practice necessarily involves modifications to GP payments.	6%	12%	0	12%	12%	47%	12%

Figure 4-15 Question 15 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

For the following item, the majority of responses were located on the ‘disagree’ spectrum. There was an interesting shift from item 14 as the item ‘zoomed’ into General Practice. This time, respondents who previously were unsure, changed their response as the item referred to General Practice. Two academic experts responded, ‘somewhat disagree’ and one policy expert responded, ‘somewhat agree’. The term General Practice somehow triggered a different response in them:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
16. Structural change in General Practice can be introduced in isolation to other changes in health care.	18%	18%	41%	0	18%	6%	0

Figure 4-16 Question 16 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

In summary, there was clear consensus on the complexity and the high price that structural change entails not only for implementation but also in terms of resources required for General

Practitioners payments. From the comments, it may seem to be an underlying expectation is these payments would benefit GPs rather than disadvantage their practice.

At first, there was no consensus about the ability to introduce changes in isolation in health care in general; however, an important nuance was the shift observed as some of the participants changed their vote when they thought about structural change in General Practice instead of in health care in general.

The following section investigates the context of structural change as found in the Delphi study.

**4.3.2 Domain 2. Environment/Context for Structural Change in Healthcare**

This section referred to the context of structural change in terms of the political, economic and cultural context in which structural change was to take place.

Of experts’ votes, 95% were located on the ‘agree’ side of the scale assenting that the political climate is a driver for structural change. Only one executive ‘somewhat’ disagreed with the statement:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
17. The political climate drives structural change.	0	0	6%	0	24%	47%	24%

Figure 4-17 Question 17 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Of experts, 83% agreed that structural change is driven by the Australian economy. Whether or not this is always the case is a subject for further research. Only one practitioner ‘mostly’ disagreed with the Australian economy as a driver for structural change.

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
18.Changes in the Australian economy drive structural change.	0	6%	6%	6%	59%	24%	0

Figure 4-18 Question 18 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Seventy seven percent of responses were located on the ‘disagree’ side of the scale when asked if the culture in primary care was conducive to successful structural change. One practitioner and one academic thought otherwise:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
19.The culture in primary care is conducive to successful structural change.	24%	41%	12%	12%	12%	0	0

Figure 4-19 Question 19 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Of experts’ responses, 64% disagreed that the culture in general practice is conducive to successful structural change. Compared to the previous question, one academic changed their answer from ‘somewhat’ disagree to ‘mostly’ disagree. One policy expert changed their answer from ‘mostly’ disagree to ‘entirely’ disagree and an expert academic changed their answer from ‘mostly’ disagree to ‘somewhat’ disagree. The same practitioner and academic who thought otherwise in the previous question maintained their views here.

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
20.The culture specifically in general practice is conducive to successful structural change.	29%	35%	12%	12%	12%	0	0

Figure 4-20 Question 20 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

• 59% of experts agreed that the political climate drives structural change. The political environment is highly relevant in structural change either for its success or detriment and this may not be the case with regular programs and projects. Expert 14 states “(structural change) needs a shared vision supported by clinical and political leadership”. Expert 20 added “effective structural change requires alignment of good policy with strong political support and intent. Change is often complicated by political compromise that inevitably make the health system more complicated”. Expert 17 believes that “politically and sadly, change and health reform is often tied to election cycles for quick announcements and quick glory. This can set planned changes for failure”.

- 53% of experts support the statement that changes in the Australian economy drive structural change. The economics literature has researched structural change amply (Connolly & Lewis 2010; Lowe 2012; Domingo & Tonella 2000; Matsuyama 2008); however, experts did not discuss it further in this Delphi study.
- 59% of experts believe the culture in General Practice is not conducive to the success of structural change.

Part of this issue could be attributed to role playing as expert 33 states *“for me the critical concern is to preclude fragmentation of the role of the GP, particularly for example in respect of continuity of care, by allowing other health professionals to take over traditional GP roles and work independently of a team. Nurse practitioners are wonderful in GP practices and in community nursing roles (E.g. Silver Chain in WA) as part of a team. NPs in shopping malls are a mistake. Pharmacists are not trained as clinicians, let alone diagnosticians and are a travesty when claiming that role - 'clinical pharmacists'. Except in rare situations we need GP lead teams with respectful communication to get best outcomes for patients”*.

Expert 19 added *“allied health professions are infrequently asked to be part of structural change - GP sees itself as separate and so do AHP”* (round 2 comment). Expert 20 believes that *“there is a significant inertia in general practice and resistance to change. The medical peak bodies are partly responsible for this inertia”*. Expert 19 supports this claim by saying *“GPs in particular are highly resistant to structural change”*.

Expert 17 added *“the whole truth is that nothing works if you don't have the whole team on board”* and expert 28 recommends considering past history *“the requirements for structural change will also depend on the services, infrastructure, philosophies and culture that have evolved over decades”*. In round 2, expert 17 introduces the notion that perhaps rolling out initiatives without clear guidelines worsens the culture issue: *“RACGP have put out a Vision paper with a patient centred care model but no discussion of change management to get to that new model of care. Not really wanting to single them out but this is a typical example of suggested change but the 'HOW' of implementation”*

In summary, the majority of the expert panel agreed that political climate and the Australian economy are drivers of structural change in health care. The experts believe that the culture in primary care, and health care in general, is not conducive to successful structural change.

Context in structural change, is therefore of relevance. Details about context analysis and how context awareness can be embedded in the evaluation of structural change are discussed in Chapter 7. In-depth context analysis and awareness are outside the scope of this present research and are topics for future research.

### **4.3.3 Domain 3. Stakeholders in Healthcare**

In this domain there was disagreement about the role of consumers and allied health practitioners.

Experts thought that the role of the government in structural change was to initiate, implement and influence the success of structural change. This seems to point to structural change being considered, as stated by Dwyer (2004), a ‘top down’ change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
21. Initiating structural change.	0	0	0	12%	6%	47%	35%
22. Implementing structural change.	6%	0	0	6%	12%	47%	29%
23. Influencing the success of structural change.	0	0	0	0	12%	59%	29%

Figure 4-21 Questions 21, 22, 23 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Eighty-eight percent of experts considered the role of medical colleges as mainly influencing the success of structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
24. Initiating structural change.	0	6%	6%	18%	24%	41%	6%
25. Implementing structural change.	0	0	0	18%	35%	41%	6%
26. Influencing the success of structural change.	0	0	0	0	12%	41%	47%

Figure 4-22 Question 24, 25, 26 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

General Practitioners were considered to be implementers and initiators but mainly as influencers of structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
27. Initiating structural change.	0	6%	12%	12%	24%	41%	6%
28. Implementing structural change.	0	0	0	6%	18%	47%	29%
29. Influencing the success of structural change.	0	0	0	0	12%	35%	53%

Figure 4-23 Question 27, 28, 29 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

The role of nurses was rated by experts as mainly implementers of structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
30. Initiating structural change.	6%	6%	29%	6%	24%	29%	0
31. Implementing structural change.	0	6%	12%	6%	29%	35%	12%
32. Influencing the success of structural change.	0	0	6%	0	35%	29%	29%

Figure 4-24 Question 30, 31, 32 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

There was no clear consensus on the role of allied health in structural change; however, most of the ratings were on the ‘agree’ side of the spectrum for influencing structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
30. Initiating structural change.	6%	6%	29%	6%	24%	29%	0
31. Implementing structural change.	0	6%	12%	6%	29%	35%	12%
32. Influencing the success of structural change.	0	0	6%	0	35%	29%	29%

Figure 4-25 Question 30, 31, 32 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Practice staff were rated more as implementers and influencers than as initiators of structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
36. Initiating structural change.	12%	6%	6%	24%	35%	12%	6%
37. Implementing structural change.	0	0	0	12%	12%	47%	29%
38. Influencing the success of structural change.	0	0	12%	0	24%	24%	41%

Figure 4-26 Question 36, 37, 38 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

The expert panel did not reach a clear consensus on the consumer’s role in structural change; the results were distributed across the scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
39. Initiating structural change.	0	18%	6%	6%	24%	12%	35%
40. Implementing structural change.	6%	18%	29%	6%	24%	6%	12%
41. Influencing the success of structural change.	0	12%	0	12%	12%	29%	35%

Figure 4-27 Question 39, 40, 41 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Experts thought that the government is the stakeholder that initiates, implements and influences structural change. They then thought that medical colleges were influence agents of structural change. General Practitioners (GPs) were considered initiators and implementers of structural change but the most votes from experts were for GPs as influencers of structural change. Nurses were seen more as implementers and practice staff were regarded as implementers and influencers of structural change.

Except for two groups of stakeholders, namely allied health practitioners and consumers, responses indicated the role of stakeholders in structural change quite clearly. These were posted to participants in Round Two. The government was seen more as an initiator and less of an implementer of structural change. The medical colleges' role was seen as one of influencing structural change.

General practitioners were seen by respondents as implementers and influencers of the success of structural change but not initiators.

In terms of the nurses' role as stakeholders of structural change, nurses were categorised as influencers of the success of structural change; perhaps because clinicians could affect the development of structural change by resisting change depending on the context of their practice.

In regard to practice staff, this group of stakeholders was seen as having a major role implementing structural change as well as influencing the success of structural change. Practice staff are more on the operative side; however, if staff ‘drag their feet’ they could be seen as a form of resistance to change and could delay change without having to confront those leading the change.

Expert 28 offers valuable insights about stakeholders of structural change “heterogeneity in impact on stakeholders must be considered (e.g. geographical, equity in vulnerable populations). Vested interests in impact on stakeholders must be declared. Generalising feedback in evaluation will not be helpful. Structural change in primary care also has implications beyond health. Flow-on effects to other sectors may be exacerbated in rural and remote areas (e.g. introduction of NDIS drew allied health workforce from primary and aged care into disability care, causing gaps in services); evaluation needs to have a good understanding of context and be broad reaching”.

This comment confirms the importance of context for change in the evaluation of structural change in the stakeholders’ dimension.

Below are some of the most important findings in domain 3 showing disagreement about the role of consumers and allied health practitioners.

- 88% of experts stated that General Practitioners have a major role in influencing the success of structural change
- 76% of experts considered the government to have a major role in initiating and influencing the success of structural change.
- 88% of experts believe that medical colleges have a major role in influencing the success of structural change.
- 59% of experts considered nurses as having a major role influencing the success of structural change.
- 59% of experts thought that allied health practitioners have a major role in the implementation of structural change.
- 76% of experts thought that practice staff has an influencing role in the success of structural change



- The role of consumers in influencing the success of structural change was confirmed by 65% of experts in Round One.

The roles of allied health and consumers in structural change were not clear. Their role was explored in Round Two of the Delphi study.

#### 4.3.4 Domain 4. Outcomes of Structural Change

For each of the items in the outcome’s domain, clear consensus and general consensus was achieved.

There were interesting findings in the outcomes of structural change section and these were grouped according to topic. For example, outcomes related to patient were grouped under patient-related outcomes. The same occurred for system-related outcomes and others as below.

##### 4.3.4.1 Patient-related Outcomes

Structural change has an effect on patient care and patient outcomes. The extent of the effects or impacts is a gap in research but is outside the scope of this research.

Eighty-two percent of experts agreed that structural change directly influences patient care:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
43. Structural change has direct influence on patient care.	0	0	6%	0	12%	35%	47%

Figure 4-28 Question 43 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Eighty-two percent of experts agreed that patient outcomes are affected by structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
44. Structural change has effects on patient outcomes.	0	0	6%	0	12%	35%	47%

Figure 4-29 Question 44 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

#### 4.3.4.2 Staff-related Outcomes

In structural change, staff retention and staff satisfaction are important. Fifty-nine percent of experts agreed that staff retention impacts structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
45. Structural change impacts staff retention.	0	0	6%	24%	12%	35%	24%

Figure 4-30 Question 45 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Experts reached 70% agreement that staff satisfaction is affected by structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
46. Structural change impacts staff satisfaction.	0	0	0	18%	12%	41%	29%

Figure 4-31 Question 46 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

#### 4.3.4.3 Cost-related Outcomes

It was established that the cost of health care is impacted by structural change; 76% of experts agreed with this statement:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
47. Structural change has impacts on the recurrent cost of health care nation-wide.	0	0	6%	6%	12%	35%	41%

Figure 4-32 Question 47 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Seventy percent of experts agreed that structural change involves changes in remuneration and funding:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
48. Structural change results in changes in remuneration and funding.	0	0	0	6%	24%	41%	29%

Figure 4-33 Question 48 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

#### 4.3.4.4 System-related Outcomes

System-related outcomes of structural change refer to how structural change influences

mechanisms and systems of care delivery. The following ratings state whether the panel agreed or disagreed; however, the extent and nature of these outcomes are topic for further research.

Eighty-two percent of experts agreed that structural change has repercussions on models of care:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
49. Structural change has repercussions on models of care.	0	0	0	0	18%	29%	53%

Figure 4-34 Question 49 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Seventy-one percent of experts agreed that care coordination is influenced by structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
50. Structural change influences care coordination.	0	0	0	12%	18%	24%	47%

Figure 4-35 Question 50 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Eighty-eight percent of experts agreed that changes to business systems happen as a result of structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
42. Structural change results in changes to business systems in healthcare.	0	0	0	0	12%	47%	41%

Figure 4-36 Question 42 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Seventy percent of experts considered that IM/IT is impacted by structural change:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
51. Information management and technology is impacted by structural change.	0	0	0	12%	18%	29%	41%

Figure 4-37 Question 51 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

#### 4.3.4.5 Community-related Outcomes

Structural change has impacts beyond its immediate scope; often the wider community is affected by the effects of structural change. Seventy-seven percent of experts agreed that structural change goes further into the community that it was first intended to reach:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
52. Structural change in primary health care has impacts that ripple into the wider community.	0	0	0	12%	12%	24%	53%

Figure 4-38 Question 52 Delphi Results, Round 1, REDCap® (Harris et al. 2009)

Expert 14 expressed their expectation of outcomes of structural change “with structural change there will be a less fragmented health system and there will be more consumer empowerment through increased accountability” (e14).

On the other hand, expert e33 cautioned “beware Public health professional trying to control GP - they are not clinicians and do not understand how and why General Practice works as successfully as it does in Australia (top ten in the world - high quality training, cost effective, equitable and good health outcomes) - It works because of a trusted relationship which leads to continuity and so on, not PH outcomes recorded by ticked boxes like the UK QOF requires. The latter interferes with the primary reason for which the patient has presented. Bespoke Health maintenance and disease prevention will happen in a timely manner. So, the point is, 12 the measure of outcomes needs to be carefully considered beyond the traditional PH measures”.

Expert 26 stated “to be successful, structural change requires well thought out stakeholder consultation and iterative implementation utilizing on data to measure a range of desired outcomes (and not outputs)”

These findings are important as a preliminary scan of structural change as they provide a sketch for further examination of structural change in primary care.

To sum up, the most important findings in the outcomes of structural change are:

- Experts confirmed with 80% and above agreement that structural change outcomes include changes to business systems, direct influence on patient care, effects on patient outcomes.
- Experts agreed with a 71% agreement rate that staff satisfaction is impacted by structural change.
- For 65% of experts, agreement was reached when asked if impact on the recurrent cost of health care nation-wide was considered an outcome of structural change.
- 76% agreement was reached when asked if structural change had repercussions on models of care.
- 76% of experts agreed that structural change has impacts that ripple into the wider community within the primary health context.

It can be concluded that context plays an important role across all domains. Experts mentioned context several times when addressing items throughout the questionnaire. The framework proposed by this research incorporates context and introduces the concept of context-awareness in Chapter 7.

## **4.4 Qualitative Data**

Qualitative data was collected from free-text fields or comments section in the Delphi questionnaire. Eleven experts provided their opinions via free-text fields. These fields were non-compulsory in the design of the Delphi questionnaire.

A qualitative data analysis software called MAXQDA (2019) was used for coding. Coding followed the process described in section 3.4.3.4 of Chapter 3. The following are the themes that emerged in Round 1.

### **4.4.1 Definition of Structural Change**

The majority of experts agreed that the definition extracted from the literature could be improved. They thought the text was very conceptual and brief. They asked for a criterion to be used in structural change in Primary Care which could be subject of future research. One of the

experts volunteered a definition as “a reorientation of the predominant model of care that underpins health care delivery” (e14) and another offered that structural change was about restructuring lines of accountability. The majority agreed that structural change involves the whole of the healthcare system and that without a clear definition of structural change, research into structural change was challenging.

#### **4.4.2 Complexity of Structural Change**

Experts agreed that structural change is multidimensional and longitudinal in approach and “not a quick fix” (e17). They associated this complexity with behavioural change and the risk of applying structural change to primary care practices without consultation. One of the experts stated that political compromise adds to this complexity and another one mentioned dual administration.

#### **4.4.3 Leadership**

It was thought that strong General Practitioner (GP) leadership is required for structural change to happen and examples were given where such leadership was provided by the Primary Health Care (PHC) Working Group, Health Care Home Implementation Advisory Group and MBS review.

One expert suggested that there is significant inertia in General Practice and that the medical peak bodies are partly responsible for this inertia. The scope of this research did not allow for further investigation into this topic.

#### **4.4.4 Shared vision.**

Experts thought that, for structural change to be successful, the vision of those driving the change should be shared and understood by those on the receiving end of the change e.g. the consumer needs to support the change and that “the hearts and minds of medical providers need

to be won” (e14) with the support of clinical and political leadership.

#### **4.4.5 Resistance to Change**

Experts agreed that structural change is not instantaneous. It takes time for staff to embrace the change but those that perceive the change will enhance their current role, expand their skill set and give them professional growth will be more ready to implement the changes. Another expert from the medical profession stated that “General Practitioners in particular are highly resistant to structural change”. More rounds of the Delphi study would have allowed the investigation of this topic.

#### **4.4.6 Policy**

It was mentioned that health reform is often tied to election cycles and that structural change needs to be planned and forward focused. Policies need to be unifying by building links between Primary Care and tertiary care to reduce silos in the health care system. It was suggested that the effectiveness of structural change depends on good policy alignment with strong political support and intent.

#### **4.4.7 Funding and Population Health Principles**

Experts thought that at the core of structural change lies the reform of funding mechanisms with an expert stating that the Health Care Home (HCH) initiative and MBS review were “brave but necessary”. It was suggested that these changes support the pillars of the Quadruple Aim; something that could have been explored on a third round of the Delphi study.

#### **4.4.8 Stakeholder Consultation**

Experts agreed that structural change was about the alignment of stakeholder focus on a shared objective involving the patient-centred characteristic of the Quadruple Aim.

To be successful, structural change requires a well-thought-out stakeholder consultation.

#### **4.4.9 Other issues**

Information and technology systems could be improved to support structural change e.g. systems for the management of cohorts of patients per Health Care Homes.

### **4.5 Quantitative Data**

The instrument that collected Delphi study responses was designed in REDCap®. Likert scale data was converted into numerical data by assigning the lowest number 1 (the ‘entirely disagree’ extreme) and ascending to the maximum number of 7 (the ‘extremely agree’ extreme).

#### **4.5.1 SPSS Descriptive Statistics**

After score-reversing item 4, data was entered into SPSS for the purposes of obtaining descriptive statistics. A discussion in statistical techniques was included in Section 3.4.33.4.3 of Chapter 3.

#### **4.5.2 Mean and Standard Deviation**

A small standard deviation indicates responses are very close to the mean and to each other and is therefore, representative of consensus, see Table 14 SPSS Descriptive Statistics - Round 1.

However, Sullivan and Artino Jr (2013) state that because data derived from Likert scales are ordinal responses, “presentation of a mean to the 100<sup>th</sup> decimal place is usually not helpful or enlightening to readers” (p. 542). Furthermore, Allen and Seaman (2007) warn about reaching misleading conclusions about agreement when analysing Likert-type data using means, and recommend that the researcher should rather consider the ordinal nature of the data for analysis.



### Delphi Round 1 • Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
The concept of structural change is well understood in health care.	17	1	6	3.06	1.560	2.434
I have a good understanding of structural change in health care.	17	2	7	5.65	1.455	2.118
Structural change is always multi-dimensional.	17	5	7	6.53	0.624	0.390
q4reverted_Structural change in primary care is different to structural change in other industries	17	2	7	5.06	1.638	2.684
Structural change involves changes in resource distribution and activities.	17	4	7	6.18	0.883	0.779
Structural change involves policy, systems and environmental change.	17	3	7	6.18	1.185	1.404
Structural change transforms the core business of the organisation.	17	1	7	5.06	1.676	2.809
Structural change modifies the physical, social, political and economic environment in which health-related decisions take place.	17	2	7	5.53	1.125	1.265
Structural change in healthcare is complex.	17	6	7	6.82	0.393	0.154
The implementation of structural change is expensive.	17	3	7	5.41	1.064	1.132
The outcomes of structural change are always unpredictable.	17	2	7	4.18	1.741	3.029
Structural change in healthcare is always irreversible.	17	1	5	2.94	1.391	1.934
Structural change in health care includes modifications in remuneration.	17	1	6	5.00	1.323	1.750
Structural change in primary care settings can be introduced in isolation to other changes in health care.	17	1	5	3.53	1.586	2.515
Structural change in General Practice necessarily involves modifications to GP payments.	17	1	7	5.00	1.803	3.250
Structural change in General Practice can be introduced in isolation to other changes in health care.	17	1	6	3.00	1.500	2.250
The political climate drives structural change.	17	3	7	5.82	1.015	1.029
Changes in the Australian economy drive structural change.	17	2	6	4.88	1.054	1.110
The culture in primary care is conducive to successful structural change.	17	1	5	2.47	1.328	1.765
The culture specifically in general practice is conducive to successful structural change.	17	1	5	2.41	1.372	1.882
Gov's role in initiating structural change.	17	4	7	6.06	0.966	0.934
Gov's role in implementing structural change.	17	1	7	5.76	1.480	2.191
Gov's role in influencing the success of structural change.	17	5	7	6.18	0.636	0.404
Medical college's role in initiating structural change.	17	2	7	5.06	1.298	1.684
Medical colleges' role in implementing structural change.	17	4	7	5.35	0.862	0.743
Medical colleges' role in influencing the success of structural change.	17	5	7	6.35	0.702	0.493
General Practitioners' in initiating structural change.	17	2	7	5.00	1.369	1.875

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
General Practitioners' role in implementing structural change.	17	4	7	6.00	0.866	0.750
General Practitioners' role in influencing the success of structural change.	17	5	7	6.41	0.712	0.507
Nurses' role in implementing structural change.	17	1	6	4.24	1.602	2.566
Nurses' role in implementing structural change.	17	2	7	5.12	1.409	1.985
Nurses' role in implementing structural change.	17	3	7	5.76	1.091	1.191
Allied health's role in implementing structural change.	17	1	7	4.29	1.724	2.971
Allied health's role in implementing structural change.	17	1	7	4.88	1.317	1.735
Allied health's role in implementing structural change.	17	1	7	5.29	1.532	2.346
Practice staff's role in implementing structural change.	17	1	7	4.24	1.678	2.816
Practice staff's role in implementing structural change.	17	4	7	5.94	0.966	0.934
Practice staff's role in implementing structural change.	17	3	7	5.82	1.334	1.779
Consumer's role in implementing structural change.	17	2	7	5.12	1.900	3.610
Consumer's role in implementing structural change.	17	1	7	3.88	1.799	3.235
Consumer's role in implementing structural change.	17	2	7	5.53	1.663	2.765
Structural change results in changes to business systems in healthcare.	17	5	7	6.29	0.686	0.471
Structural change has direct influence on patient care.	17	3	7	6.18	1.074	1.154
Structural change has effects on patient outcomes.	17	3	7	6.18	1.074	1.154
Structural change impacts staff retention.	17	3	7	5.47	1.281	1.640
Structural change impacts staff satisfaction.	17	4	7	5.82	1.074	1.154
Structural change has impacts on the recurrent cost of health care nation-wide.	17	3	7	6.00	1.173	1.375
Structural change results in changes in remuneration and funding.	17	4	7	5.94	0.899	0.809
Structural change has repercussions on models of care.	17	5	7	6.35	0.786	0.618
Structural change influences care coordination.	17	4	7	6.06	1.088	1.184
Information management and technology is impacted by structural change.	17	4	7	6.00	1.061	1.125
Structural change in primary health care has impacts that ripple into the wider community.	17	4	7	6.18	1.074	1.154
Valid N (listwise)	17					

Table 14 SPSS Descriptive Statistics - Round 1

### 4.5.3 Variance

The variance calculated using SPSS (see section 4.5.2) depicted in Figure 4.39 below is the squared standard deviation and indicates the spread of the dataset (Morgan et al. 2012).

The variance would normally be compared over the two rounds and a reduction in variance would have indicated consensus. In this case, round 2 was largely focused on the evaluation of structural change and was restricted to 20 items because of the high calibre of participants and their time constraints; therefore, a comparison of variances for the different items was not appropriate.

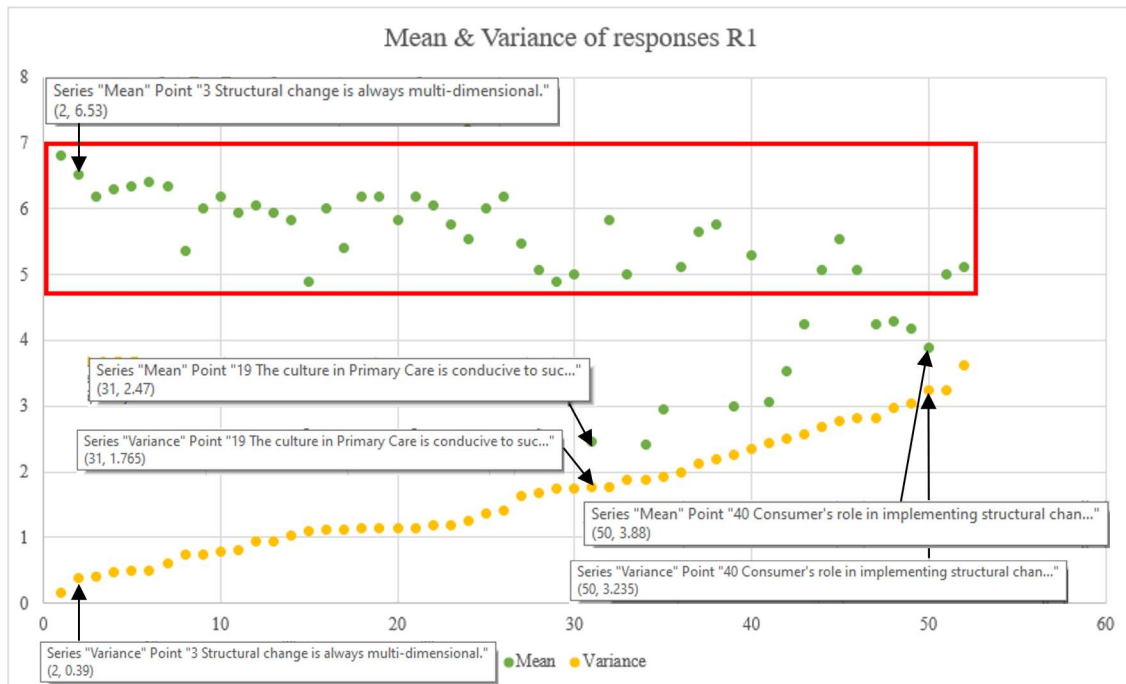


Figure 4-39 Variance of Participants responses Round 1

In the figure above responses, when organised by variance, mostly fell between means of 5 and 7 as marked by the red box. In the Likert scale, 5 represented 'somewhat agree', 6 represented 'mostly agree' and 7 represented 'entirely agree'. A small variance of 0.39 for item 2 was consistent with an agreement of 6.53 (entirely agree). The mean is the same as for item 2.

However, for item 19 "The culture in primary care is conducive to successful structural change", the mean fell outside the red box. With a mean of 2.47 (somewhat disagree in the Likert scale) and a large variance of 1.8, the item reached an agreement of 71% as the majority of the responses disagreed with the statement. The 12% of 'agree nor disagree' responses were not taken into consideration when calculating the 71% disagreement on item 19.

In another case (the item referring to consumer's roles in structural change) a larger variance of 3.24 in item 40 corresponded to a mean of 3.88 (between 'somewhat agree' and 'neither agree nor disagree'). This item had responses thinly spread out across the Likert scale and therefore was included for further investigation in round 2.

Without a close examination of each item, it would have been difficult to ascertain which items to investigate further. It was not sensible to rely on statistics alone for the understanding of this particular topic.

	<i>Nominal</i>	<i>Dichotomous</i>	<i>Ordinal</i>	<i>Normal</i>
Frequency Distribution	Yes <sup>a</sup>	Yes	Yes	OK <sup>b</sup>
Bar Chart	Yes	Yes	Yes	OK
Histogram	No <sup>c</sup>	No	OK	Yes
Frequency Polygon	No	No	OK	Yes
Box and Whiskers Plot	No	No	Yes	Yes
<b>Central Tendency</b>				
Mean	No	OK	Of ranks, OK	Yes
Median	No	OK = Mode	Yes	OK
Mode	Yes	Yes	OK	OK
<b>Variability</b>				
Range	No	Always 1	Yes	Yes
Standard Deviation	No	No	Of ranks, OK	Yes
Interquartile range	No	No	OK	OK
How many categories	Yes	Always 2	OK	Not if truly continuous
<b>Shape</b>				
Skewness	No	No	Yes	Yes

<sup>a</sup>Yes means a good choice with this level of measurement.

<sup>b</sup>OK means OK to use, but not the best choice at this level of measurement.

<sup>c</sup>No means not appropriate at this level of measurement.

Table 15 Appropriate Descriptive Statistics and Plots. Source: Morgan et al. (2012) p.49

Morgan et al. (2012) argue that this test is suitable for data that is normally distributed and that if the data was largely non-normal e.g. ordinal, the means and standard deviation may not offer accurate information about central tendency and variability. Table 15 above offers a guide regarding the descriptive statistics to use when dealing with ordinal data.

#### 4.5.4 Scale reliability: Cronbach's Alpha

Cronbach's Alpha gives a measure of internal consistency, which is the extent to which all items measure the same concept and how the items of a scale are interconnected. It is expressed by a number between 0 and 1; a value  $\geq 0.7$  is preferable. A value higher than 0.90 may indicate

items could be measuring the same concept over and over (Tavakol & Dennick 2011).

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.868	0.885	52

Figure 4-40 Cronbach's Alpha (SPSS)

In this case 0.87 indicates that the set of items are closely related as a group, which means the scale in questionnaire 1 of the Delphi study is reliable.

Round One was helpful to find a definition of structural change in health care. Additionally, Round One provided relevant outcomes to structural change along with the roles of stakeholders in terms of initiating, implementing and influencing the success of structural change. Expert's comments highlighted issues and confirmed literature findings that are addressed in Chapter 7.

An important finding extracted from Round One for the evaluation tool is the element of context in structural change that are included in the tool pending findings in Round Two.

The second round of the Delphi study focused on the evaluation of structural change. Items that did not reach consensus were investigated.

## **4.6 Conclusion**

Round One of the Delphi study was important to ascertain how experts were acquainted with the concept of structural change in health care, a topic that has not been explored in this way before.

Findings from the first round were helpful to:

- formulate a definition of structural change,
- understand that structural change is complex and expensive,

- understand stakeholders of structural change are involved in different capacities,
- understand that there are drivers of structural change such as the political and economic environment,
- understand that the current culture in health care is not conducive to the success of structural change,
- understand that the outcomes of structural change involve the patient, the staff and the system, and have far reaching effects into the wider community.

Some of the findings included:

- A preliminary definition for structural change in primary care.

“Structural change is multi-dimensional, involving changes in resource distribution, activities, policies, systems and the environment as well as disruption of the core business of at least one segment of the health care system. Structural change occurs within the physical, social, political and economic environment in which health-related decisions take place.”

- Fifty-eight percent of experts agreed that structural change is not well understood in health care. This adds weight to the need to do this research.
- Seventy-one percent of experts stated they had a good understanding of structural change in health care. This finding corroborates the expert panel had the skills, experience and knowledge suitable for the investigation of this topic.
- Eighty-eight percent of experts agreed that structural change is multi-dimensional; therefore, a tool for the evaluation of structural change should accommodate this element.
- More research is required to explore a criterion for structural change in primary care. One of the experts stated “I think the definition above could be improved... An expansion to specify some characteristics and/or criteria would be helpful” (e23).

- The concept of structural change is not well understood. Respondents had mixed views about structural change being understood in health care; however, they reached consensus in regard to their own understanding of structural change in health care. This finding corroborates that chosen participants were the right panel for the investigation of this topic.
- Structural change is multi-dimensional, as confirmed by consensus in question 3. However, experts were not sure whether structural change in health care is the same or different to other industries.
- The complexity and high cost of structural change were characteristics that experts agreed to be important in the study of structural change.
- One of the experts stated “Most participants in the health system have only ever known one funding model. Most providers in the health system are disconnected from principles of population health” (e14). The relationship between the funding model used and the high cost of structural change is worth exploring.
- The irreversibility of structural change in health care (question 12) was controversial. It was observed that some respondents interpreted the question from the point of view of their segment in primary care and for some it was easy to go back to the state prior to structural change. To them, the ‘new normal’ could easily be reverted and the dismantling of what was perceived as structural change would have not left any traces. By contrast, two academics and one executive thought that structural change is not always reversible which adds to the theory that each expert interpreted the question from their position within the health system.

The next chapter explores responses in Round Two of the Delphi study, to issues that had returned mixed views in Round One.

## Chapter 5 Findings of Round Two

Chapter 4 presented the findings of Round One of the Delphi study. Round One set the foundation for the questionnaire in Round Two in which a definition of structural was drawn from items of consensus and presented to the panel for rating in Round Two. Experts' opinions were found on 'mostly agree' and 'entirely agree' confirming consensus on the definition of structural change.

The same definition was assessed by the experts as providing the basis for the development of a tool for the evaluation of structural change. This time, experts' opinions were split across the right side of the scale including 'neither agree nor disagree' as elaborated in the paragraphs ahead.

In this chapter, the results of the Delphi study in Round Two are presented.

### 5.1 Design of the Round Two Questionnaire

The questionnaire for the Round Two was designed based on items of consensus, and non-consensus or mixed views in Round One.

Round One Questionnaire	Round Two Questionnaire
Section I. Definition of Structural Change in Health Care (Asada et al. 2017)	Section I. Definition of Structural Change A definition from items of consensus
Section II. Domains of Structural Change	in Round One was presented for rating.
Domain 1. Characteristics of Structural Change (Domingo & Tonella 2000)	The same definition as basis for an evaluation tool was presented for



Round One Questionnaire	Round Two Questionnaire
Domain 2. Environment/Context for Structural Change (Pollitt 2009)	rating Section II.
Domain 3. Stakeholders in Healthcare (Jolley et al. 2008)	Items that did not achieve consensus in Round One
Domain 4. Outcomes of Structural Change (Coid & Davies 2008; Lieberman & Selker 2000; Martsolf et al. 2015)	Stakeholders in Structural Change: Items of non-consensus (mixed views) Items for Inclusion in a tool for evaluation of structural change in primary care (items of consensus in Round One)

Table 16 Rationale for Round Two Questionnaire Design

## 5.2 Findings: Delphi Study - Round Two

As described in Chapter 3, Round Two consisted of twenty questions and its objective was to further examine items that did not achieve consensus in Round One. The focus of Round Two was to explore whether items identified as important in structural change were also relevant in the evaluation of structural change.

Round Two Structure Round Two of the Delphi study was structured into four sections as indicated in Figure 5-1 below:



Figure 5-1 Round 2 Delphi Questionnaire Structure

Round One of the Delphi questionnaires yielded a definition of structural change from separate

items as agreed by the expert panel. In Round Two, this definition was proposed to experts who were also asked to rate whether this definition formed the basis for the development of a tool for the evaluation of structural change in primary care.

Items of non-consensus were summarised and presented to experts for rating. Items of non-consensus were those items that fell into the category of ‘mixed views’ in Round One of the Delphi questionnaire.

In Round One, there was general consensus about the participation of government, medical colleges, general practitioners, nurses and practice staff in structural change. Therefore, it was important that these stakeholders be included in the evaluation of structural change in primary care.

However, there was no consensus about two groups of stakeholders in regard to their involvement in structural change. These two stakeholder groups, ‘allied health professionals’ and ‘consumers’ were included in Round Two for re-rating by the experts. This time, the scale was reduced to three points in order to narrow the focus of the expert panel into ‘never’, ‘sometimes’ and ‘always’.

The last section of the Round Two questionnaire presented items that achieved consensus in Round One as outcomes of structural change. This time, experts were asked to rate these items as useful in a tool for the evaluation of structural change in primary care. A total of 20 questions comprised Round Two of the Delphi study.

### **5.2.1 Round Two: Summary of Findings**

Figure 5-2 below summarises the findings in Round Two of the Delphi study.

### Delphi Round Two Findings (Questions 1-7)

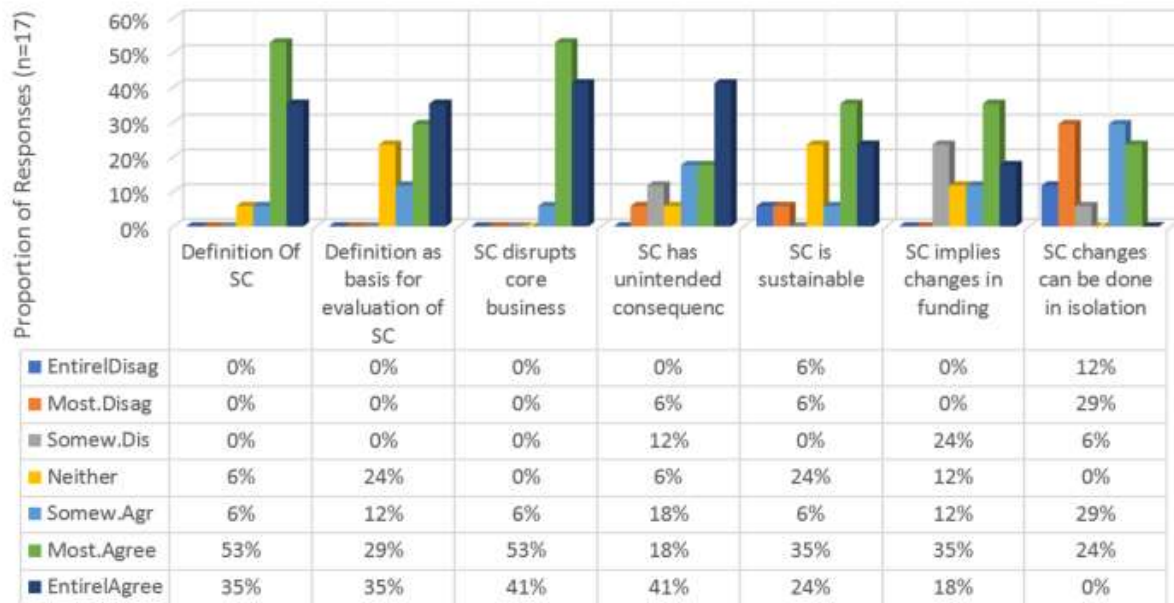


Figure 5-2 Round 2 Findings: Definition & Round 1 Non-Consensus Items

Most participants agreed with the definition of structural change in primary care presented to them. However, 24% preferred to neither agree nor disagree about whether the definition provided the basis for the evaluation of structural change. One of the respondents (e20) mentioned that required metrics were missing from this definition. Another (e33) considered the definition as suggestive of an integrated health system when in their eyes, the health system is not at all integrated but a cluster of policies and practices.

From there, an array of views on the different impacts of structural change followed. Another respondent (e29) mentioned that sustainability of structural change was difficult to ascertain as the nature of the change was unknown and sustainability is a subjective concept.

Other impacts of structural change, including unintended consequences, had data scattered across the scale. This is probably an indication that panellists interpreted the questions differently given their perspectives as members of different levels of the health system.

The role of two groups of stakeholders in structural change was further investigated in Round

Two. These two groups are allied health practitioners (AHPs) and consumers.

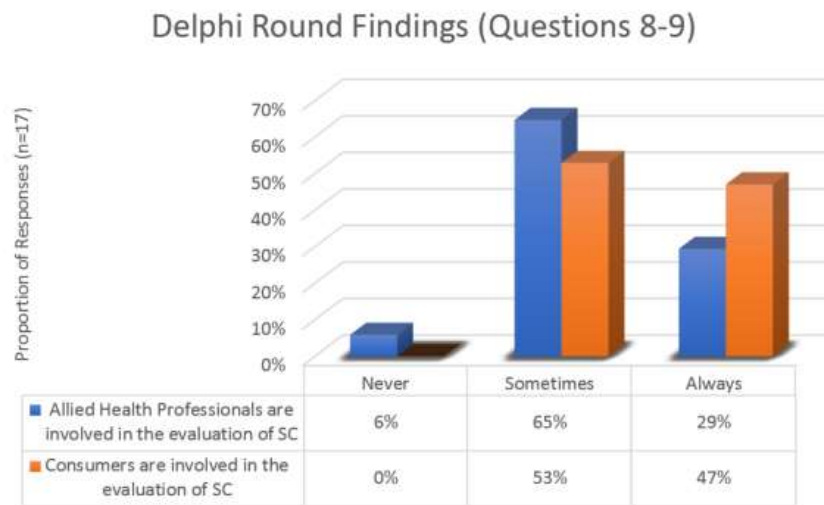


Figure 5-3 Round 2 Findings: Allied Health Professionals & Consumers

Overall, respondents thought that allied health practitioners (AHPs) and consumers (see Figure 5-3) should be involved in the evaluation of structural change only ‘sometimes’ and for other experts, their involvement was dependent on the nature of the evaluation at hand. The level of involvement and the stage of the evaluation at which allied health practitioners (AHPs) and consumers are to be involved are topics of interest but out of the scope of this research.

In terms of outcomes of structural change, see Figure 5-4, there was more emphasis on patient care and patient outcomes as important items in the evaluation of structural change. Conversely, there was less emphasis on impacts of structural change in the wider community although repercussions of structural change on models of care rated high. Staff retention scored the lowest and was not considered a core feature in the evaluation of structural change; however, a significant majority favoured it to be included ‘sometimes’.

### Delphi Round Two Findings (Questions 10 - 20)

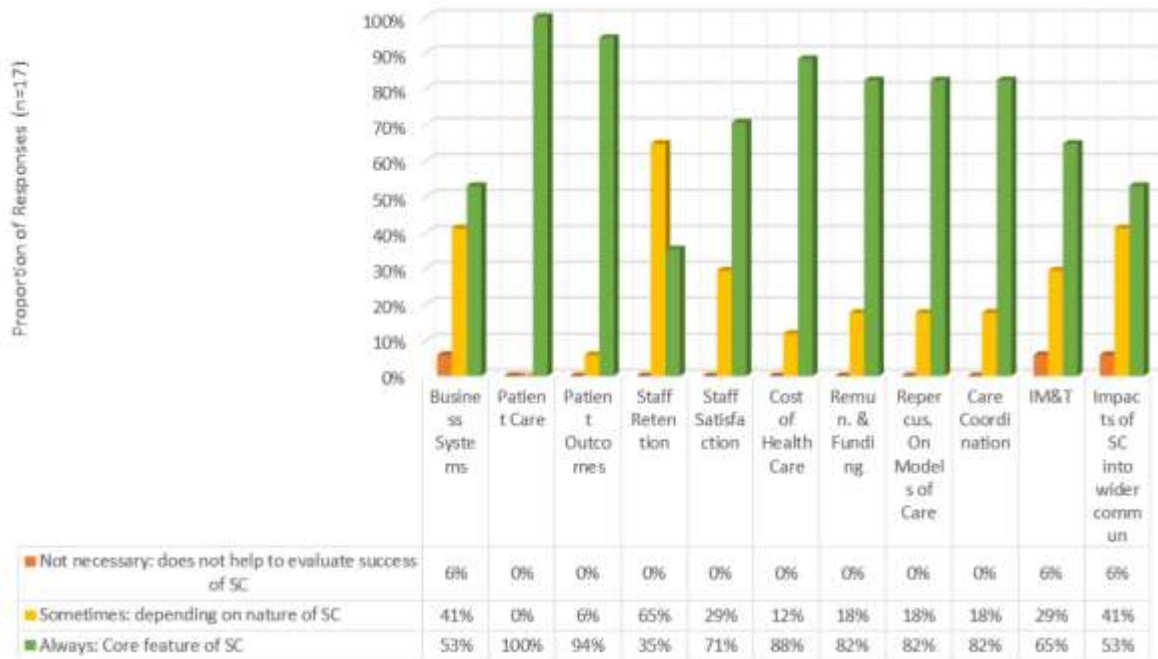


Figure 5-4 Round 2 Findings: Items for inclusion in a tool for the Evaluation of Structural Change

The following Sections examine these results in detail.

### 5.3 Definition of Structural Change

Respondents (n=17) averaged 6.18 (SD=0.81) on a seven-point Likert scale. The Likert scale ranged from entirely disagree (1) to entirely agree (7).

Respondents rated their agreement with a definition of structural change derived from consensus in Round One:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
1. Please rate the extent to which you agree with the above definition of structural change in the context of primary care.	0	0	0	6%	6%	53%	35%

Figure 5-5 Agreement with definition drawn from Round 1

Most respondents (88%) agreed with the following definition of structural change within the context of primary care:

“structural change is multi-dimensional, involving changes in resource distribution, activities, policies, systems and the environment as well as disruption of the core business of at least one segment of the health care system. Structural change occurs within the physical, social, political and economic environment in which health-related decisions take place”.

The above definition provided a foundation for the development of a tool for the evaluation of structural change in primary care for 65% of the respondents. Respondents (n=17) averaged 5.76 (SD=1.20) on a seven-point Likert scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
2. Please rate the extent to which you agree that the above definition provides a basis for the development of a tool for the evaluation of structural change in primary care.	0	0	0	24%	12%	29%	35%

Figure 5-6 Agreement on definition as basis for evaluation of SC

In terms of a definition for structural change, there was a minority still unsure about the definition of structural change in primary care being sufficiently all-encompassing. There were items suggested for inclusion such as community perspectives and expectations (e22), history as a factor on its own right (e29) and relational change (e31).

It was also highlighted (e33) that, according to systems theory, the health system is not a true system and therefore it does not ‘behave’ as expected, for example, changes made to one component of the system would not necessarily have an impact on another component of the same system.

Further, a flaw in the definition was pointed out (e33) as it suggested a completely integrated

system. However, this was not the case of the health system because financial or non-financial changes, for example, may or may not affect other components of the system.

This notion sheds light on the difficulty of defining structural change in primary care. Inherently, its targets are highly dynamic as outcomes are subject to the nature of the change, the setting, the particularity of the intervention, the reaction of the receiver and the uncertainty of the impact or lack of impact of the change.

### 5.4 Items of No Consensus in Round One of Delphi Study

#### 5.4.1 Core Business

Ninety-four percent of respondents agreed that structural change disrupts the core business of at least one segment of the health system. Respondents (n=17) averaged 6.35 (SD=0.61) on a seven-point Likert scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
3. Structural change disrupts the core business of at least one segment of the health system.	0	0	0	0	6%	53%	41%

Figure 5-7 Agreement on SC disrupts core business

Respondents were more comfortable with the introduction of at least one segment of the health system as opposed to the health system as a whole as presented in Round One. The observation here is that respondents viewed and adopted a position towards the question according to the level from which they were viewing the health system and, more particularly, structural change within the health system as they know it and have experienced it.

One general practitioner asserted that what GPs do in isolation needs to be changed for the benefit of the rest of the health system.

**5.4.2 Unintended Consequences**

In terms of unintended consequences, fifty nine percent of participants agreed with structural change having unintended consequences. One health practitioner (e17) mostly disagreed and two academics (e16 and e25) somewhat disagreed with the statement. Respondents (n=17) averaged 5.53 (SD=1.66) on a seven-point Likert scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
4. Structural change has unintended consequences.	0	6%	12%	6%	18%	18%	41%

Figure 5-8 Agreement on unintended consequences of SC

**5.4.3 Structural change as Sustainable**

Although 59% of respondents agreed that successful structural change is sustainable, 23% neither agreed nor disagreed and 12% disagreed with this statement. Respondents (n=17) averaged 5.18 (SD=1.78) on a seven-point Likert scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
5. Successful structural change is sustainable.	6%	6%	0	24%	6%	35%	24%

Figure 5-9 Response to Question 5: Structural Change is sustainable

Results from ‘entirely agree’ and ‘mostly agree’ were combined to reach the 59% mentioned above. One academic added that sustainability is a very subjective term and therefore it is difficult to assess structural change without knowing the specific change involved. This explains



how the number of respondents that ‘entirely agreed’ is the same as the ones that ‘neither agreed nor disagreed’. The subjectivity of the nature of structural change adds to the complexity of its definition and evaluation.

**5.4.4 Funding and/or Remuneration**

This item was separate and both items had mixed views in Round One.

In Round Two, these items were used interchangeably. Fifty three percent of respondents agreed that structural change in primary care always involves changes in funding and/or remuneration. However, 23.5 percent of respondents disagreed with the statement and twelve percent were neither agreed nor disagreed. The same Respondents (n=17) averaged 5.12 (SD=1.50) in a seven-point Likert scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
6. Structural change in primary care always involves changes in funding and/or remuneration.	0	0	24%	12%	12%	35%	18%

Figure 5-10 Agreement on funding & remuneration as changes in SC

An academic (e22) suggests that structural change is by definition disruptive of the structure in which groups and individuals have vested interests e.g. finance, power, status, and reputation and these must be put aside if structural change is to be successful.

The above highlights that often in healthcare, strong personality mixes with power and sometimes key players prefer to walk away rather than negotiate and, therefore, these vested interests add to the complexity and are a hindrance to the success of structural change.

**5.4.5 Introducing Changes in Isolation**

Forty-one percent of participants did not agree with the statement that it is possible to introduce

structural change in primary care settings in isolation to other changes in health care. At the other end of the spectrum, twenty three percent agreed and twenty nine percent somewhat agreed with the statement. Respondents (n=17) averaged 3.76 (SD=1.92) on a seven-point Likert scale:

	Entirely Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Entirely Agree
7. It is possible to introduce structural change in primary care settings in isolation to other changes in health care.	12%	29%	6%	0	29%	24%	0

Figure 5-11 Agreement on introducing structural change in isolation in Primary Care

It can be seen from the scattered data along the scale, that this is an item of contention. One academic found it difficult to imagine structural change that was contained strictly within primary care settings. Conversely, a corporate executive noted that primary care is part of the health sector ecosystem, and therefore it was impossible to change one part without the need to adjust other parts of the system.

Upon reflection, one of the issues that adds to the complexities of introducing change in isolation or not is the fact that the adjusting of the other parts rarely takes place.

### 5.5 Stakeholders in Structural Change

In Round One, there was consensus about the government, medical colleges, general practitioners, nurses and practice staff being stakeholders in structural change in primary care. However, there were mixed views about the role of allied health and consumers.

In Round Two, the involvement of allied health professionals as stakeholders in structural change in primary care was investigated:

	Never	Sometimes	Always
8. Allied health professionals are involved in the evaluation of structural change.	6%	65%	29%

Figure 5-12 Agreement on AHPs involvement in SC

Sixty-five percent of respondents stated that allied health practitioners (AHP) should sometimes be involved in the evaluation of structural change, whilst thirty percent stated AHPs should always be involved. One academic stated that their involvement would depend on the specifics of the evaluation of structural change (e29). Another academic (e33) stated that vested interests pollute discussions with AHPs but they need to be heard as they do add value.

From this, it seems evident that monitoring own agenda drivers would be required in the evaluation of structural change.

Likewise, the involvement of consumers in the evaluation of structural change had mixed views in Round One. In Round Two, 53% of respondents stated that consumers should sometimes be involved whereas forty-seven percent agreed that consumers should always be involved in the evaluation of structural change.

	Never	Sometimes	Always
9. Consumers are involved in the evaluation of structural change.	0	53%	47%

Figure 5-13 Consumers' involvement in Structural Change

One health executive contributed that value is only found if the consumer is benefited. Their involvement (in the evaluation), they said, it is to convey the benefits they are seeking (e34). A General Practitioner stated that if consumer-focused-health is not delivered then the “change journey was a waste of time” (e14).

An academic (e22) considered ‘citizens’ as the recipients and partners in primary care delivery and, therefore, the importance of their involvement in evaluating structural change impacts. In contrast, a General Practitioner (e14) stated that not all consumers and other providers are the same; the GP proposed that ‘change agents’ are preferable in an evaluation not the ‘nay sayers’. Therefore, the qualities of the consumers involved may add or subtract from the evaluation.

**5.6 Items for Inclusion in an Evaluation Tool for Structural Change in Primary Care**

In Round One, a consensus was formed around multiple aspects of the implications of structural change in healthcare. These included patient--centred outcomes and care coordination, as well as staff satisfaction and retention. Furthermore, a consensus was reached regarding funding and the business side of healthcare. Specifically, an overall agreement was made about business systems, including remuneration and funding, and information management through technology, in structural change.

Overall, Round One synthesised survey items that focused on impacts of structural change that implicate not only healthcare directly, but the wider community as well.

In Round Two, respondents rated these items in terms of their usefulness in a tool for the evaluation of structural change in primary care within a scale of ‘not necessary’, ‘sometimes’ and ‘always’.

**5.6.1 Business systems**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
10. Business systems.	6%	41%	53%

Figure 5-14 ‘Business systems’ usefulness in SC evaluation

Fifty-three percent of respondents agreed that business systems should be a core feature in the evaluation of structural change. Forty-one percent endorsed business systems as a core feature of structural change evaluation depending on the nature of the structural change. Only one participant (e18) considered this item not helpful in evaluating the success of structural change.

**5.6.2 Patient care**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
11. Patient care.	0	0	100%

Figure 5-15 ‘Patient care’ usefulness in SC evaluation

Respondents were unanimous about ‘patient care’ being a core feature in the evaluation of structural change in primary care.

**5.6.3 Patient outcomes**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
12. Patient outcomes.	0	6%	94%

Figure 5-16 ‘Patient outcomes’ usefulness in structural change evaluation

Patient outcome was another item that the majority of respondents agreed being a core feature in the evaluation of structural change. The exception was one academic (e24) who maintained that patient outcomes can sometimes be included depending on the nature of structural change.

### 5.6.4 Staff retention

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
13. Staff retention.	0	65%	35%

Figure 5-17 Response to Question 13:Staff retention usefulness in structural change evaluation

In terms of staff retention, 65% considered this item to be included only sometimes depending on the nature of the change, whereas the rest of the respondents, thirty-five percent, maintained it should always be included.

### 5.6.5 Staff satisfaction

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
14. Staff satisfaction.	0	29%	71%

Figure 5-18 ‘Staff satisfaction’ usefulness in Structural Change evaluation

For staff satisfaction, the results were inverted in comparison with staff retention. Seventy-one percent of respondents considered staff satisfaction a core feature of structural change. Twenty-nine percent thought that staff satisfaction should be sometimes included depending on the nature of the structural change.

### 5.6.6 Cost of health care

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
15. Cost of health care.	0	12%	88%

Figure 5-19 ‘Cost of health care’ usefulness in Structural Change evaluation

The cost of health care also had a unanimous vote similar to patient outcomes. Eighty-eight percent of the respondents considered it a core feature whereas only twelve percent considered

cost of health care need only to be included sometimes depending on the nature of the structural change. The two respondents were one academic and one health practitioner (e24 and e17).

**5.6.7 Remuneration and funding**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
16. Remuneration and funding.	0	18%	82%

Figure 5-20 Remuneration & funding usefulness in Structural Change evaluation

Most of the respondents (82%) considered remuneration and funding a core feature in the evaluation of structural change. The remaining (e24, e25 and e34) three participants (18%) found this item to be required only sometimes depending on the nature of the structural change.

**5.6.8 Repercussions of structural change on models of care**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
17. Repercussions of structural change on models of care.	0	18%	82%

Figure 5-21 Repercussions of SC on models of care usefulness in Structural Change evaluation

The repercussions of structural change on models of care were thought to be important by 82% of the participants. Only three (e31, e25 and e18) participants (18%) considered this item should only be included depending on the nature of the structural change.

**5.6.9 Care coordination**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
18. Care coordination.	0	18%	82%

Figure 5-22 Care coordination usefulness in Structural Change evaluation

This item followed the pattern of the last two items with 82% considering it a core feature and 18% (e18, e23 and e25) preferring to include care coordination only sometimes.

**5.6.10 Information Management and Technology (IM&T)**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
19. Information management and technology.	6%	29%	65%

Figure 5-23 ‘IM&T’ usefulness in Structural Change evaluation

Sixty-five percent of respondents considered IM & T to be a core feature in the evaluation of structural change. Twenty-nine percent of respondents thought that IM&T is to be included ‘sometimes’ depending on the nature of structural change. Only one respondent (e18) stated that IM & T does not help in the evaluation of the success of structural change.

**5.6.11 Impacts of structural change that ripple into the wider community**

	Not necessary: does not help to evaluate success of SC	Sometimes: depending on nature of SC	Always: core feature of SC
20. Impacts of structural change that ripple into the wider community.	6%	41%	53%

Figure 5-24 Impacts of Structural Change on wider community and its usefulness in Structural Change evaluation

Fifty-three percent of respondents considered that a core feature of structural change and an item for evaluation are the impacts that ripple into the wider community. Forty-one percent of respondents thought that these impacts are to be included sometimes when evaluating structural change and only one respondent (e18) thought that this item does not help to evaluate the success of structural change.



Through free-text fields, experts recommended additional items that could assist with the evaluation of structural change:

Business structure and leadership (e20), outcomes additional to patient outcomes (e22), and equity effects for patients and staff, are all differentially impacted due to their location, ethnicity or age (e23).

A respondent added that one of the difficulties for structural change lies in the fact that no how-to implementation or a pathway of change management to get to the new model of care is provided (e17).

## **5.7 Basis for an Evaluation Tool in Primary Care**

Items for inclusion in a tool for the evaluation of structural change in primary care have been chosen according to their score in terms of level of agreement.

Figure 5-25 below give a summary of items experts agreed for inclusion in the evaluation of structural change.

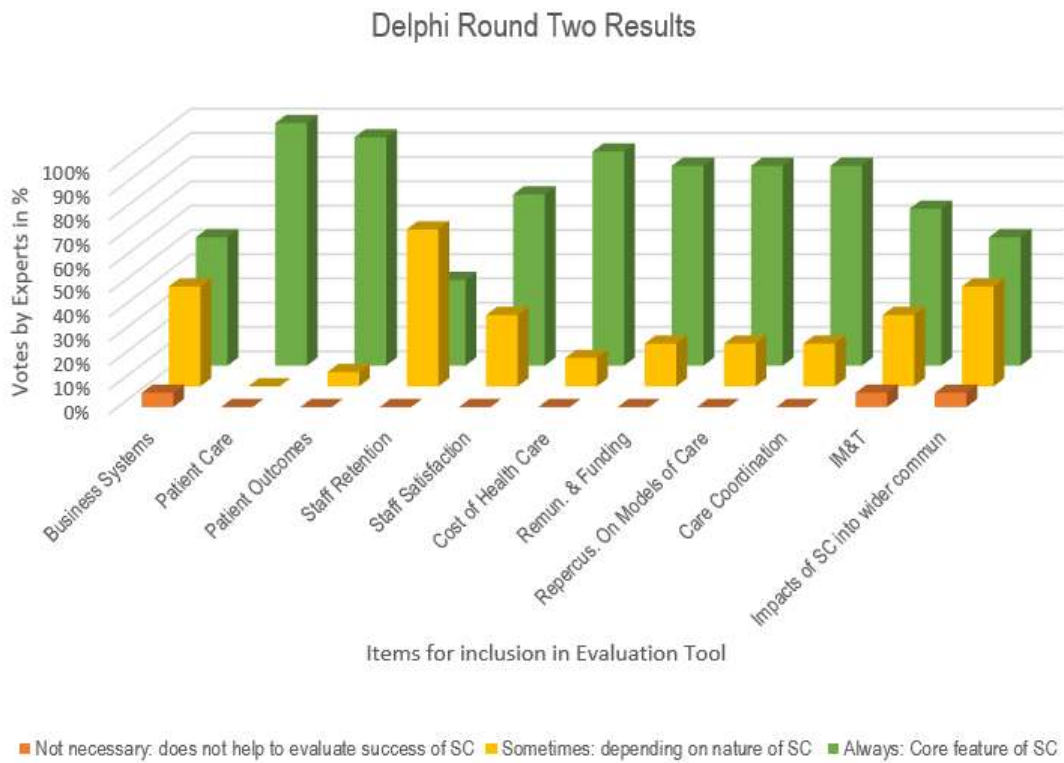


Figure 5-25 Items for Inclusion in Evaluation voted as 'Always a core feature'

Pronyk et al. (2012) considers the following elements (Figure 5-26) as important factors in the evaluation of structural change:



Figure 5-26 Factors to consider in the Evaluation of Structural Change. Adapted from Pronyk et al. (2012)

- Context – the nature of structural change is contextual. The way economic barriers, legal systems engagement and change of cultural norms and power relationships are different in every setting. The evaluation must describe and document context e.g. feasibility studies,
- Multi-sector focus – the evaluation requires input from multiple sectors, it should be cross-disciplinary; however, how governments are organised creates barriers to forming partnerships,
- Complexity – includes several interacting components such as behaviour of implementers and response of recipients which influences delivery and outcomes. These interventions are iterative, non-linear, and adaptive with multi-layered legal, policy and media components requiring a more tailored evaluation framework than traditionally available,
- Timeframes – these interventions require longer time frames for evaluation to identify downstream outcomes and to assess sustainability as their action is normally indirect. However, short term follow-up is necessary in assessment rounds,
- Sampling – the primary unit of assessment becomes the population to which the intervention is deployed; this has time and resource implications for its evaluation,
- Secular change – refers to the mix of local and national policies and dynamic factors affecting the health outcomes of the recipients. Unexpected policy shifts, media forces and economic changes can affect social attitudes, behaviours and health outcomes. Structural change interventions are often confounded by secular change because of the rapid pace of social change and health campaigns to which recipients can be exposed.

- Synergies – structural change interventions have multiple moving parts which make it difficult to identify the ‘active ingredient’ or mechanism of action and the compound effects of the intervention as a whole and as the sum of its parts.

Pronyk et al. (2012) recommend that evaluations of structural change have a detailed impact pathway monitoring, time-series data, qualitative implementation research and comparisons between predicted effects of single interventions and effects of combined efforts. And furthermore, refer to structural change as “interventions that attempt to engage the complex social, economic and political determinants of health as a way of influencing more downstream outcomes...they operate at the level of groups or populations...with the aim of shaping norms, behaviours and health outcomes in the population as a whole” (Pronyk et al. 2012, p.187).

Pronyk et al. (2012) contributes with the basis for an evaluation tool of structural change with elements of the Quadruple Aim which seeks to improve population health, patient experience and provider satisfaction whilst reducing cost of health care and is foundational for a strong primary care system (Park et al. 2018). The CHSD framework supports these principles via its multi-levels as seen in Table 4 Continuation - Frameworks currently in use of Chapter 2.

## **5.8 Qualitative Findings**

This section presents data extracted from the free text fields offered to participants in round 2 of the Delphi study organised into themes. These fields were not compulsory in the completion of the questionnaire.

### **5.8.1 Stakeholders**

The tool should accommodate consumer perspectives and expectations. Shareholder management is an important part of the evaluation. Multiple levers to drive change are necessary and these need to be iteratively applied. Structural change should lead to an improvement in

communication, increased engagement and team care delivery. Allied health practitioners are seldom asked to be part of structural change due to the fragmentation in the health system.

The health care workforce must be considered broader than just doctors and nurses for it to achieve optimal primary care results. However, vested interests do pollute collaboration. Allied health practitioners for example, should be involved in the evaluation of structural change.

For the consumers, if consumer focused health care is not one of the outcomes of structural change then the process was a waste of time. Consumers are normally well versed and add a less medical centric view to the discussion. The type of consumer involvement is important, professional consumers are often engaged but not so much the common person. The average provider usually wants to revert to the way it was, it is preferable to involve change agents rather than those who oppose the change.

Consumers cannot be excluded from the evaluation process, they are indicators of health system improvement on the health outcomes that matter to them. Stakeholders must be included considering their geographic location and vulnerable populations and any vested interests must be declared. Structural change in primary care has implications beyond health, for example, flow on effects can be exacerbated in rural and remote areas e.g. the introduction of the NDIS caused a shift in allied health care workers from primary and Aged care causing gaps in services. This highlights the importance of a thorough understanding of context in the evaluation of structural change.

### **5.8.2 Interdisciplinary Dynamics**

Silos have been characteristic in the health system. Health professionals prefer to understand the benefit of structural change as part of their readiness to cooperate with the structural change initiative. Ideally, sharing work and information on patient care is important for the health care

workforce to be engaged. Vested interests whether financial, personal reputation and power must be lie down for structural change to successfully achieve its purpose.

### **5.8.3 Inter-Sector Dependencies**

A definition of structural change should reflect changes in the relationships among the dimensions of structural change along with dependencies with other sectors such as housing, education, Aged Care and Disability services. In Primary Care for example, the Health Care Home (HCH) has demonstrated the challenge of implementing structural change, particularly trying to achieve the change during a trial whilst the rest of the system continues as usual.

### **5.8.4 Outcomes for Evaluation**

More research is required to investigate the measures and indicators of the evaluation tool for structural change. The items studied here provide the skeleton for the tool but measurements and performance indicators are the critical aspect for the evaluation of structural change. Among these, health outcomes and experience of care should be central to future studies.

Outcomes of structural change are wider than just patient outcomes, therefore, broader perspectives than traditional medical care are required in Primary Care.

Some of these include equity effects for patients which account for some population groups, people with some conditions, people in different geographic settings, different ages all of which are impacted differentially. This also applies to staff e.g. women, Aboriginal staff, younger or older staff, or staff in different geographical settings who are at the receiving end of intended or unintended impacts.

### **5.8.5 Context**

Experts offered in round 2, additional items to the context of structural change. These are listed below.

### **5.8.5.1 History**

The definition and evaluation of structural change needs to include history. Past **endeavours** of change, success and failures along with philosophies and previous initiatives are part of the history that if analysed provides important insights for the successful implementation of structural change.

### **5.8.5.2 Relational change**

The need for relational change in the study of structural change was mentioned, however, there was not elaboration in this answer. A third round would have allowed the investigation of this topic.

### **5.8.5.3 Not a True System**

In true systems, changing one component always has impact on other components of the system. However, the health system is not a true system but rather a group of policies and practices with no integration. Incentivising GPs for example, may not negatively impact other components of the system. A topic for further research, the flow on effects of structural change are certainly unknown and this theory could provide a good start of the investigation. One expert added “flow out into the community is often slow” (e17). This could explain how some of the aspects of structural change are complex to study e.g. its sustainability.

## **5.9 Conclusion**

Structural change, as complex as it is, does require several rounds within a Delphi study. The findings of Round Two reaffirmed the complexity of its nature and evaluation. The need to know the type of change and the subjectivity of some of the concepts involved proved to be a struggle for the experts in the Delphi study.

This chapter offers a definition of structural change useful for its evaluation with caveats. Items

of consensus in Round Two of the Delphi study in combination with the recommendations from Pronyk et al. (2012) and Blankenship, Bray and Merson (2000) form the basis for the adaptation of the framework and prototype development in the next chapter.



## **Chapter 6 The Evaluation Tool**

The previous chapter concludes with the list of items selected to form the basis of a tool for the evaluation of structural change in primary care. These items represent the findings of the Delphi Study and are the consensus of experts.

This chapter focuses on the development of the tool for evaluating structural change in primary care. The chapter is divided into smaller sections that deconstruct the tool to explain its parts and its adaptation from the CHSD framework (Masso, Quinsey & Fildes 2016). At the end of the chapter, a prototype, a working version of the framework is presented using as example how a General Practitioner would use the evaluation tool in everyday practice.

### **6.1 Development of a Tool for the Evaluation of Structural Change in Primary Care**

Based on the extant literature and these findings, this chapter presents an authoritative framework on which to create a tool for the evaluation of structural change and develops a prototype of such a tool for use in primary care. The chapter begins with an assessment of existing frameworks used to evaluate health system performances and assesses their suitability for the purpose of evaluation in structural change. While none include all the items identified in the Delphi study, the most appropriate of these is identified and then adopted for use.

#### **6.1.1 Frameworks to Measure and Evaluate Health System Performance in Australia**

How the government, communities, individuals and private organisations approach care reflects the way health is conceptualised. Frameworks help guide health policy and health services delivery and must evolve as population change and research advances (Birks, Davis & Chapman 2015).

In Australia, the search for a framework to measure the performance of the health system has been constant as depicted back in chapter 2 Figure 2-9 Changes in Performance Framework 1987-2017 Source: Commonwealth Department of Health 2017. Since 1987, health information and statistics on the health and welfare of Australians has been collected with the purposes of improving the health system. However, in structural change, measurement has been an elusive term as it has been its definition. An approximation of how outcomes would materialise and how long outcomes are to be expected from a structural change investment is a subject that requires more research.

Expert 33 stated:

“the measure of outcomes needs to be carefully considered beyond the traditional PH measures”  
(e33)

In primary care, poor health outcomes and higher costs have been related to ineffective chronic disease management for which care planning should be proactive, via the use of consistent clinical care pathways, instead of reactive (Swerissen, Duckett & Wright 2016).

Experts brought up a good example of reform in primary care namely the Health Care Homes (HCH) initiative. This research will refer often to this example throughout the rest of the text.

The outcomes for the HCH initiative, which was initially launched as structural change, include indicators that some authors have studied in the quest to find linkages between investment made and outcomes. Some of these studies have been compiled in Table 2 in Chapter 2.

## 6.1.2 Requirements for the Evaluation of Impacts of Structural Change

To evaluate the impact of structural change is necessary to attribute a specific change in structure to a specific change in performance; therefore it is necessary that policy makers commit to feedback and evaluation (Pollitt 2009). Section 2.4.3.1 includes considerations for the evaluation of the impacts of structural change. The complexity of connecting inputs to outcomes for the purposes of evaluation in structural change was discussed.

Experts spoke of some of these challenges:

“most participants in the health system have only ever known one funding model. Most providers in the health system are disconnected from principles of population health” (e14).

“Citizens are the recipients and partners in primary care delivery and thus have an important role in evaluating its impacts” (e22).

Expert 14 concurred that increased accountability comes through consumer empowerment.

Another expert stated:

“...politically, and sadly, change and health reform is often tied to election cycles for quick announcements and quick glory” (e17).

Jolley et al. (2008) asserts that political commitment, monitoring and evaluation, appropriate workforce and resources are key to ensuring a change is sustainable and highlighted that with a four-year election cycle, the re-education of people in power was required.

Another expert referring to primary care stated,

“Health Care Homes is a good example of the challenge to implement structural change, especially when trying to achieve the change in a trial, because the rest of the system isn't changing” (e20).

Results of the Delphi study indicate that patient care, patient outcomes, cost of health care, remuneration and funding, and care coordination are outcomes of structural change rated to be always a core feature of structural change evaluation.

Thus, the requirements for the evaluation of structural change in primary care are wide and varied and should be a subject of deeper investigation.

### **6.1.3 Existing Frameworks used in Evaluating Complex Interventions**

Some of the shortcomings of current frameworks for the evaluation of complex interventions included lack of intervention development detail, focused only on behaviour change, confusing terminology and illogical steps (Wight et al. 2016). Section 2.4.3.3 of Chapter 2 expands on these challenges.

Methodological practices are also an issue. Few existing frameworks included a logic model, health impact analysis framework, theory of change, systems theory or process evaluation framework as illustrated in tables 6-2 and 6-3 (Asada et al. 2017).

The WHO health systems Building Blocks framework consists of six building blocks:

1. Service delivery
2. Health workforce
3. Information
4. Medical products including vaccines and technology
5. Finances and leadership

## 6. Governance facilities including health system resources investment

These Building Blocks were not intended as an evaluation tool, but rather as a guide to investment of resources into health systems.

The framework, however, has received criticism because of its inability to analyse system impacts that are inherently dynamic, inter-linked and complex (Mounier-Jack et al. 2014).

Hoffman et al. (2012) found 41 health systems frameworks and half of them focused on portions of the health system rather than the whole.

In primary care, tools that assess infrastructure include the National Committee for Quality Assurance (NCQA). The NCQA is an American certifying body for practices that adopt the patient-centred medical home model PCMH to improve quality of care. This incentivises practices with bonuses and payment's boosted through Medicare.

However, for many practices, involvement is based on financial incentives instead of the pursuit of higher quality care. The PCMH is viewed more as a certification (Hahn et al. 2014). The PCMH's equivalent in Australia is the Health Care Home (HCH) which trial had a false start and had to be extended because of low patient numbers recruited.

The ten building blocks of high-performing primary care assessment serve as a roadmap for practices aspiring to become high-performing patient-centred medical homes. Its main focus is on elements under the control of the practice; however, financial external reform is necessary to support the framework (Bodenheimer et al. 2014).

Health systems are multi-layered, sophisticated, nonlinear and resistant to planned change

because of ingrained practitioner silos, policies, guarded interests, diversity in culture: all of which add to complexity of health systems (Hoffman et al. 2012).

Frameworks found in the literature, their strengths, weaknesses and opportunities for improvement were compiled in Chapter 2 on Table 3 Frameworks currently in use. However, it was difficult to identify a multi-layered framework that could accommodate the evaluation of structural change in primary care.

The desirable items of a framework for structural change evaluation are listed in the next section.

#### **6.1.4 Items of a Framework for the Evaluation of Structural Change in Primary Care**

Unless an evaluation framework prompts its users to be accountable in the delivery of the expected outcomes of structural change set out by the original policy, structural inertia can easily set in (Hannan & Freeman 1984).

The items of the framework presented below will trigger a process of reflection on outcomes and replication and assist those managing the initiative to seek help early in the process if they perceive the outcomes are far-fetched. As explained in the challenges for the evaluation of structural change in section 2.1.13 of Chapter 2 and 7.6 of Chapter 7, components required for the framework include:

- Structural change vision – the framework will incorporate a notion of structural change which will act as the ‘vision’ of the initiative to be communicated often to all involved. Acknowledgement that structural change is being implemented, not just any regular program or project, will prepare the minds and resources to embrace it.

- Policy – the Delphi study informs that structural change is top-down and starts with a policy handed down by a government. It is important that all included understand, and have an expectation of, how the policy will alter the way things are done.
- Context awareness – the importance of context in the understanding of structural change was established earlier in the section ‘Context in Structural Change’. The outcomes of the structural change will vary widely according to the context in which the change is implemented e.g. patient response to structural change could be different in Western Sydney compared to the Northern Beaches area of Sydney because the social and economic contexts, for example, are different.
- Delivery – answering the question, ‘what did you do’ will capture every effort and how this was done according to the brief of the policy that initiated the structural change. This has great relevance for its replication.

Outcomes and impacts – this section will answer the question ‘how did it go’.

Ultimately, the main reason for structural change is to improve patient outcomes.

Therefore, the framework will have a section dedicated to the explanation of the outcomes and impacts of structural change. These specifically focus on the improvement of health service delivery and the subsequent patient outcomes.

- The Delphi study found that providers and staff can influence the success of structural change. A framework that recognises the engagement of providers and staff and the challenges during implementation would facilitate the success of structural change. Furthermore, policy structures, processes, networks and relationships will also be impacted by structural change; therefore, these will need to be included in the evaluation framework for structural change. In regard to cost-related outcomes and impacts, the aim of structural change should be to make patient care cost-effective. By including this element in the evaluation framework,

users of the framework will reflect on the variations of the cost of health care that are a result of the structural change efforts.

- Sustainability – according to Hawe et al. (1997), health outcomes are the result of the magnitude, penetration and the sustainability of the effect of an intervention. Sustainability is the capacity to maintain and continue these effects (Hawe et al. 1998). These factors are inherent to structural change success. A change that cannot be maintained; where its recipients and beneficiaries return to normal after the intervention is implemented is not a genuine structural change. Consequently, those involved will benefit from answering the question; can the structural change keep going? With regular projects and programs if funding ceases the intervention will probably cease. Structural change, however, has radically changed the way a service is delivered and funded. To reverse or amend its effects, a second policy from the government would be required. This was the case with the Health Care Home (HCH) model. The number of patients enrolled by the initiative was lower than the number set out by the policy. Two years later, another policy came into place to lower this number and to assist with its sustainability.
- Generalisability – the framework will prompt users to ensure their efforts can be replicated somewhere else. Structural change is a large, strategic effort and lessons learned can be shared across the nation, saving tax-payers funds and efforts whilst the next round of recipients could benefit from hindsight and expertise of those who were the pioneers.

These elements have not been explicitly set out in previous research for primary care. Chapter 2 described how there are separate characteristics for primary care, evaluation of health services, and structural change; however, these were not found combined in the literature.



Findings on these elements are included below.

### **6.1.5 Vision of Structural Change**

This study found that 71% of the experts agreed that the concept of structural change is not well understood in health care and 100% of experts agreed about its complexity. It can be seen from the Delphi study that the purpose of structural change is one of re-orientation, re-organisation, re-focus, changes in the way interactions with the system and consumers and providers take place:

- Expert 14 (health practitioner leader of opinion) called out a shift in the model of care that delivers health care:
- “reorientation of the predominant model of care that underpins health care delivery”
- The expert added that structural change can contribute to diminishing GPs working in silos and has the potential to integrate GP activity for the benefit of the health system:
- “Structural change in primary care is put in place 'to disrupt the current core business'... We actually do need to change what GPs do in isolation for the benefit of the rest of the health system” Expert 14 (health practitioner leader of opinion)
- Expert 17 (health practitioner leader of opinion) “Structural change can be about ...throwing money at reform is a carrot but does not necessarily change behaviour. There needs to be a more unified approach to PHC and links to tertiary care and back to PHC/Practice. Sharing workloads with other HPs such as nurses can be cost efficient and effective and add to the business case as GPs can see other patients and generate more income. Also, change may involve some change in roles, sharing or relinquishing power to reduce siloed health care. Needs to be

patient oriented rather than HP oriented”

- Structural change “mostly it is about a 'new program' (on top of existing) or a restructure of lines of accountability” Expert 34 (executive).
- Structural change “Needs a shared vision supported by clinical and political leadership” Expert 14 (practitioner).

However, other experts considered that without a definition, structural change was difficult to discuss:

“Given structural change is poorly defined hard to discuss the issue with any detail” Expert 19

“I think the definition above could be improved. The examples are clear, but they are only examples and the text is very conceptual and brief. An expansion to specify some characteristics and/or criteria would be helpful” Expert 23 (academic).

These views support the fact that the vision of structural change is complex and often misunderstood.

### **6.1.6 Policy and Structural Change**

Experts agreed that structural change involves changes in policy. However, whether the policy that originated structural change is well understood by its recipients is a matter for future research.

Experts added:

“Effective structural change requires alignment of good policy with strong political support and intent. Change is often complicated by political compromise that inevitably makes the health system more complicated.”

Linking policy to politics was quite common when talking about structural change in health care.

Another expert thought that was not always the case:

“It has been my experience that significant structural reform can occur within the system without policy and financing reforms - the example of the Institute for Urban Indigenous Health in SEQ demonstrates this.”

It can be concluded that an understanding of the policy originating structural change is paramount for its success.

### **6.1.7 Context in Structural Change**

Context is an important component of structural change often under-utilised perhaps because it has not been yet defined for the study of structural change in health care. Context is frequently assumed and hard to use as there are no guidelines to incorporate it in the evaluation of structural change in primary care. Therefore, context has been analysed and used in several ways specific to each author. These include the authors’ background and previous exposure to the notion of context.

Chapter 7 of this thesis discusses context in more detail and offers a definition. This chapter refers to what the experts in the Delphi Study thought about context.

Round One of the Delphi study dedicated a whole domain called ‘environment/context for structural change in health care’. Experts agreed that changes in the economy and political climate drive structural change. However, there was no consensus amongst experts about ‘culture’ being conducive to the success of structural change.

One of the experts implicitly speaks about context:

“As you say above, structural change is multidimensional. It involves behavioural change and is longitudinal in approach. It is not a quick fix. Behavioural change can be threatening for some people, so you need to make sure they know why this is happening and who is there to help with the change. Politically, and sadly, change and health reform is often tied to election cycles for quick announcements and quick glory. This can set planned changes for failure. Change needs to be well planned, forward focused and those implementing need to be brave, review, replan strategy to complete their reforms” Expert 17 (health practitioner leader of opinion).

Others mentioned issues related to context:

“GPs in particular are highly resistant to structural change” Expert 19 (health practitioner leader of opinion)

“The IT systems in General Practice are not currently structured to support the management of cohorts of patients per Health Care Homes” Expert 20 (executive)

“There is a significant inertia in general practice and resistance to change. The medical peak bodies are partly responsible for this inertia” Expert 20 (executive)

“By definition, structural change is disruptive of the structure in which some individuals and groups have vested interests, be they financial, personal reputation and power, or status. For structural change to be successful, some must give up their current preferred positions” Expert

22

“Consumers should have major roles (in structural change) but current structures usually prevent this from occurring” Expert 22 (academia)

“To be successful, structural change requires well thought out stakeholder consultation and iterative implementation utilizing on data to measure a range of desired outcomes (and not outputs)” Expert 26 (policy)

“Structural change requires an alignment of stakeholder focus on a shared objective. In healthcare that should be patient-centric” Expert 28 (policy)

“...the requirements for structural change will also depend on the services, infrastructure, philosophies and culture that have evolved over decades. This also emphasises the care that must be taken when making international comparisons as we have different philosophies, health insurance and payment schemes, limitations on comparable data, and even the boundaries defined for a health system” Expert 28 (policy)

“Primary care is part of the health sector ecosystem; it is not possible to change one part of the ecosystem without needing to adjust other parts” Expert 34 (executive)

“There needs to be multiple levers to drive change and they need to be applied and reapplied”  
Expert 14 R2 (health practitioner leader of opinion)

“Whilst decrees re-funding and models come from Gov/Doh, most structural change is driven by patient demand, wanting services they heard about in media and by practical work initiated by PHNs. The AHP engagement with PHNS is still in early stages and many do not know how to link in to support and new programs that might benefit AHP business and care regimes” Expert 17 R2 (health practitioner leader of opinion)

Comments on the role of allied health practitioners in the evaluation of structural change:

“Vested interest will always pollute these discussions and sometimes a call needs to be made.

But these voices need to be heard for many reasons. They generally do add value” Expert 33 R2 (health practitioner leader of opinion).

“Health professionals also need a better understanding of the role of other disciplines and how they work to an MDT- breakdown silos and share work & info re patient care before they launch into any change program. The need to understand the benefit for them often before they will cooperate with any change program” Expert 17 (health practitioner leader of opinion).

#### **6.1.8 Delivery (What was done?)**

This element of the framework refers to “what was done and how it was done” and compares it to what was planned (Thompson et al. 2012) p.13.

Delivery can be affected by policy and regulations as pre-existing structures in a system:

“Successful structural change is dependent on the services and infrastructure that have evolved over time. The Commonwealth of Australia Constitution is one of the fundamental influences of the way health care services are structured, funded and delivered in Australia. Section 51 prohibits the Commonwealth from any form of civil conscription in terms of medical and dental services (where both legal and practical compulsion may offend the caveat). Structural changes for health reform by the Commonwealth have always had this limitation” Expert 28 (policy).

#### **6.1.9 Impact (How did it go?)**

This element of the framework prompts the practitioner to ask, ‘how did it go’. How their efforts manifested as outcomes. Impact reflects whether the activities performed during delivery were

successful at reaching the desired objectives (Masso, Quinsey & Fildes 2016). According to Hawe et al. (1997), health outcomes are the result of the magnitude, penetration and the sustainability of the effect of an intervention.

One of the experts offered a view on impacts as roles of health practitioners evolve to achieve desired outcomes:

“For me, the critical concern is to preclude fragmentation of the role of the GP, particularly for example in respect of continuity of care, by allowing other Health professionals to take over traditional GP roles and work independently of a team. Nurse Practitioners are wonderful in GP practices and in community nursing roles (e.g. Silver Chain in WA) as part of a team. NPs in shopping malls are a mistake. Pharmacists are not trained as Clinicians, let alone diagnosticians and are a travesty when claiming that role - 'Clinical Pharmacists'. Except in rare situations, we need GP lead teams with respectful communication to get best outcomes for patients” Expert 33 (health practitioner leader of opinion).

Furthermore, often, impacts can be difficult to link back to the initiative being assessed:

“In true 'systems' (i.e. according to Systems Theory) change in one component will always have an impact on other components of the system. But the Health system is not a true system - it's perhaps better conceptualised as a bunch of policies, practises, etc. in no way completely integrated, just as your definition suggests. So, paying GPs more to preserve the best of GP would not negatively impact on other components and indeed is likely to impact positively. And because it's not a true system other (non-financial) changes may or may not affect other components either” Expert 33 (health practitioner leader of opinion).

### **6.1.10 Sustainability (Can it keep going?)**

Sustainability is the capacity to maintain and continue these effects (Hawe et al. 1998). These factors are inherent to structural change success. A change that cannot be maintained and its recipients and beneficiaries return to normal after the intervention was implemented is not a genuine structural change. One academic added that sustainability is a very subjective term and therefore it is difficult to assess structural change without knowing the specific change involved. This element of the framework asks, ‘can the structural change keep going?’. This question considers not only the improvements made by the initiative, but also the techniques and approaches used during the initiative. Sustainability is closely related to capacity building which seeks to embed structural change through increased resources, capabilities and skills (Thompson et al. 2012).

### **6.1.11 Generalisability (Can it be replicated?)**

This element of the framework will prompt users to ask, ‘can it be replicated?’ to ensure their efforts can be reproduced somewhere else. Lessons learnt can be used by other practitioners and whether it is scalable e.g. reproduced at a national level (Thompson et al. 2012). Structural change requires strategic effort and lessons learned can be shared across the nation saving tax-payers funds and effort whilst the next round of recipients could benefit from hindsight and expertise of those who were the pioneers.

## **6.2 Framework for the Evaluation of Structural Change in the Primary Care System**

Findings of the Delphi study assisted with the adaptation of the CHSD framework, this section will present the adapted framework under this light. As proposed in Section 2.1.6 of Chapter 2, the Quadruple Aim is pivotal for the improvement of primary care on four domains: patient experience, provider satisfaction, population health and cost of health care. These four domains



must, therefore, be considered in the lead up to the adoption or adaptation of a tool for the evaluation of structural change in primary care.

The proposed tool will address these four domains.

### **6.2.1 The Framework and the Quadruple Aim**

Given the need to assess structural change across these four domains, the evaluation of structural change in primary care requires a framework that includes the Quadruple Aim and accommodates the nature and peculiarity of structural change along a timeline as its impacts are normally seen over time. To this effect, the adapted framework sits within a timeline and includes four levels of analysis: patient, provider, system and cost of health care consistent with the Quadruple Aim. Practitioners using the framework are compelled to consider structural change at these four levels whilst elements of the ten building blocks are embedded in this analysis.

Structural change effects need to be studied on a timeline with comparisons made along that timeline. These results will indicate whether the intervention needs to be modified to yield improvements or if the investment of public funds would fare better in a different venture that could readily improve patient outcomes.

Headspace (Ellis, Churruca & Braithwaite 2017; McGorry, Bates & Birchwood 2013; Muir et al. 2009; Rickwood, Van Dyke & Telford 2015) was funded to restructure part of the mental health system and has successfully lead to young people seeking care and talking more openly about their struggles. However, the full extent of structural change can take a whole generation before its impacts are completely seen.

### 6.3 Adaptation of the CHSD Framework

Of all the frameworks found in the literature, the CHSD framework (Masso, Quinsey & Fildes 2016) is the only one that incorporates three levels and six domains that are comprehensive and adaptable to the findings of the Delphi study. The CHSD evaluation framework principles have been used in numerous national program evaluations (Thompson et al. 2012).

Table 3 and Table 4 in Chapter 2 provide a comparison of the different tools available in the literature. It can be seen that the CHSD framework offers a unique principle with stakeholder multi-level analysis fitting for the evaluation of structural change in primary care.

The results of the Delphi study were analysed against the CHSD framework depicted in Figure 6-1. From that analysis it was found that further adaptations of the CHSD were required.

Components such as context, a vision for structural change, and understanding of the policy that generated it are important in the study of structural change.

EVALUATION HIERARCHY	What did you do? SERVICE/PROJECT DELIVERY	How did it go? SERVICE/PROJECT IMPACT	Can you keep going? SUSTAINABILITY	What has been learnt? CAPACITY BUILDING	Are your lessons useful for someone else? GENERALISABILITY	Who did you tell? DISSEMINATION
<b>Level 1</b> Impact on, and outcomes for, <b>consumers</b> (patients, families, carers, friends, communities)						
<b>Baseline, Process &amp; Outcome Indicators</b>	Plans, reports, administrative data Qualitative data from stakeholder interviews	Administrative data (e.g. on client outcomes) Patient/client experiences survey Carer experiences survey Standardised tools for measuring consumer outcomes	Sustainability Tool	Capacity Building Tool	Generalisability Tool	Log of dissemination activities
<b>Level 2</b> Impact on, and outcomes for, <b>providers</b> (professionals, volunteers, organisations)						
<b>Baseline, Process &amp; Outcome Indicators</b>	Plans, reports, administrative data Qualitative data from stakeholder interviews	Surveys of attitudes, confidence, knowledge and skills of providers Interviews and focus groups with providers	Sustainability Tool	Capacity Building Tool	Generalisability Tool	Log of dissemination activities
<b>Level 3</b> Impact on, and outcomes for, <b>the care delivery system</b> (structures and processes, networks, relationships)						
<b>Baseline, Process &amp; Outcome Indicators</b>	Plans, reports, administrative data Qualitative data from stakeholder interviews	Administrative data Interviews with leaders and managers Organisational self-assessment tool	Sustainability Tool	Capacity Building Tool	Generalisability Tool	Log of dissemination activities

Figure 6-1 Centre for Health Service Development (CHSD) evaluation framework (Masso, Quinsey & Fildes 2016)

Of the other tools in the literature (as elaborated in section 6.1.3), the CHSD framework initially developed for the evaluation of regular projects and programs (Thompson et al. 2012) was found most suitable for adaptation for structural change evaluation.

According to Masso, Quinsey and Fildes (2016), the CHSD framework was first created for the Illawarra Coordinated Care Trial to evaluate care coordination for older people living at home and at risk of falling or having complex medical and social problems and in need of services from multiple health providers. The CHSD framework developed three levels of evaluation:

Level 1: consumers

Level 2: providers (such as health practitioners, nurses, allied health)

Level 3: the care delivery system

The CHSD framework was further developed and gained three more elements of evaluation after being used to evaluate a palliative services model. These elements are capacity building, sustainability and generalisability. In the adapted framework for structural change, capacity building and sustainability have been merged as these have been used interchangeably before according to Hawe et al. (1998).

The multi-levels in the CHSD framework were easily adapted as necessary for the analysis of context and evaluation of structural change. Since context awareness is a crucial element in the understanding of structural change, it was added to the CHSD framework. Context can then be examined at the three levels of the framework and a fourth was added to include cost of health care and embed awareness of whether the intervention will increase, decrease or maintain the cost of health services as a result of the structural change. Context analysis offers rich information within the evaluation and foster investigation of linkages between delivery and impacts.

For the study of structural change, this research added 'context' and 'cost of health care'. These

elements are important because context in relation to culture and political climate is highly relevant to the success of structural change. On the other hand, cost of health care is most probably one of the reasons why structural change happens in the first place - to pursue a delivery system that is more cost-effective and is successful in improving patient outcomes.

The CHSD evaluation framework was adapted for structural change with insights from expert opinions collected through the Delphi study. As such, the elements of context and timing in the form of timeline were added.

As stated earlier, this study found that context is central to structural change success. Expert 26 stated “to be successful, structural change requires well thought out stakeholder consultation and iterative implementation utilizing on data to measure a range of desired outcomes (and not outputs)”.

This research has added the element of context awareness to the framework, which is further explained in section 7.2 of Chapter 7. The vision of the structural change pursued was also added as it was found, although at a minor scale, that understanding by the recipients of policies and expectations is key to the success of structural change.

<b>EVALUATION HIERARCHY</b>	Context Awareness Structural incentives can force people to stop taking risks e.g. fines, jail to stop drink driving (Blankenship et al. 2000)	<b>What did you do? SERVICE/PROJECT DELIVERY</b>	<b>How did it go? SERVICE/PROJECT IMPACT</b>
<b>Level 1</b>			
<b>Baseline, Process &amp; Outcome Indicators</b>		Plans, reports, administrative data Qualitative data from stakeholder interviews	Administrative data (e.g. on client outcomes) Patient/client experiences survey Carer experiences survey Standardised tools for measuring consumer outcomes
<b>Level 2</b>			
<b>Baseline, Process &amp; Outcome Indicators</b>		Plans, reports, administrative data Qualitative data from stakeholder interviews	Surveys of attitudes, confidence, knowledge and skills of providers Interviews and focus groups with providers
<b>Level 3</b>			
<b>Baseline, Process &amp; Outcome Indicators</b>		Plans, reports, administrative data Qualitative data from stakeholder interviews	Administrative data Interviews with leaders and managers Organisational self-assessment tool

Figure 6-2 Adaptation of the CHSD Framework

The adapted framework below allows for the effects of structural change to be ‘gauged’ overtime on four dimensions including the cost of health care. Expert 33 stated “the measure of outcomes needs to be carefully considered beyond the traditional PH measures”.

A simplistic way of depicting the CHSD framework adapted for use with structural change is as follows:

Hierarchy	Evidence	What is the Context for Change?	What did you do? (delivery)	How did it go?		Can you keep going? (sustainability)	What has been learned? (capacity building)
				Timing:			
				Short Term Impact	Long Term Outcomes		
Impact on, and outcomes for, <b>patient/consumers</b>	Vision & policy has been understood	Context for <b>patient/consumers</b>	Activities at <b>patient/consumer</b> level	Results obtained at <b>patient/consumer</b> level		Sustainability at <b>patient/consumer</b> level?	Learnings at <b>patient/consumer</b> level
Impact on, and outcomes for, <b>providers</b>		Context for <b>providers</b>	Activities at <b>provider</b> level	Results obtained at <b>provider</b> level		Sustainability at <b>provider</b> level?	Learnings at <b>provider</b> level
Impact on, and outcomes for, <b>health</b>		Context for <b>health system</b>	Activities at <b>health system</b> level	Results obtained at <b>health system</b> level		Sustainability at <b>health system</b> level?	Learnings at <b>health system</b> level

<b>system</b>						
Impact on, and outcomes for, <b>cost of health care</b>		Context for <b>cost of health care</b>	Activities related to <b>cost of health care</b>	Results obtained related to <b>cost of health care</b> (↑, ↓ or none)	Sustainability at <b>cost of health care</b> level?	Learnings at <b>cost of health care</b> level

Table 17 Structural Change Framework as adapted from CHSD framework

From this outline, the wheel of the structural change framework was developed as a set of steps for practitioners to complete each level of the hierarchy provided their information systems have the capacity to provide this information and maintain a trail that facilitates quality improvement as the framework is iterative in nature. For some entities, some of the levels may be under-developed and a trail can help them prepare a plan to attend to areas that remain unaddressed by an agreed deadline.

Figure 6-3 displays the CHSD-adapted framework as a wheel that represents an iterative process which includes checking recipients' understanding of the vision and policy that gave birth to the structural change.



Vision of Structural Change	Understand Policy	Develop Context Awareness	Describe Delivery	Explain Impact	Determine Sustainability	Justify Generalisability
Not all change is structural. The vision and notion of structural change needs to be clear. Ask if the change is deep enough to affect structure and acknowledge its implications on 4 levels: patient/ consumer, provider & staff, care delivery system and cost of health.	SC is originated by a government policy. The policy needs to be understood and its outcomes clear to all involved and for all 4 levels: patient/ consumer, provider, system and cost-level outcomes	Develop context analysis asking where, who, what and when. Study the location, patient profile, what is happening at the political, economic and social environment, what other change had taken place and time of day/season, timing of change within the organisation's life cycle, at 4 levels: patient/consumer, provider/staff, system and cost of health care e.g. demographics, health literacy, resistance to change in the past, cost implications, etc	This question assumes that delivery was done as per brief in the policy. Describe 'what did you do?' at each level: patient/ consumer, provider/staff, system and if there was to be intervention at cost-level.	This question assumes the intervention produced outcomes. Explain 'how did it go?' at 4 levels: did it benefit the number of patients prescribed by the policy? Are providers/staff engaged and driving the change forward? Has the cost of health care increased/diminished/ remained equal?	This question assumes the structural change efforts can be maintained. Determine 'can it keep going?' at 4 levels: patient/ consumer, provider/staff, system and cost of health care and list the implications for outcomes to be sustained over time.	This question assumes the benefits of the structural change can be taken to other settings, areas of the country or even other industries. Justify how the structural change can be replicated and implications at the 4 levels: patient/ consumer, provider/staff, system and cost of health care.

Figure 6-3 Evaluation Framework for Structural Change in Primary Care, CHSD framework adapted from Thompson et al. (2012) and Masso, Quinsey and Fildes (2016)

The framework was initially adapted as a static, point in time evaluation tool in **Error!**

**Reference source not found.** Evaluation Framework for Structural Change in Primary Care, adapted from Thompson et al. (2012) and Masso, Quinsey and Fildes (2016). This figure has been added online for easier readability at <https://bit.ly/3oaRz15>.

However, Table 17 shows that structural change implies short and long term outcomes, and as mentioned by Delphi study participants, timing is an important element in the evaluation of structural change as its effects are not normally immediate. Therefore, the tool to evaluate structural change needs to be more dynamic.

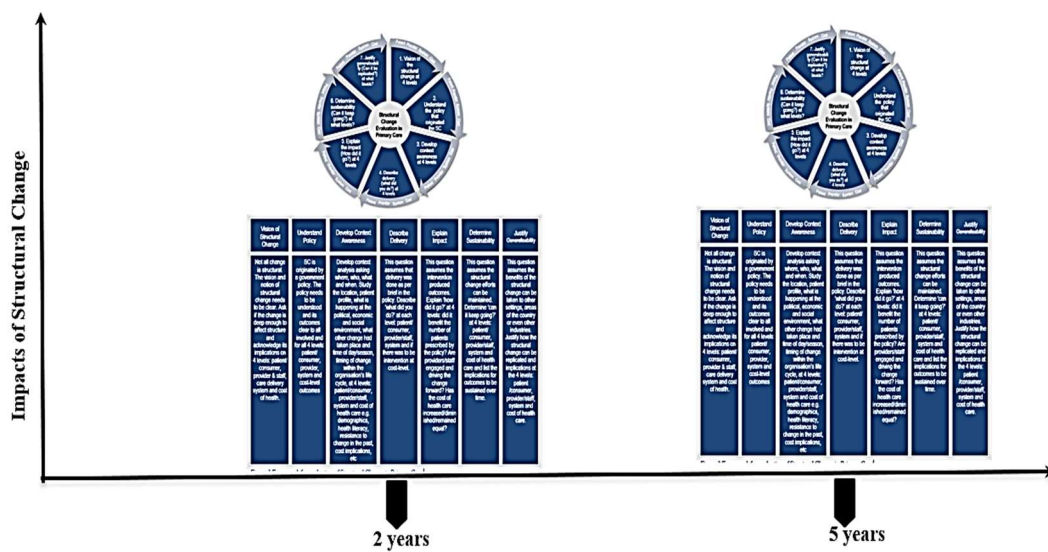


Figure 6-4 Framework for Structural Change Evaluation in Primary Care applied at 2 years and 5 years

This is why the final framework sits over a timeline as observed in **Error! Reference source not found.** (This figure has been added online for easier readability at <https://bit.ly/3oaRz15>).

Application of the tool is prompted at the two-year mark for monitoring and to allow the adjustment of structural change interventions guided by preliminary findings from the period the intervention has been active. At the five-year point, the framework needs to be applied again for a comprehensive evaluation of the structural change intervention.

## 6.4 Prototype Design

According to Masso, Quinsey and Fildes (2016) an evaluation framework should contribute towards the understanding of an intervention’s goals and objectives whilst facilitating the documentation of outcomes and should also serve as a planning tool during the development of the intervention. The prototype for the evaluation of structural change was designed with this prescription in mind.

The prototype is flexible enough to accommodate different health care settings in which structural change takes place. It captures the context, vision (goals and objectives) of the structural change, understanding of the policy prescribing the structural change, and seeks to



understand linkages to outcomes and improvements caused by the change. The nature of the structural change is also explored within the prototype.

#### **6.4.1 Characteristics of the Prototype**

Keeping in mind the characteristics of structural change and the needs of users at every stakeholder level, some of desirable characteristics of the prototype are:

- Flexible for the user to apply at the beginning, middle or end of a process or intervention.
- Comprehensive enough to provide the user with insights toward their intervention, including the strategy necessary for growth and development
- Stratified; giving the user the ability to use parts of the prototype
- Extendable; user can customise the prototype by either collapsing elements not relevant to their intervention or edit required sections
- Doubles as a framework for structural change evaluations in other industries
- Ability to downgrade or upsize as required
- The user can access support on the prototype either to customise or for training on how to use it
- Simple enough to be used by both highly skilled and lay people.

#### **6.4.2 Prototype Development**

A series of steps were taken for the development of the prototype. For illustration purposes, a close examination of one of the steps, the ‘how did you go’ step, is depicted in Figure 6-5:

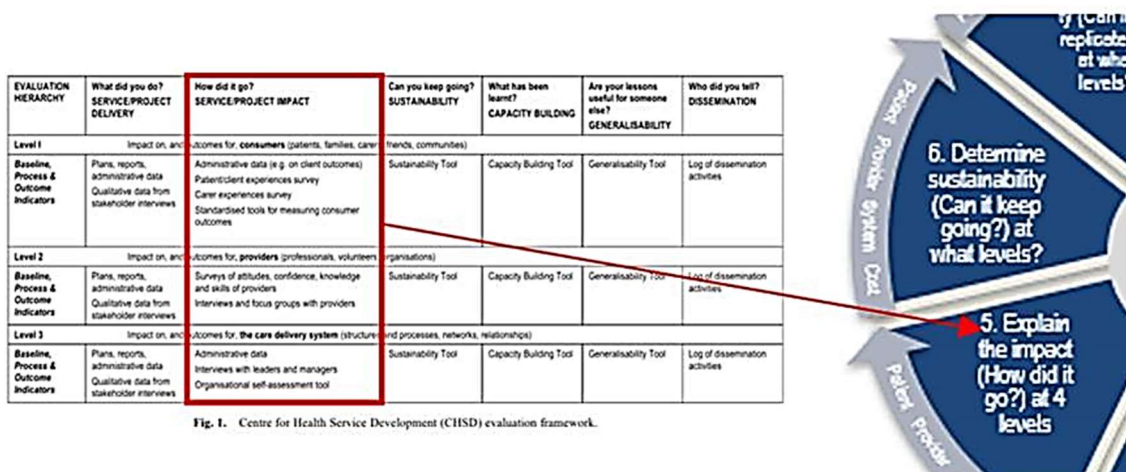


Figure 6-5 Evolution from CHSD framework to prototype: zoom into 'How did it go' step

The prototype aims to be a ‘working’ version of the framework. In practice, the adapted CHSD evaluation framework becomes a tool for the evaluation of structural change in primary care. The stages for development are described below. Figure 6-5 has been added online for easier readability at <https://bit.ly/3oaRz15>.

### 6.4.2.1 Stages of development

The prototype was adapted from the CHSD framework (Masso, Quinsey & Fildes 2016) as it is a three-dimensional framework malleable enough to adapt and deliver to the needs of structural change evaluation. **Error! Reference source not found.** portrays the steps followed in the development of the prototype:

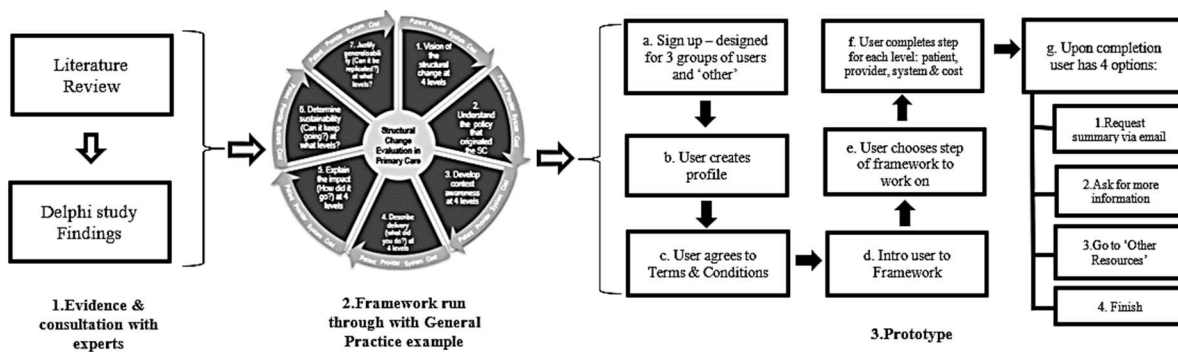


Figure 6-6 Development of Prototype Structural Change Evaluation in Primary Care

A continuation, the three steps depicted in **Error! Reference source not found.** will be explained. This figure has been added online for easier readability at <https://bit.ly/3oaRz15>.

#### 6.4.2.1.1 Evidence and Consultation with Experts

From the qualitative analysis of the Delphi study results, it was clear that structural change involves components such as behavioural change, leadership and time. These concepts are interlinked. Within structural change, accountability and political and clinical leadership are paramount; however, election cycles influence both this effectiveness, and the ability to successfully create change in behaviour.

We also learnt that the magnitude of the change sets structural change apart from other interventions. One of the experts (e17) stated “the current round of health reform with Health Care Homes and MBS review is brave but necessary. The changes will support the quadruple aim which includes improved patient and population outcomes and experience, and improved care team worker experience, for lower overall cost”. This expert introduced the Health Care Homes (HCH) initiative as an example of structural change reform in primary care. Findings that contributed to the adaptation of the tool are described in Chapter 5.

The Quadruple Aim seeks to optimise health systems in four dimensions of performance by

improving population health, patient experience and provider satisfaction whilst reducing the cost of health care (Bodenheimer & Sinsky 2002; Sikka & Leape 2015). In its multidimensional nature, structural change needs to be evaluated with a tool that includes the quadruple aim of primary care.

The qualitative and quantitative Delphi study findings were incorporated into the prototype at four levels: patient, provider, system and cost of health care.

#### 6.4.2.1.2 Framework run through with General Practice example

This section was developed by using the HCH handbook (Department of Health 2017) and the CHSD Framework (Masso, Quinsey & Fildes 2016) questions as reference. As a result, the simulation below in **Error! Reference source not found.** depicts a General Practice that had qualified and enrolled in the Health Care Home (HCH) initiative. This figure can be found online for easier readability at <https://bit.ly/2HObruA>. The Health Care Home (HCH) example was brought up by experts as an example of structural change in Primary Care.

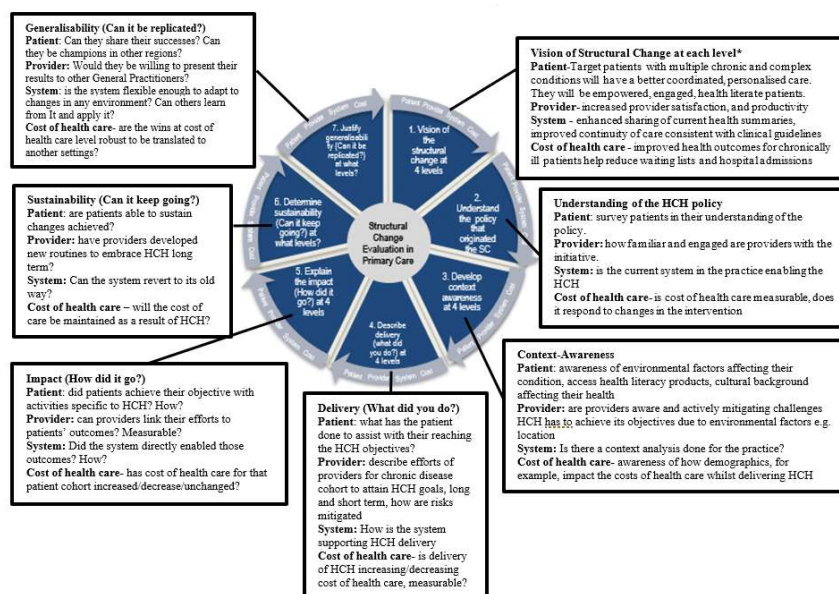


Figure 6-7 Framework application to General Practice, adapted from HCH Handbook (Department of Health 2017)

The following are the steps a General Practitioner would take to move through the evaluation tool and collect their data for the evaluation of structural change. The tool can run at the beginning to collect baseline data, at two years for monitoring and adjustments and at five years for full evaluation. The practitioner could 'delegate' nurses to fill out their section but it is recommendable that someone with a higher view of the practice and its context manages system and cost of health care e.g. practice manager, practice principal.

#### **6.4.2.1.2.1 Vision of Structural Change at each level**

**Patient** - target patients with multiple chronic and complex conditions will have a better coordinated, personalised care. They will be empowered, engaged, health literate patients.

**Provider** - increased provider satisfaction and productivity.

**System** - enhanced sharing of current health summaries, improved continuity of care consistent with clinical guidelines.

**Cost of health care** - improved health outcomes for chronically ill patients help reduce waiting lists and hospital admissions.

#### **6.4.2.1.2.2 Understanding of the HCH policy**

**Patient** - survey patients about their understanding of the policy.

**Provider** - how familiar and engaged are providers with the initiative?

**System** - is the current system in the practice enabling the HCH?

**Cost of health care** - is cost of health care measurable, does it respond to changes in the intervention?

#### **6.4.2.1.2.3 Context-Awareness**

**Patient** - awareness of environmental factors affecting their condition, access health literacy

products, cultural background affecting their health

**Provider** - are providers aware and actively mitigating challenges HCH has to achieve its objectives because of environmental factors e.g. location?

**System** - Has a context analysis been done for the practice?

**Cost of health care** - awareness of how demographics, for example, impact the costs of health care whilst delivering HCH

#### 6.4.2.1.2.4 Delivery (What did you do?)

**Patient** - what has the patient done to assist with their reaching the HCH objectives?

**Provider** - describe efforts of providers for chronic disease cohort to attain HCH goals, long and short term; how are risks mitigated?

**System** - How is the system supporting HCH delivery?

**Cost of health care** - is delivery of HCH increasing/decreasing cost of health care? At what level patients, providers or system? How? Is it measurable?

#### 6.4.2.1.2.5 Impact (How did it go?)

**Patient** - did patients achieve their objective with activities specific to HCH? How?

**Provider** - can providers link their efforts to patients' outcomes? Measurable?

**System** - Did the system directly enable those outcomes? How?

**Cost of health care** - has cost of health care for that patient cohort increased/decreased or remained unchanged?

#### 6.4.2.1.2.6 Sustainability (Can it keep going?)

**Patient** - are patients able to sustain changes achieved?

**Provider** - have providers developed new routines to embrace HCH long term?

**System** - Can the system revert to its old ways?

**Cost of health care** – will the cost of care be maintained as a result of HCH?

#### **6.4.2.1.2.7 Generalisability (Can it be replicated?)**

**Patient** - Can they share their successes? Can they be champions in other regions?

**Provider** - Would they be willing to present their results to other General Practitioners?

**System** - is the system flexible enough to adapt to changes in any environment? Can others learn from it and apply it?

**Cost of health care** - are the wins at cost of health care level robust to be translated to other settings?

## **6.5 Prototype**

A hypothetical General Practitioner or practice owner participating in the Health Care Home (HCH) initiative will go through the seven steps of the framework. With this in mind, the application screens of the prototype were developed using Proto.io prototyping software. The series of screens depict how a General Practitioner would go through the application to populate the evaluation tool with their own data. A graphical demonstration has been added in Appendix 3 Prototype - Supplementary to Chapter 6.

When implemented, this prototype will give the practitioner the tools to adapt and navigate through structural change. For the government, the tool will serve not only as an educational tool but will potentially increase use amongst its receivers. Development of the prototype and testing are subjects of further research.

## **6.6 Other Considerations**

This research found that time and magnitude are elements that set structural change apart from

regular projects and programs. In terms of timing, the practitioner should ask at what stage of the structural change the tool will be applied.

If applied at the beginning, the results of the prototype will serve to plan; if in the middle the results are 'formative', and if at the end they are 'summative'. At any stage, the prototype will provide insights for strategy and risk management. It will be an 'eye opener' for the practitioner and a tool for policy makers to find 'pain points' during deployment.

The following chapter provides a discussion includes issues for the evaluation of structural change and the contribution this research offers to the body of knowledge.



## **Chapter 7 Discussion and Contribution**

It is likely that this research is the first to examine a definition of structural change and its evaluation in primary care.

It is difficult to speak about structural change in health care without mentioning politics. This research found that structural change is driven by the political climate as it is complex and top-down in nature and is initiated by the government through policy. The governance split of Federal and State responsibilities of the Australian health care system adds to the complexity of structural change in primary care.

Other findings that assisted with clarity are that structural change has a direct influence on patient care, the effects on patient outcomes, and has an impact on the cost of health care.

It was interesting that each group of stakeholders influence structural change in different ways. In hindsight, it is apparent that experts in the panel considered structural change from their various angles; some from their managerial positions and others from the coalface where they do practice. Some viewed it from a purely policy-oriented angle, whilst others viewed it from a more day-to-day, practical angle. Overall, the combination of both was useful. This makes context an important element in the study of structural change.

Structural change, with all its nuances, should be treated differently to regular change projects and programs. The health care system is always changing, and practitioners are constantly achieving improved ways of service delivery. Regular change programs happen frequently, however, those of whom involve radically change structure are not as recurrent.

The risks of getting structural change wrong can be costly and potentially higher than change in regular programs. For instance, the government devoted AU\$100 million to the Health Care Home program; a change aiming to alter the structure of chronic disease provision with an initial aim to enrol 65,000 patients. After two years, fewer than 10% of patients had been enrolled, forcing the government to alter the policy and reduce the target for patient enrolment. On occasions, the cost of structural change is represented by time spent on implementation of a policy or setbacks for patients during the change. Dwyer (2004) and Donato and Segal (2010) are of the view that, in health care, structural change alters the way care is delivered to a nation and it makes an expensive dent in the national budget that is seldom justified.

Structural change is often utilised by governments as a change tool (Braithwaite, Westbrook & Iedema 2005), for the advancement of technology, health services and demographic improvement in health care systems (Roald & Edgren 2001). Therefore, the study of the evaluation of structural change should have a higher significance than it currently has in primary care.

This present research is the first of its kind to examine a definition of structural change in primary care and how evaluation of structural change differs from the evaluation of small change projects and programs. It contributes with a definition and a multi-level framework for the evaluation of structural change in primary care.

## **7.1 Definition of Structural Change in Primary Care**

Because structural change has been under-researched, there exists a lack of specific keywords to describe and guide research about structural change (Asada et al. 2017). Therefore, this causes the change occurring to be less transparent to recipients and program managers, as these changes being witnessed are harder to identify as being structural.

Implications are then carried to the assessment, monitoring and evaluation of structural change. Evaluation is especially complicated as change being specifically structural is difficult to define. The definition of structural change as derived from the Delphi study is given below.

### **7.1.1 Lack of Standard Keywords**

As elaborated in Chapter 2, over the years, many terms have been used to refer to structural change.

In the literature, structural change has been known as:

- structural reform (European Commission 2017)
- health care reform (Ozcan & Khushalani 2016)
- structural transformation (Martsolf et al. 2015)
- structural changes (Coid & Davies 2008)
- transformational change (Jolley et al. 2008)
- re-engineering and organisational change in the health care sector (Cockerill & Lemieux Charles 1998)
- re-organisation and reform (Rix, Owen & Eagar 2005)
- large-scale transformational change (Greenhalgh et al. 2012)
- organisational change in the public sector (Fernandez & Rainey 2006)
- restructuring (Braithwaite, Westbrook & Iedema 2005)
- care delivery system reforms (Korenstein et al. 2016)
- complex structural interventions (Saunders et al. 2013)
- complex interventions (Hawe, Shiell & Riley 2004)
- structural interventions in public health (Pronyk et al. 2012)

- primary care reform (Russell & Dawda 2019)
- cyclical reforms (Wynen, Verhoest & Kleizen 2016).

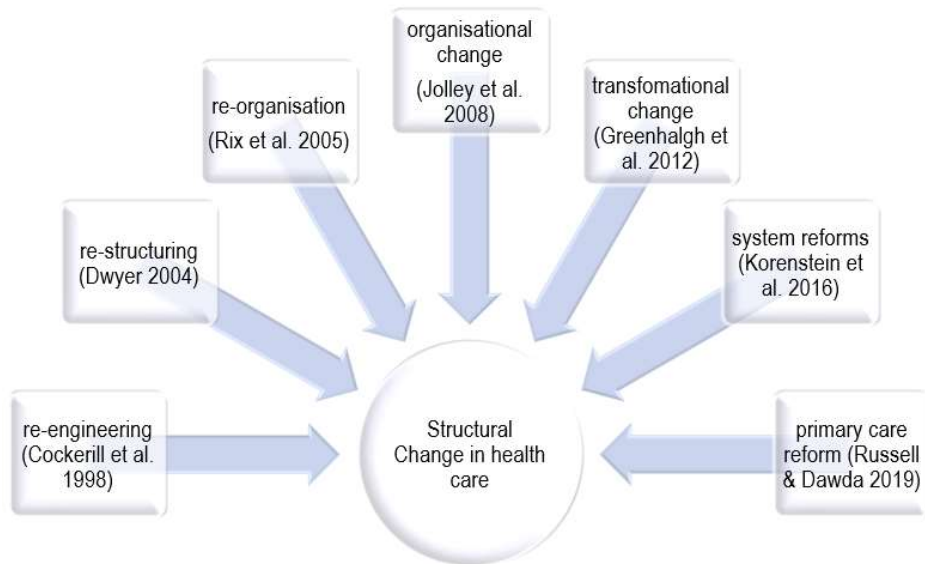


Figure 7-1 Some of the many terms used to describe and define structural change

For example, one of the many papers in HIV prevention (Gupta et al. 2008) addressed structural change; however ‘structural change’ specifically was not included as a keyword. This present research suggests that it is because of the lack of standardised keywords and MeSH (medical subject headings) terms, theoretical models, methodologies and evaluation practices that structural change has been misunderstood in the literature. Structural change has been perceived as an affliction with negative effects on health services organisations (Coid & Davies 2008) and having no evidence-based benefits (Braithwaite, Westbrook & Iedema 2005; Pollitt 2009).

Furthermore, structural change has historically been implemented in ‘jolts’ as a response to major social problems. These include an increase in chronic disease incidence (Coid & Davies 2008) and a lack of evidence in actual performance improvement (Pollitt 2009).

Each author addresses structural change from various angles using different methodologies and a standard definition and evaluation framework had not been proposed until now.

This research offers a preliminary definition of structural change, as consented to by our expert panel in the Delphi study. However, when asked if this definition was well suited for the evaluation of structural change it did not have the same endorsement. Further rounds of Delphi would have revealed more insight into the reasons for this.

The definition derived from our Delphi study in the context of primary care is:

“Structural change is multi-dimensional involving changes in resource distribution, activities, policies, systems and the environment as well as disruption of the core business of at least one segment of the health care system. Structural change occurs within the physical, social, political and economic environment in which health-related decisions take place”.

## **7.2 Context in Structural Change**

Context is an important component of structural change often under-utilised; perhaps because it has not been yet defined. Context is frequently assumed and hard to use as there are no set guidelines to incorporate it in the evaluation of structural change in primary care. Therefore, context has been analysed and used in several ways depending on people’s backgrounds and previous exposure to the notion of context.

” Context is any information that can be used to characterize the situation of an entity. An entity is a person, place, or object that is considered relevant to the interaction between a user and an application, including the user and applications themselves.” (Dey and Abowd 2000, p. 4)

The above definition, borrowed from computer science, helps us define context in structural change by replacing ‘application’ for structural change and ‘user’ for beneficiary, patient or set of end-receivers, depending on the case.

Dey and Abowd (2000) presented the categories of context as location, identity, activity and time. These were re-worded as questions that assist with characterising context for an intervention. These questions are where, who, what and when.

When applied to structural change, these questions translate into:

- location of the intervention (where the structural change will be delivered and monitored),
- profile (who is the structural change targeting and their previous exposure to structural change efforts),
- activity (what is happening in the political, economic, social environments, what efforts the structural change will be exerting, what other change, successful or unsuccessful, has been previously attempted), and
- time (time of the day/season when structural change was last applied and when the current effort will be applied. The timing of the change within the organisation's life cycle can also be included here).

It is difficult to include every element of context; however, it is important to recognise that elements of context that are considered important in one setting may not have great influence when applied to another (Bisgaard, Heise & Steffensen 2004). These categories will assist customisation of the structural change for the target population. To further this effect, the evaluation framework proposed by this research includes context at four different levels: patient, provider/staff, system, and cost of health care levels.

Context is ever changing in structural change and because of the idiosyncrasies of the environment in which it is deployed, it can be hard to describe. For example, the perception of health or wellness is individual and evolves with inputs from experience, physical, economic, social and environmental contexts (Birks, Davis & Chapman 2015). Context is ‘personal’; it can shift with the patient, within the intervention, from site to site, amongst providers, through the system, all whilst having an effect on the cost of health care.

This context has been shaped by a combination of factors. Birks, David and Chapman (2015) and Fanany and Fanany (2012) argue these include:

- Political influence and healthcare funding
- Pay-for-service arrangement
- The notion of universal healthcare
- Changes in population profile
- Life expectancy and chronic disease
- Access to health information
- Changes in power dynamics between health professional and patient
- Social media

These factors make the context in which health care provision and consumption takes place of relevance in the evaluation of structural change.

For instance, at a provider level, General Practice responds to context regarding its geographical location, which further determines the demographics of its patient population, disease incidence and cultural attitudes of its staff towards change.

For this reason, context-level adaptation is essential for the intervention to have an effect. When

the structural change intervention adapts to its context, it is capable of adjusting training to suit literacy levels and the learning styles of its recipients (Hawe, Shiell & Riley 2004).

Several authors have linked context with the non-spread of complex change and stakeholder issues (Ferlie et al. 2005; Greenhalgh & Papoutsi 2018), risk and benefits assessments need to take into account the nature of the context (Denis et al. 2002) and whether the context is receptive (Pettigrew, Ferlie & McKee 1992) to the structural change that will be deployed.

Principal findings in this research include the importance of context at each stakeholder level. An intervention becomes context-aware when context is used to provide relevant services. Context-awareness, a term coined in computing science, ensures the user is provided with the appropriate service as the intervention adapts to the environment of its users (Bisgaard, Heise & Steffensen 2004; Gubert, da Costa & da Rosa Righi 2019; Lieberman & Selker 2000).

For example, in the Health Care Home (HCH) initiative, context awareness at the patient level is related to a series of factors. According to Birks, Davis & Chapman (2015), these factors include patient demographics, health literacy, chronic disease management, social environment and patient-specific attitudes and perceptions of their health. Together, these factors shape the likelihood of success in achievement of desired patient outcomes.

“When an user says “do not do that again”, it is the responsibility of the system to figure out what ‘that’ refers to, by deciding which aspects of the context are relevant” (Lieberman & Selker, 2000, pp. 617-632). To translate this concept into health care, the structural change initiative itself must have the capacity to learn from past experiences. From here, the change must ‘read’ from context provided to modify the ‘behaviour’ of the initiative igniting the change.



This allows success at the levels of patient, provider, system, and cost of health.

A blanket HCH initiative with a main focus on disease management rolled out as one-size-fits-all is likely to miss patients with entrenched behaviours and particular characteristics for which a different approach may be required.

As concluded by Swerissen, Duckett and Moran (2018, p. 58), “primary care is a renovator’s opportunity”. However, this is limited by context-awareness and its incorporation at the different levels of patient, provider, delivery system, and cost of health. Table 16 shows an example of how a patient’s context can be analysed so that the structural change intervention, namely HCH, can tailor its services to fulfil patient needs.

Structural Change Goal	Level (patient, provider, system, cost of health care)	Context Type				Context-Aware Features (HCH uses context to provide services to patient)		
		Activity	Profile	Location	Time	Health Literacy	Demographics e.g. age, ethnicity	Ability to use services e.g. mobility
Increase recruitment of patients with Hba1c $\geq$ 7.5 by 20%	Patient	✓	✓			✓	✓	✓

Table 18 Application of Context & Context-Awareness at patient level – Example of how patients’ Context can be analysed to adapt structural change services to patient needs. Adapted from Dey and Abowd (2000)

Context awareness is vital for the evaluation and success of structural change interventions in primary care. The multi-level evaluation framework proposed by this research incorporates the important element of context-awareness.

**7.2.1 Political Context**

The political environment is highly relevant in structural change either for its success or detriment and this may not be the case with regular programs and projects. Seventy-one percent of experts agreed that the political climate in Australia drives structural change.

Expert 14 states “(structural change) needs a shared vision supported by clinical and political leadership”. Expert 20 added “effective structural change requires alignment of good policy with strong political support and intent. Change is often complicated by political compromise that inevitably makes the health system more complicated”.

Expert 17 believes that “politically, and sadly, change and health reform is often tied to election cycles for quick announcements and quick glory. This can set planned changes for failure”.

### **7.2.2 Economic Context**

However, only 24% of experts agreed that changes in the Australian economy drive structural change; a further 59% ‘somewhat agreed’. The economics literature has researched structural change amply (Connolly & Lewis 2010; Domingo & Tonella 2000; Matsuyama 2008; Lowe 2012); however, economic factors were seldom mentioned by the panel in the Delphi study.

### **7.2.3 Cultural Context**

In terms of culture, 59% of experts believed the culture in General Practice is not conducive to the success of structural change. Part of this problem could be attributed to the changing role of providers in primary care, particularly in General Practice, as expert 33 states:

“for me the critical concern is to preclude fragmentation of the role of the GP, particularly for example in respect of continuity of care, by allowing other Health professionals to take over traditional GP roles and work independently of a team. Nurse Practitioners are wonderful in GP practices and in community nursing roles (e.g. Silver Chain in WA) as part of a team. NPs in shopping malls are a mistake. Pharmacists are not trained as Clinicians, let alone diagnosticians and are a travesty when claiming that role - 'Clinical Pharmacists'. Except in rare situations, we

need GP lead teams with respectful communication to get best outcomes for patients”.

Expert 19 added “allied health professions are infrequently asked to be part of structural change - GP sees itself as separate and so do AHP (allied health practitioners)”.

In round 2, expert 17 introduces the notion that perhaps rolling out initiatives without clear guidelines worsens the culture issue:

“RACGP have put out a Vision paper with a patient centred care model but no discussion of change management to get to that new model of care. Not really wanting to single them out but this is a typical example of suggested change but the 'HOW' of implementation”

Our proposed framework addresses context at four levels: consumers (level 1), providers (level 2), the system (level 3), and cost of health care (level 4). Context is then examined at a deeper level, beyond just readiness to change.

A framework assists in making linkages between contexts within the patient, provider, and care delivery system and across the financial side of healthcare. The intervention can help in this way to recognise and manage the consequences of structural change at all levels. For example, managing providers (level 2) e.g. employees, has a derivative effect on all other levels. It also helps in the discovering of ‘inertial pressures on structure’ (Hannan & Freeman 1984) coming from internal politics and the environment. Hannan and Freeman (1984) further assert that the worst-case scenario is for an organisation to change its structure only to find out that the environment has again shifted and requires yet another change in structure.

### 7.3 Features of Structural Change

The findings of the Delphi study suggest that structural change is:

- Top down
- Multi-dimensional
- Complex
- Pervasive
- Takes time

The majority of the experts agreed that structural change starts from the top down and is initiated by the government. Likewise, the panel agreed that structural change is complex (100%), multidimensional (94%) and costly (53%). Implementers and evaluators of structural change are dealing with at least two changes simultaneously. The HCH initiative, for example, not only has to shift services towards a patient-centred model (system) but also shift culture at patient and provider levels whilst maintaining universal access by keeping cost of health care accessible.

The pervasiveness of structural change was agreed by the majority of the expert panel to have repercussions for models of care and the ripple effects it has into the wider community.

Braithwaite, Westbrook and Iedema (2005) maintain that structural change is pervasive and has been used often to restructure the health systems of Australia, New Zealand, Britain, Canada and the USA.

The findings indicate that structural change is top-down; however, structural change encounters resistance on the ground as teams struggle to adapt to a new routine. This behaviour is explained by institutional theory which explains that staff behaviour is determined by embedded rules, norms and schemas (Scott 2005). In addition, the elements of structural change and how they

interrelate are difficult to identify (Hawe, Shiell & Riley 2004) which could cause confusion and distrust in its recipients.

Structural change takes time to implement (Health & Ageing 2010). The policies and directives can be in place at once; however, its impacts and effects on improving patient, provider and system outcomes can be seen over time:

“Bespoke health maintenance and disease prevention will happen in a timely manner. So, the point is, the measure of outcomes needs to be carefully considered beyond the traditional PH measures” (expert 33 practitioner)

“to be successful, structural change requires well thought out stakeholder consultation and iterative implementation utilizing on data to measure a range of desired outcomes (and not outputs)” (expert 26 policy).

Experts saw with different ‘forms of mind’ the complexity of structural change. Because these forms of mind come from different disciplines e.g. public health, general practice as practitioners, general practice as academics, general practice as both, and policy development, they have different capacities to deal with complex change as a concept, particularly structural change in primary care. They have modified systems, managed conflicts and deal with paradox with different frames of mind (Berger 2011).

The result was a complex set of answers. The design of the Delphi questionnaire alone was complex. During analysis, it was evident that experts were craving an example. However, this was not possible, as providing an example would have influenced the state of mind of the experts, which in turn would have influenced results. Instead, the Delphi questionnaire got

organic, raw answers that included things like ‘I could dream up an example’, ‘difficult to answer without knowing the change we’re referring to’, which are all ways of dealing with complexity.

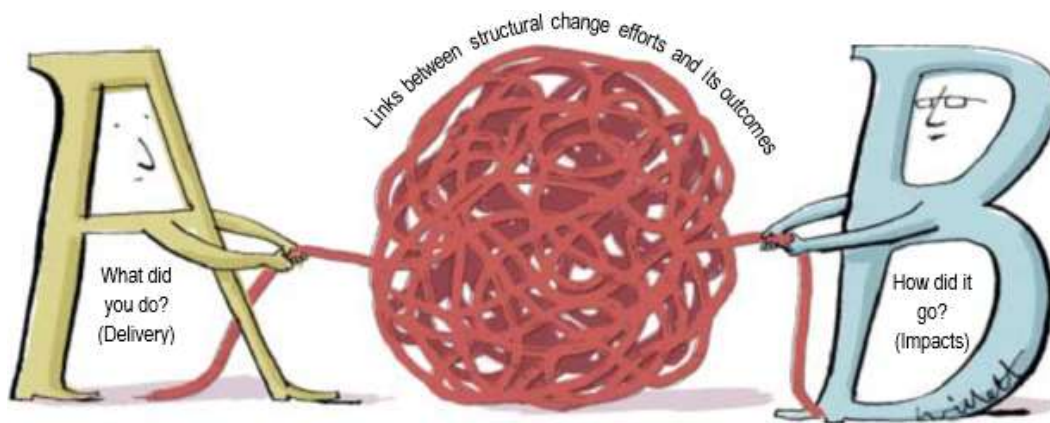


Figure 7-2 Complexity of linkages between efforts and impacts, adapted from Hawe, Shiell & Riley 2004, pp. 1561-1563

Complexity is inherent to structural change and, consequently, its evaluation is a complex process. As depicted in **Error! Reference source not found.**, linkages between efforts, investment of resources and impacts as outcomes of the intervention are not always linear and straightforward.

Hawe, Shiell and Riley (2004 p. 1561) define complexity as “a scientific theory which asserts that some systems display behavioural phenomena that are completely inexplicable by any conventional analysis of the systems’ constituent parts”. The features of complex systems include individual agents, self-organisation, emergent behaviours, dynamic change over time, and localised rather than off-the-shelf solutions (Ellis, Churruca & Braithwaite 2017).

Attempting to reduce the evaluation of structural change to traditional evaluation methods can ‘water down’ its true essence and devoid its users of rich sources of information. Its complexity is to be acknowledged and embraced (Sommer & Parker 2013). The evaluation of structural

change is non-linear and must happen on different planes and levels.

#### **7.4 Is Structural Change different from projects and programs that aim to achieve change?**

The features of structural change listed above make structural change unique and different from regular programs and projects. Therefore, a framework that considers context at the different stakeholder levels and changes over time is required.

Structural change seeks to reform. Reform comes from the Greek ‘anamorphosis’ which originated by combining the Greek words *ana* (again) and *morphoun* (to form) which means to form again (Topper 2000). Anamorphosis is a “deformed image...that appears in its true shape when viewed in some unconventional way” (Kent 2005, p. 1). To understand structural change, stakeholders may need to view it from an unconventional angle; an angle they are not accustomed to or the angle from which the government is seeing it. Both the perceptions of the recipients and of the government are tinted by contexts that include even the background and experiences with structural change of policy makers.

Conversely, the government can practice anamorphosis and see structural change from the unconventional angle from where the receiver stands. To the recipients of structural change, the context in which they live daily might be very different to what is drawn in paper and their challenges very real.

The way stakeholders react to structural change may be different to their responses to a change program that normally seeks stakeholder investment. Structural change is normally ‘deployed’ in the form of policy. This in itself provokes resistance in the recipient and implementers who may

not agree fully with the reform. Regular projects and programs are normally introduced via its benefits and have a bona fide characteristic about them towards those involved.

The large scale of structural change makes it difficult to gain thorough insights from the wide array of stakeholders involved. One of the recommendations from our experts was to have ample consultation with stakeholders during the planning phase, yet a sample of representatives for each stakeholder group will not always voice hundred percent of the concerns.

The difference between structural change and regular programs seeking change lies in the way they are delivered. One is led, the other is driven. Structural change is usually led by a policy whereas regular programs seeking change are smaller in magnitude. They do not necessarily have to affect structure and can be controlled by the people on the ground and by its environment.

Structural change normally causes chaos because of size and the significant blow required to make a structure shift. It dislodges people and processes away from their usual norm. With regular programs, change can be more gradual, managed with incentives and ‘structural inertia’ can set in.

Structural change can be referred to as a ‘program’ but a regular program cannot be called structural change unless it had originated from the government in the form of policy. Structural change is normally of great scale affecting large groups of people at the national level. It is pervasive enough to shift structure and takes longer to realise outcomes than do regular programs.



<b>Structural Change</b>	<b>Projects &amp; Programs</b>
Addresses factors affecting individual behaviour	Target the behaviour itself
Aims to change social, economic, political or environmental factors that determine the behaviour e.g. transform social norms such as reduction of gender-based vulnerabilities such as sexual violence	Aim to change individual behaviour
Can be delivered in the form of activities or services to individuals	Can be delivered in the form of activities or services to individuals
Structural change involves different activities in different settings	Projects and programs have a pre-determined set of activities per setting
Single policies or programmes e.g. legal action to reform discriminatory practices	A program that targets discriminatory practices through education
Transformational processes e.g. social mobilisation that opposes damaging of traditional practices	Highlighting the harmful practice with a possible call to action
Shifts in policy to allow behaviour considered illegal in other contexts e.g. policy and legal environment shift to allow syringe and needle exchange	Execute the policy e.g. syringe exchange and provision programmes
Service re-orientation from prohibition and cure to maintenance and harm minimisation that target the drivers of the behaviour in the population of relevance	Education messages to population of interest
Policy that introduced water fluoridation to a whole nation to reduce incidence of dental decay	Population informed of water fluoridation benefits, projects and programs that implemented

<b>Structural Change</b>	<b>Projects &amp; Programs</b>
	and rolled out water fluoridation
In addition to comparisons, evaluation implies identification of intervention activities tailored to local needs	Evaluation implies comparisons between pre-intervention and post-intervention cross-sectional data on indicators of effectiveness
<b>Challenges to Evaluation</b>	
Structural change that focuses on distal drivers of the outcome of concern	
multiple causal pathways by which a factor affects an outcome.	

Table 19 Differences between Structural Change and Programs seeking change. Adapted from Blankenship, Bray and Merson, pp. 11-21, 2000

Based on Blankenship, Bray and Merson (2000) Table 20 compiles some of the differences between structural change initiatives and regular projects and programs.

## 7.5 Stakeholders and Structural Change

The study offers a glimpse into the influence stakeholders have in structural change. The study found that stakeholders can influence the success of the intervention. For example, there was a high level of agreement that General Practitioners influence the success of structural change. At a lesser degree, nurses and practice staff were also seen as influencing structural change success. The why and how of these findings were outside the scope of this research.

Some experts added:

“To be successful, structural change requires well thought out stakeholder consultation and iterative implementation utilizing on data to measure a range of desired outcomes (and not

outputs)” (E26),

“Practice management has a critical role in the successful implementation of structural reform” (E20).

### **7.5.1 Effects of Structural Change on Staff/Employees**

The results indicate that staff members can influence the success of structural change.

Furthermore, structural change has impacts on staff members and their activities as well as on their physical and social environment (q8R1). Roald and Edgren (2001) found that there is little research on how employees experience structural change and pointed out that resistance to change was prevalent. In the present study, expert R1-19 stated, “GPs in particular are highly resistant to structural change” (practitioner). Other experts expressed the need for support from organisational and political leaders.

Expert 14 stated “(structural change) needs a shared vision supported by clinical and political leadership”. Expert 20 added, “effective structural change requires alignment of good policy with strong political support and intent. Change is often complicated by political compromise that inevitably makes the health system more complicated”. Expert 17 believes that “politically, and sadly, change and health reform is often tied to election cycles for quick announcements and quick glory. This can set planned changes for failure”.

### **7.5.2 Changing Culture or Changing Structure**

Authors have suggested that it is advisable to scrutinise culture prior to embarking on structural change (Roald & Edgren 2001; (Braithwaite, Westbrook & Iedema 2005).

Changing culture has been used as a quality improvement strategy and an attempt to increase patient satisfaction, improved efficiency and outcomes (Greenhalgh et al. 2012). The belief that culture needed to be changed rather than structure was predominant amongst the experts’

opinions. Others thought that a culture shift was required prior to a shift in structure.

Similarly, Roald and Edgren (2001), Wynen, Verhoest and Kleizen (2016), Jones (2003), Carley and Hill (2001), Checkland (2007), Bitner, Ostrom and Morgan (2008), Lees and Taylor (2004) and Aysola et al. (2015), to name a few, highlight culture as an element that affects the results of structural change. The findings of the present research confirm this view.

Again, in structural change, context is highly relevant. A scenario where providers (such as staff members) have the ability to influence successes leading to structural change needs to be examined from many angles. By ‘slicing’ the different stakeholder groups, the amount of power each has can be gauged and strategies can be found to manage them. Diverse measures of culture in health care have been published and can be a starting point for this examination.

However, Greenhalgh and Papoutsi (2018) discern the link between the change effort and its outcomes cannot be predicted as directly related to the variables in level 3 issues as service delivery systems. Hannan and Freeman (1984) discuss ‘structural inertia’ as the result of internal politics at level 2 as providers or employees in the framework.

## **7.6 Key issues in the Evaluation of Structural Change**

One of the challenges for the evaluation of structural change is that a change often cannot be directly linked back to the specific effort towards the change. This can be seen in a shift to patient centred care. One of the most common reasons for this change is that many other changes occur simultaneously, both within the organisation and in its external environment during the studies (Cockerill & Lemieux Charles 1998).

Cockerill and Lemieux (1998) decided to refer to a ‘monitoring’ framework to help stakeholders

be at ease knowing they were no longer judged on the success of structural change. However, in the literature, the authors called their work an evaluating framework arguing “we are working from a tradition that includes monitoring as part of evaluation” (Cockerill & Lemieux 1998, p. 141).

The framework proposed by this present research can be used as a monitoring tool at the two-year mark where the intervention is analysed for continuation. There are six levels: consumer/patients and families, providers/doctors, nurses, allied health and staff, service delivery system and cost of health care implications. At the five-year mark, a comprehensive evaluation will reveal impacts of the intervention at each level to then produce a report on the evaluation of the whole structural change. The key issues to the evaluation of structural change are classified into context, patient/consumer, provider/staff, system and cost-related challenges.

### **7.6.1 Issues due to Context**

In the section ‘Context in Structural Change’ context is discussed as a key element in the success and evaluation of structural change.

### **7.6.2 Issues at Patient/Consumer Level**

This study found that consumers have a role influencing the success of structural change as confirmed by 65% of experts’ agreeing. However, only 29% of experts agreed that consumers should always be involved in the evaluation of structural change and 65% thought consumers should be involved only ‘sometimes’.

### **7.6.3 Issues at Provider/Staff Level**

If not well managed, providers and staff present a challenge for the evaluation of structural change. This study found that input from providers and staff does influence the success of

structural change. For instance, the experts agreed that General Practitioners (88%) and medical colleges (88%) have a major role in influencing the success of structural change. Experts agreed that nurses (59% agreement and 35% somewhat agreed) and practice staff (76% agreement) do influence the success of structural change. Experts also believe that allied health practitioners (59% agreement) have a role in the implementation of structural change.

The study found that resistance to change is predominant in General Practice:

“There is a significant inertia in general practice and resistance to change. The medical peak bodies are partly responsible for this inertia” (expert 20). Expert 19 supported this claim by saying “GPs in particular are highly resistant to structural change”.

#### **7.6.4 Issues at System Level**

The challenges at system level are closely related to the features of structural change. Policy structures, processes, networks and relationships are affected by the top-down, complexity, multi-dimensionality and pervasiveness of structural change. Shifts to the new normal will require time and intentionality from those leading the change.

The Delphi study found that structural change affects business systems (88% agreement), directly influences patient care (82% agreement), patient outcomes (82%), care coordination (71%), staff retention (59% agreement), staff satisfaction (70% agreement) and the wider community (77%).

Expert 28 speaks of the challenges for the evaluation of structural change at the system level, stating “the requirements for structural change will also depend on the services, infrastructure, philosophies and culture that have evolved over decades”.

### **7.6.5 Issues related to Cost**

The Delphi study found that cost of health care is a core feature of structural change evaluation (88% agreement as a core feature) along with remuneration and funding (82% agreement as a core feature).

Structural change can increase the cost of health care as it affects patient care (100% agreement), it has repercussions on models of care (82% agreement), influences staff satisfaction (71% agreement), influences patient outcomes (94% agreement), affects information management and technology (65% agreement) and its impacts ripple into the wider community (53% agreement).

As elaborated above, the evaluation of structural change has key issues that can be classified in terms of context; patient/consumer, provider/staff, system and cost of health care. These issues need to be addressed in the planning and evaluation of structural change.

### **7.6.6 Issues related to Policy Design**

Evaluation of structural change may not be conducted by those who implemented and rolled out the initiative, as seen in figure 7-3. In this case, the government has ownership of the evaluation process. This has implications for the outcomes of the initiative as seen in the Health Care Home (HCH) initiative that aimed to re-structure the way services are delivered to patients with chronic disease.

In managing the HCH program, Primary Health Networks (PHNs) are required to submit information to the department that in turn monitors progress and conducts the evaluation of the initiative, as outlined in the Grant Programme Guidelines (Department of Health 2016).

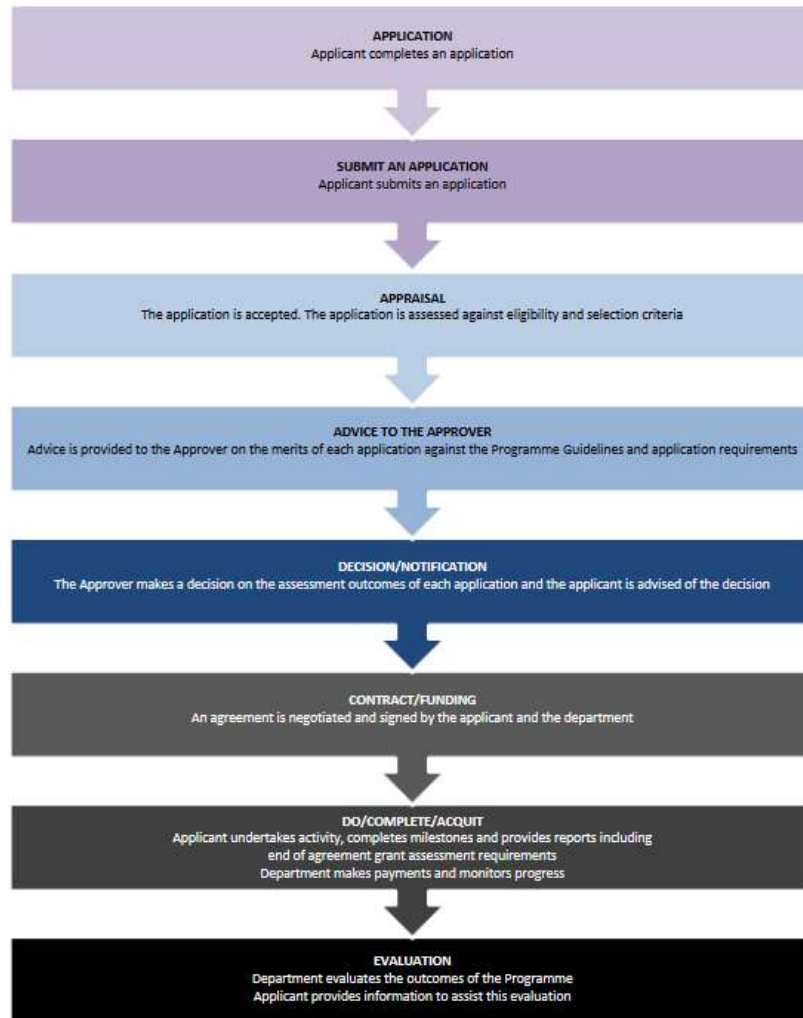


Figure 7-3 Grant Programme Process Flowchart (Department of Health Commonwealth of Australia 2016)

This research suggests that ownership of the evaluation should remain with the entity that manages the initiative (in this case, PHNs). In this way, the department would have known earlier about the inability of HCH to enrol 65000 patients and could have re-directed efforts and resources accordingly.

Rather than a single institution having the major responsibility, perhaps what is really required is a consortium. Here, institutions with expertise are able to excel in their best field and utilise leverage from networks built over the years. An example of this is mentioned in Dr. Gardner's media article about a tender won by an institution with expertise in youth mental health (Gardner 2019).



Instead of having a ‘me too’ personality across the nation, the HCH initiative should be, as originally intended, an innovative structural health reform, vibrant in expertise and shaped and funded by context in each area of Australia. Its principles have the potential to create a thriving consortium of experienced institutions responsible for their own performance and evaluation, guided by a research advisory committee made up of scholars experienced in health reform.

An evaluation report from each expert institution with outcomes clearly linked to the structural change effort at four levels: patient/consumer, provider and staff, system, and cost of health care can be submitted by PHNs to the government at 2 years for monitoring and 5 years for evaluation. The four levels are consistent with the Quadruple Aim which the government endorses for the HCH initiative.

To achieve the above, it is necessary to train the expert institutions on implementation and evaluation processes that link outcomes to structural change and then to follow up with them at least quarterly to identify areas of concern, teaching or resources they may need.

## **7.7 Structural Change and Dual Administration**

Another issue in understanding structural change in primary care is the dual administration characteristic of the Federation in Australia; the Federal (central) government and the State (local) government.

Research suggests that public services are best optimised under complete centralisation because if decentralised, one of the local government’s decision could have major implications for other local governments. Furthermore, both forms of government have different mechanisms to hold bureaucrats accountable for their roles in making policy (Hong 2019).

In addition, health services have been predominantly studied using process-driven methods with a tendency towards evaluation (Reich & Turnbull 2018), mostly seeking reforms and restructures (Braithwaite, Westbrook & Iedema 2005).

Structural change in primacy care is, as this study found, top-down. It is governed by a set of policy directives which aim to shape recipients into the desired behaviour scripted by a policy.

One of our experts stated:

“The Commonwealth of Australia Constitution is one of the fundamental influences of the way health care services are structured, funded and delivered in Australia. Section 51 prohibits the Commonwealth from any form of civil conscription in terms of medical and dental services (where both legal and practical compulsion may offend the caveat). Structural changes for health reform by the Commonwealth have always had this limitation”.

## **7.8 Structural inertia and Structural Change**

Structural inertia refers to the speed of reorganisation relative to the rate of change within a certain context i.e. the environmental condition (Hannan & Freeman 1984). Therefore, institutions undergoing structural change will reorganise as quickly as they can adapt within their specific context. For example, the Health Care Home (HCH) initiative aimed to re-organise the way chronic disease services are managed in General Practice. It took two years for General Practices to recruit less than 10% of the target set by the policy. At this point the policy was amended to lower HCH's recruitment target.

Reorganisation and structural change did not happen as anticipated by the policy. It can be argued a combination of factors play a role to cause structural inertia. These include

environmental conditions such as demographics, personal clarity and incentives, and a patient's readiness to change. In the case of the HCH, it is structural inertia. This is because the critical component of the initiative, those receiving the change and by which the initiative could have been measured, simply were not there to enable progress.

Whilst institutions are dealing with structural inertia, there exists the opportunity to build organisations that take advantage of this 'slowness' and present a solution (Hannan & Freeman 1984). In this case, to manage chronic disease services efficiently with proof of direct linkages to these improvements. A consortium of expert organisations with years of network linkages could be the answer to getting the outcomes of structural change off the ground as intended by the original HCH initiative.

It might be that this was the case with the US health services where the private industry is now leading the way and making health services accessible only to those who can afford it.

## **7.9 Elements of a Framework for the Evaluation of Structural Change in Primary Care**

Unless an evaluation framework prompts its users to be accountable in the delivery of the expected outcomes of structural change set out by the original policy, structural inertia can easily set in.

The elements of the framework presented below will trigger a process of reflection on outcomes and replication and assist those managing the initiative to seek help early in the process if they perceive outcomes are too ambitious. As studied in the challenges for the evaluation of structural change, the elements required for the framework are to include:

- Structural change notion – the framework will incorporate a notion of structural change which will act as the 'vision' of the initiative to be communicated often to

all involved. Acknowledgement that structural change is being implemented, and not just any regular program or project, will prepare the minds and resources to embrace it.

- Policy – the Delphi study informed that structural change is top-down; it starts with a policy handed down by a government. It is important that all included understand and have an expectation of how the policy will alter the way things are done.
- Context awareness – the importance of context in the understanding of structural change was established earlier in the section ‘Context in Structural Change’. The outcomes of the structural change will vary widely according to the context in which it was implemented. For example, patient response to structural change could be different in Western Sydney than if rolled out in the Northern Beaches area of Sydney because the social and economic contexts, for example, are different.
- Delivery – answering the question, ‘what did you do’ will capture every effort and how it was done according to the brief of the policy that initiated the structural change. This has great relevance for its replication.
- Outcomes and impacts – this section will answer the question ‘how did it go’. Ultimately, the main reason for structural change is to improve patient outcomes. Therefore, the framework will have a section dedicated to the explanation of the outcomes and impacts of structural change on the improvement of health service delivery and, subsequently, patient outcomes. The Delphi study found that providers and staff can influence the success of structural change. A framework that recognises their engagement and challenges during implementation would facilitate the success of structural change. Furthermore, policies, structures, processes, networks and relationships will also be impacted by structural change

and therefore these will need to be included in the evaluation framework for structural change. In regard to cost-related outcomes and impacts, the aim of structural change should be to make patient care cost-effective. By including this element in the evaluation framework, users of the framework will reflect on the variations in the cost of health care as a result of the structural change efforts.

- Sustainability – Suggested by Hawe et al. (1997), health outcomes are the result of the magnitude, penetration and the sustainability of the effect of an intervention. Sustainability is the capacity to maintain and continue these effects (Hawe et al. 1998). These factors are inherent to structural change success. A change that cannot be maintained and where its recipients and beneficiaries return to normal after the intervention is not a genuine structural change. Consequently, those involved will benefit from answering the question; can the structural change continue? With regular projects and programs if funding ceases the intervention most probably will cease. Structural change, however, has changed the way a service and its funding are delivered. To reverse or amend its effects, a second policy from the government would be required. This was the case with the Health Care Home (HCH). The number of patients enrolled by the initiative was lower than the number set out by the policy and two years later another policy came into place to lower this number and assist with its sustainability.
- Generalisability – the framework will prompt users to ensure their efforts can be replicated somewhere else. Structural change requires a significant strategic effort and lessons learned can be shared across the nation. This saves tax-payers' funds and efforts and the next round of recipients could benefit from the hindsight and expertise of those who were the pioneers.

These elements have not been explicitly set out in previous research of primary care. In Chapter 2 we saw how there are separate characteristics for primary care, evaluation of health services and structural change; however, these were not found combined in the literature.

## **7.10 The Framework and the Quadruple Aim**

As stated in section 2.1.6 of Chapter 2, there are ‘4 C’s’ or four pillars of primary care. These remain first point of contact, comprehensive care, coordinated/integrated care, and continuous care (Bodenheimer et al. 2014). These pillars support primary care to achieve the Quadruple Aim that intends to improve patient experience of care, provider satisfaction, and achieve population health goals whilst reducing costs and the performance of the overall health system improves (Park et al. 2018).

Because of this and because of its complexity, the evaluation of structural change in primary requires a framework that includes the Quadruple Aim and accommodates the nature and peculiarity of structural change along a timeline as its impacts are normally seen overtime. To this end, our adapted framework sits within a timeline and includes four levels of analysis: patient, provider, system and cost of health care consistent with the Quadruple Aim. Practitioners using the framework are compelled to consider structural change at these four levels whilst elements of the ten building blocks are embedded in this analysis.

Structural change effects need to be studied on a timeline with comparisons being made along that same timeline. These results will indicate whether the intervention needs to be modified to yield higher improvements, or if the investment of public funds would fare better in a different venture that could readily improve patient outcomes.

Structural change can take a whole generation before its impacts are realised. Headspace, for example, was funded to restructure part of the mental health system and to date there is no hard evidence on its impacts aside from the awareness raised in recent years by the intervention that makes young people seek care and talk more openly about their struggle (Ellis, Churruca & Braithwaite 2017; McGorry, Bates & Birchwood 2013; Muir et al. 2009; Rickwood, Van Dyke & Telford 2015).

The CHSD evaluation framework was adapted for structural change with insights from expert opinion collected through the Delphi study. As such, components such as context and timing (the framework includes a timeline with cut off points at two and five years) were added.

The study found that context is central to structural change success; expert 26 stated “to be successful, structural change requires well thought out stakeholder consultation and iterative implementation utilizing on data to measure a range of desired outcomes (and not outputs)”.

The adapted framework allows for the effects of structural change to be ‘gauged’ over time on four dimensions including the cost of health care. Expert 33 stated “the measure of outcomes needs to carefully be considered beyond the traditional PH measures”.

The framework was initially adapted as a static (see), point in time evaluation tool, however, evaluating structural change demanded a more dynamic framework, which is why the final framework now sits over a timeline as depicted in Figure 6.3 of Chapter 6.

In synthesis, the steps of the proposed framework are:

- 1 - The first step in successful structural change is to acknowledge it is health reform.

Therefore, practitioners need to develop a vision of the structural change for their setting and work while being conscious that it is not a regular program or project,

- 2 - Understand the policy that originated it and its aims at each level: patient, provider, system and cost of health care,
- 3 - Develop context-awareness at each of the four levels,
- 4 - Describe 'what did you do' at each level,
- 5 - Explain impacts and outcomes; answer 'how did it go?' at each level,
- 6 - Determine sustainability; answer 'can it keep going?' and analyse if outcomes can be sustained over time at each level,
- 7 - Justify generalisability; explain replication of the structural change and its implications at each level.

A standard context-analysis tool would be beneficial to assist practitioners with step 3 so that results can be tabulated and information used to guide future structural change efforts in the same geographical area by other research teams.

## **7.11 Discussion on Methodological Findings**

This research found two important methodological considerations in the analysis of the Delphi study. The first is the analysis of Likert scale results and the second refers to what constitutes consensus in a Delphi study.

### **7.11.1 Caution in the Analysis of Likert Scales**

During this study, it was found that there is no clear guideline on whether to use a five-point, seven-point or nine-point Likert scale, and in what circumstances.

In the testing phase, it was advised that a five-point Likert scale was not discriminating enough and that a nine-point Likert scale could have overwhelmed our experts who were already pressed



for time. Therefore, a seven-point Likert scale was used. There is no clear guideline in the literature as to how many Likert scale points to use. However, research shows the human minds can distinguish amongst seven different categories of absolute judgement. Furthermore, a span of immediate memory for seven items and attention of six objects at a time exists. Therefore, a higher number of response categories is not recommended as a higher number can render very little additional information (Colman, Norris & Preston 1997; Miller 1956; Preston & Colman 2000).

It is possible that this issue is tied up to the fifty year debate (Carifio & Perla 2008). The authors explain that for fifty years there has been a debate between two groups; those who view Likert scales as ordinal and those who view them as intervals. The authors are concerned about the improper use of the word 'scale' and its measurement by the ordinalists. Carifio and Perla (2008) further warn against reporting on Likert scale results item by item and instead take the results as a whole and use statistical analyses on the whole and not on item by item.

However, the quest to find the measure of each interval within the scale is almost meaningless for some qualitative studies where questions are complex, and even abstract, requiring an answer of the same nature. For instance, measuring the distance between 'somewhat agree' and 'mostly agree' when referring to introducing changes in isolation can be done statistically. However, the qualitative researcher seeks a deeper meaning beyond a measure of distance. The question is how a greater or smaller distance will solve the issue of consensus when 'somewhat agree' has a different connotation to 'mostly agree'. Here, respondents cannot logically be put in the same 'bucket' with the 'mostly agree' folk.

According to Carifio and Perla (2008) the first step is to discern if our scale is in a Likert

response format, a Likert (graded valence) question, or a Likert scale (collection of items). After that, as prescribed by the authors, an intervalist would:

- summarise Likert scales ratings by using the mean and standard deviation,
- calculate Pearson correlation coefficients and
- run multiple regression, factor analysis or meta-analysis as appropriate

(Carifio & Perla 2008).

Perhaps ordinalists must make a disclaimer when using Delphi studies or bend themselves towards the intervalist view in order to, as Carifio & Perla (2008) recommend, benefit from the fruitfulness of these analyses. However, Allen and Seaman (2007) warn about reaching misleading conclusions about agreement when analysing Likert-type data using means and recommend that the researcher should rather consider the ordinal nature of the data for analysis. The other option is to not use Delphi studies on such complex issues. However, as it was the case with this research of an explorative nature, the journey itself brought about the discovery that the researcher is an ordinalist, and that finding is very useful as it has great implications for her future research path.

## **7.12 Application**

The evaluation framework for structural change in primary care can be applied to other settings where context and time are of relevance. The framework is flexible enough to be adapted into areas of education and information systems, to name two.

## **7.13 Contribution**

This research contributes with a structural change definition in primary care and a framework for summative evaluation that helps to understand the process of structural change and if the initiative is going in the right direction.

Structural change is perceived as a way of improving health care, is often used by governments as a change tool (Braithwaite, Westbrook & Iedema 2005). It is used for the advancement of technology, health services, and for demographic improvement in health care systems (Roald & Edgren 2001). However, it is currently under-researched and not well understood (Asada et al. 2017, Braithwaite; Westbrook & Iedema 2005).

The first of this type in the field, this research contributes to the body of knowledge by yielding a preliminary definition of structural change within the context of primary care, and by highlighting the need for its evaluation by presenting a multi-level, ready-to-test evaluation tool.

Further study is required to scrutinize how and when the outcomes of structural change do occur and how these outcomes are the product of structural change. The definition of ‘impact’ and what constitutes an impact of structural change in primary care are still to be defined as an area for future research.

A question arises; is it that structural change needs to be studied or rather that the policy that initiates it be studied? And how is this policy being evaluated before it gets ‘showered’ over health service facilities?

## **7.14 Limitations**

Being the first study of its kind, this research presents a few limitations. This research was focused on the Australian health system only. Because of the unique nature of the Australian health system, the study of structural change in primary care had to be centred within the confines of Australia. Therefore, the expert panel were mostly Australian with a small number being from Canada and the UK.

Time and resource constraints meant the Delphi study was capped at two rounds. Two rounds are sufficient to explore the opinions of the respondents; however, more rounds are required in a Delphi study to build consensus (Keeney, McKenna & Hasson 2011; Scott & Black 1991). In contrast, Skulmoski, Hartman and Krahn (2007) suggest that two or three rounds are sufficient for most research as more rounds increases the likelihood of a drop in response rate.

Because structural change in primary care is under researched, it was challenging to locate literature specific to the topic as MeSH terms are not standardised. Furthermore, the methodologies used to evaluate reform, restructure, policy changes and other terms referring to structural change, were inconsistent.

## **Chapter 8 Conclusion**

It was most challenging to conduct research on this topic due to the lack of parameters and guidance on previous structural change in primary care in Australia. With the tireless guidance and support of my supervisors, the aims and research questions outlined in sections 1.4 and 1.5 of Chapter 1 were achieved .

The introduction suggests that this is the first research to examine a definition of structural change and its evaluation in primary care. In primary care, structural change can include changes to medical, technological and demographic improvement (Roald & Edgren 2001). The importance of the notion of structural change is noted and the research evaluated its impacts because, as Braithwaite, Westbrook and Iedema (2005) argue, it seems as if its use by governments will not cease unless a different change management strategy is introduced soon. As such, the complexity of structural change means that any findings from rigorous research are not trivial and are a contribution to knowledge.

The national and international literature on structural change lacks consensus on a definition of structural change and its evaluative approaches.

It seems that structural change is misunderstood partly because there are no standard or specific keywords or MeSH terms that refer to structural change in scholarly search databases.

For instance, authors do not identify their work as ‘structural change’, but rather an array of synonyms is used instead. These vary to include:

- health care reform (Ozcan & Khushalani 2016)
- structural transformation (Martsolf et al. 2015)
- structural changes (Coid & Davies 2008)
- structural interventions in public health (Pronyk et al. 2012)
- transformational change (Jolley et al. 2008)
- re-engineering and organisational change in the health care sector (Cockerill & Lemieux Charles 1998; Rix, Owen & Eagar 2005; Greenhalgh & Papoutsis 2018)
- organisational change in the public sector (Fernandez & Rainey 2006), restructuring (Braithwaite, Westbrook & Iedema 2005)
- cyclical reforms (Wynen, Verhoest & Kleizen 2016)
- health care delivery system reforms (Korenstein et al. 2016)

The challenge is, according to (Asada et al. (2017), to list all interventions considered to be structural change and, even more challenging, to search for keywords describing structural change in multiple databases. The vast list of results would still be incomplete and would create findings biased towards those interventions listed.

By examining the definition of structural change, this research found that structural change is perceived differently at the various levels of stakeholder groups. It found that even amongst experts, perceptions of the impacts and effects of structural change are experienced from the angle from which they are positioned. For instance, policy makers view the impact of structural change differently to expert practitioners at the coalface of General Practice.

The adapted CHSD evaluation framework considers the evaluation process of structural change within the context of the intervention from within each stakeholder group.

This multi-level evaluation framework produces rich data which assists with the understanding of structural change viewed from the angle of each stakeholder group. Strategies at each level can then be implemented to further the success of structural change but, most importantly, linkages between structural change and its impacts/outcomes can be potentially drawn.

## **8.1 Research Considerations**

The use of quantitative (descriptive) method with a cross-sectional approach suited the exploration of the aims and research questions. A group of experts ranging from high calibre academics, health policy experts, practitioner leaders of opinion in Australia and experienced senior executives were approached via a Delphi questionnaire. This questionnaire was created over a secure platform known as REDCap®.

The platform gives the experts the ability to rank their opinion into a Likert-type scale and to offer their points of view in a free text field at the end of each item. The insights gained with this approach are unlikely to have been gained if a different method of data collection had been used. This approach is suitable to the time available for the participants and avoids the risk of more vocal participants to shape others into their own way of thinking.

## **8.2 Considerations about Practice**

As a topic that has been under researched, there is a lack of guidance for the implementation of structural change in primary care. Despite how often structural change is either suggested or attempted, there are no national or international guidelines for either the implementation or evaluation of structural change. As one of the experts observed:

“RACGP have put out a Vision paper with a patient centred care model but no discussion of change management to get to that new model of care. Not really wanting to single them out but this is a typical example of suggested change but the 'HOW' of implementation” (e17).

This research confirms what the literature has stated in recent years, there is a lack of standardised keywords and MeSH terms, theoretical models, methodologies and evaluation practices for structural change (Asada et al. 2017; Lieberman, Golden & Earp 2013). Perhaps the reason why structural change has been misunderstood in the literature is because it has been perceived as an affliction with negative effects on health services organisations (Coid & Davies 2008) and as having no evidence-based benefits (Braithwaite, Westbrook & Iedema 2005; Pollitt 2009).

Further Delphi studies can assist in the development of guidelines for the evaluation of structural change and bring several, complex approaches into convergence to formulate a first guide to structural change.

## **8.3 Considerations about ‘Context’**

In the development of this research, the importance of context and context-awareness became apparent. Context is dynamic and ‘personal’; specific to the setting where structural change is to be deployed.

Some may think that context can be seen at first glance but not all information is context. Context needs to be abstracted and is normally not found in the format that can be used for structural change work.

This research borrowed a notion from computer sciences:

“When humans talk with humans, they are able to use implicit situational information, or context, to increase the conversational bandwidth” (Dey & Abowd 2000, p. 1).

Implicit information is the carrier of wisdom; it gives the structural change the ability to increase its ‘bandwidth’, to reach deeper, to be beneficial.

Context is frequently assumed, and hard to use as there are clear guidelines to incorporate it in the evaluation of structural change in primary care. Therefore, context has been analysed and used in several ways and determined by authors’ backgrounds and previous exposure to the notion of context.

Context-aware structural change initiatives have the ability to collect and store context-related information to guide and correct current strategy.

In the case of the Health Care Home (HCH) initiative, context would have informed the department about the HCH inability to enrol 65000 patients and re-direct efforts and resources earlier in the process. Context awareness has implications for the success of future structural change initiatives, their impact, cost and generalisability.



## **8.4 Considerations about Policy**

Jolley et al. (2008) recommended that policy goals need to be explicit, measurable and able to reflect societal values. Basu, Meghani and Siddiqi (2017) say:

“Large populations are not simply the sum of individual health outcomes but complex groups with interdependencies, producing the daunting task of identifying how best to analyse individuals, households, neighbourhoods, countries, and whole societies. No single analytic approach can therefore replace an experienced, careful understanding of the population being studied, the policy being examined, and how the two interrelate” p. 366.

Context analysis when embedded within an evaluation framework can help with this understanding.

Ignoring context can contribute towards failure of the structural change efforts. Policy makers, health practitioners, academics and executives can all benefit from a careful analysis of context, prior, during and at the completion of structural change initiatives in primary care. However, a body of research on the topic is needed.

## **8.5 Recommendations**

The evaluation of structural change is under researched. The foundation of a good evaluation is the thorough understanding of the topic to be evaluated, including its background and challenges.

Health practitioners and policy and academic researchers can benefit from the methodology used in this research to explore a topic in a health service area for the first time.

The results of the Delphi study can be used to further analyse the why and how in the findings.

For example, question 43 in Round One asked if structural change has direct influence on patient care. This question achieved consensus; however, the why or how and whether its influence on patient care is linear or not is a topic for future research.

Future research is required to define criteria for the measurement of structural change. Presently, structural change is not well defined (Asada et al. 2017) and how structural measures relate to improved patient outcomes remain unknown (Braithwaite, Westbrook & Iedema 2005).

Further, the examination of how much of the structural change effort has impacted the delivery of services and patient health outcomes needs robust methods such as randomised trials, longitudinal studies, time series and cross sectional studies (Braithwaite, Westbrook & Iedema 2005).

It is also recommended that access to top senior executives, policy makers and high calibre academics and practitioner, and leaders of opinion who have published or have years of experience in the subject of structural change be facilitated.

Research on structural change in primary care is severely lacking. It has been argued in other countries that the lack of research on issues of structural change in health care suggests that the degree of political will and attention are incommensurate with the seriousness of the problem.

Taxpayer resources are being cyclically used for funding structural change interventions (Braithwaite, Westbrook & Iedema 2005) nationally and internationally. The use of public funds calls for a responsibility to use these funds in the most cost-effective way and to determine the real impact and value of structural change. This is achieved through the use of a multi-level

evaluation tool for primary care that embeds accountability.

Further studies on how historical and social comparisons influence the way performance is interpreted in structural change efforts are also required.

Another challenge is the resistance that structural change encounters upon implementation as the organisation and their staff prefer their default 'normal routine'.

Grielen, Boerma and Groenewegen (2000) are of the view that a health reform project can be judged at several levels; it can fail at the individual project level by not reaching its goals but be successful at a 'higher' level and achieve its projected political outcomes.

This research helps recognise the challenges of structural change and its evaluation. It could be said that these challenges and the lack of a structural change-specific evaluation framework are responsible for uneven excellence across the primary health system. In other words, the reason why some interventions do well in terms of improving health outcomes whilst others 'drag their feet' exhibiting unexplained results, an inability to sustain change and lack value.

It may be that at the beginning of the intervention, the purpose of structural change is clear to all involved as outlined by the policy that originated it. However, it appears that during implementation chaos and unexpected responses from those receiving the change could be responsible for vision loss and thwarted efforts. This could encourage a loop in structural change interventions or, worse, induce reform fatigue (Wynen, Verhoest & Kleizen 2016) leaving the structural change efforts with little to show to immediate stakeholders within the first two years of initial investment.

Evaluating structural change in primary care is challenging as linkages between structural change and improved performance are non-linear and, therefore, hard to ascertain. Future structural change interventions aiming to have positive effects need to demonstrably relate linkages between health service delivery and patient outcomes and back to the structural change intervention. To this effect, government support is necessary. By providing resources and guidance, the government can ensure the structural change initiative's design has inbuilt monitoring and evaluation principles appropriate to structural change.

This research offers a definition of structural change applicable to primary care and proposes a multi-level evaluation tool for structural change that fosters accountability, is time-sensitive, dynamic, and adaptable to complex settings whilst maintaining focus on desirable outcomes: the Quadruple Aim.

## **8.6 Conclusion Summary**

This research addressed the aims and research questions established in sections 1.4 and 1.5 respectively by having identified the domains of structural change, conducted a modified Delphi study, adapted a tool suitable for the evaluation of structural change and developed and evaluation tool prototype. A definition of structural change in primary care has been drafted by this research including the identification of the features of structural change in primary care, how structural change differs from regular projects and programs that aim to achieve change, explored key issues in the evaluation of structural change within the context of primary care and the characteristics of a suitable evaluation framework and surveyed existing tools' ability to be adapted for their use in the evaluation of structural change in primary care.

Contributions can be summarised in the following ways:

- This research brings into convergence a wide array of notions about structural change to yield a preliminary definition of structural change in primary care,
- This research finds that context awareness and the Quadruple Aim are the main focus points in the evaluation of structural change interventions,
- This research proposes a multi-level framework for the evaluation of structural change in primary care that embeds the Quadruple Aim and easily adapts to all areas of health care and wider industry,
- This research proposes a prototype of the evaluation framework with application in General Practice.

This research helps recognise the challenges of structural change and its evaluation. It could be said that these challenges are responsible for uneven excellence across the primary health system; perhaps the reason why some interventions do well in terms of improving health outcomes whilst others ‘drag their feet’ exhibiting unexplained results, inability to sustain change and lacking in value.

It may be that at the beginning of the intervention, the purpose of structural change is clear to all involved as outlined by the policy that originated it. However, it appears that in some cases during implementation chaos and unexpected responses from those receiving the change may be responsible for vision loss and thwarted efforts. It was also found that the background of participants could have influenced the findings as their perception of structural change was somewhat impacted by the role they were occupying.

During the development of this research a further question arose, is it that structural change is plainly difficult to evaluate or that the policy responsible for its initiation is not well understood,

lacks clarity, or both? The answer is a matter for future research.

This research aspires to initiate conversations about structural change evaluation in primary care as public funds are invested periodically and there has been no clear linkage between outcomes and investment.

## References

- Allen, IE & Seaman, CA 2007, 'Likert scales and data analyses', *Quality progress*, vol. 40, no. 7, pp. 64–65.
- Amburgey, TL, Kelly, D & Barnett, WP 1990, 'Resetting the clock: The dynamics of organizational change and failure.', in *Academy of Management Proceedings*, vol. 1990, no. 1, pp. 160–164.
- Asada, Y, Lieberman, LD, Neubauer, LC, Hanneke, R & Fagen, MC 2017, 'Evaluating Structural Change Approaches to Health Promotion: An Exploratory Scoping Review of a Decade of US Progress', *Health Education & Behavior*, SAGE Publications Sage CA: Los Angeles, CA, pp. 153-156
- Ayanian, JZ & Markel, H 2016, 'Donabedian's Lasting Framework for Health Care Quality.', *The New England journal of medicine*, vol. 375, no. 3, p. 205.
- Aysola, J, Bitton, A, Zaslavsky, AM & Ayanian, JZ 2013, 'Quality and equity of primary care with patient-centered medical homes: results from a national survey', *Medical care*, vol. 51, NIH Public Access, no. 1, p. 68.
- Aysola, J, Werner, RM, Keddem, S, SoRelle, R & Shea, JA 2015, 'Asking the patient about patient-centered medical homes: a qualitative analysis', *Journal of general internal medicine*, vol. 30, Springer, no. 10, pp. 1461–1467.
- Basu, S, Meghani, A & Siddiqi, A 2017, 'Evaluating the health impact of large-scale public policy changes: classical and novel approaches', *Annual Review of Public Health*, vol. 38, Annual Reviews, pp. 351–370.
- Beilby, J 2016, 'Bettering the Evaluation and Care of Health (BEACH): A unique role in the evolution of Australian general practice', *Australian family physician*, vol. 45, Royal Australian College of General Practitioners, no. 12, p. 922.
- Berger, JG 2011, *Changing on the job: Developing leaders for a complex world*, Stanford: Stanford University Press.
- Birks, M, Davis, J & Chapman, Y 2015, *Professional and therapeutic communication / edited by Melanie Birks Davis, Jenny and Chapman, Ysanne.*, Melbourne: Oxford University Press.
- Bisgaard, JJ, Heise, M & Steffensen, C, 2004, 'How is Context and Context-awareness defined and Applied? A survey of Context-awareness', *Aalborg university*.
- Bitner, MJ, Ostrom, AL & Morgan, FN 2008, 'Service blueprinting: a practical technique for service innovation', *California management review*, vol. 50, SAGE Publications Sage CA: Los Angeles, CA, no. 3, pp. 66–94.
- Blankenburg, S, Palma, JG & Tregenna, F 2008, 'Structuralism', *The New Palgrave Dictionary of Economics: Volume 1-8*, Springer, pp. 6425–6430.

Blankenship, KM, Bray, SJ & Merson, MH 2000, 'Structural interventions in public health', *Aids*, vol. 14, LWW, pp. S11–S21.

Bodenheimer, T, Ghorob, A, Willard-Grace, R & Grumbach, K 2014, 'The 10 building blocks of high-performing primary care', *The Annals of Family Medicine*, vol. 12, Annals Family Med, no. 2, pp. 166–171.

Braithwaite, J, Westbrook, J & Iedema, R 2005, 'Restructuring as gratification.', *Journal of the Royal Society of Medicine*, vol. 98, no. 12, pp. 542–4.

Brown, RB, 2006, *Doing your dissertation in business and management: the reality of researching and writing*, Sage study skills, SAGE Publications Ltd, London.

Campbell, M, Fitzpatrick, R, Haines, A, Kinmonth, AL, Sandercock, P, Spiegelhalter, D & Tyrer, P 2000, 'Framework for design and evaluation of complex interventions to improve health', *BMJ: British Medical Journal*, vol. 321, BMJ Group, no. 7262, p. 694.

Carifio, J & Perla, R 2008, 'Resolving the 50-year debate around using and misusing Likert scales', *Medical Education*, vol. 42, Blackwell Publishing Ltd, no. 12, pp. 1150–1152.

Carley, KM & Hill, V 2001, 'Structural change and learning within organizations', *Dynamics of organizations: Computational modeling and organizational theories*, MIT Press, Cambridge/AAAI Press, Live Oak, CA, pp. 63–92.

Carroll, C, Booth, A & Cooper, K 2011, 'A worked example of "best fit" framework synthesis: a systematic review of views concerning the taking of some potential chemo preventive agents', *BMC medical research methodology*, vol. 11, BioMed Central, no. 1, p. 29.

Checkland, K 2007, 'Understanding general practice: a conceptual framework developed from case studies in the UK NHS', *Br J Gen Pract*, vol. 57, British Journal of General Practice, no. 534, pp. 56–63.

Cockerill, R & Lemieux Charles, L 1998, 'A Framework for Evaluating Organizational Change in Health Care Agencies and Facilities', *The Canadian Journal of Program Evaluation*, vol. 13, no. 1, p. 139.

Coid, DR & Davies, H 2008, 'Structural change in health care: what's the attraction?', *Journal of the Royal Society of Medicine*, vol. 101, no. 6, pp. 278–81.

Cole, ZD, Donohoe, HM & Stellefson, ML 2013, 'Internet-based Delphi research: Case based discussion', *Environmental management*, vol. 51, Springer, no. 3, pp. 511–523.

Coleman, K, Wagner, E, Schaefer, J & Reid, R 2016, 'Redefining primary care for the 21st century', *Rockville, MD: Agency for Healthcare Research and Quality*.

Colman, AM, Norris, CE & Preston, CC 1997, 'Comparing rating scales of different lengths: Equivalence of scores from 5-point and 7-point scales', *Psychological Reports*, vol. 80, SAGE Publications Sage CA: Los Angeles, CA, no. 2, pp. 355–362.



Commonwealth of Australia 2016, 'Better Outcomes for people with Chronic and Complex Health Conditions' Primary Health Care Advisory Group, available: [https://www1.health.gov.au/internet/main/publishing.nsf/Content/76B2BDC12AE54540CA257F72001102B9/\\$File/Primary-Health-Care-Advisory-Group\\_Final-Report.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/76B2BDC12AE54540CA257F72001102B9/$File/Primary-Health-Care-Advisory-Group_Final-Report.pdf), accessed 22 April 2017.

Connolly, E & Lewis, C 2010, 'Structural change in the Australian economy', *RBA Bulletin*, September, pp. 1–9.

Cooren F, Thompson F, Canestraro D, & Bodor T, 2006, 'From agency to structure: Analysis of an episode in a facilitation process', *Human Relations*, vol. 59, no. 4, pp.533-565.

Cumming, J, Dunn, P, Middleton, L & O'Loughlin, C 2018, 'The health care home in New Zealand: rolling out a new model of primary health care', *Journal of Integrated Care*, vol. 26, Emerald Publishing Limited, no. 3, pp. 242–252.

Day, J & Bobeva, M 2005, 'A generic toolkit for the successful management of Delphi studies', *The Electronic Journal of Business Research Methodology*, vol. 3, no. 2, pp. 103–116.

Denis, J-L, Hébert, Y, Langley, A, Lozeau, D & Trottier, L-H 2002, 'Explaining diffusion patterns for complex health care innovations', *Health care management review*, vol. 27, LWW, no. 3, pp. 60–73.

Department of Health 2017, 'Review of Australia's Health System Performance Information and Reporting Frameworks', available: <https://www.healthperformanceframeworksreview.com.au/the-current-state-of-the-frameworks>, accessed February 2018.

Department of Health 2017, "Health Care Homes: For Health Professionals", available: [www.health.gov.au/healthcarehomes](http://www.health.gov.au/healthcarehomes), accessed 25 August 2017.

Department of Health 2016, 'Primary Health Networks: Grant Programme Guidelines', Australian Government Canberra, available: [https://www1.health.gov.au/internet/main/publishing.nsf/Content/F4F85B97E22A94CACA257F86007C7D1F/\\$File/Primary%20Health%20Network%20Grant%20Programme%20Guidelines%20-%20V1.2%20February%202016.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/F4F85B97E22A94CACA257F86007C7D1F/$File/Primary%20Health%20Network%20Grant%20Programme%20Guidelines%20-%20V1.2%20February%202016.pdf), accessed 11 April 2017.

Department of Health and Ageing 2010, 'Building a 21st century primary health care system: Australia's first national primary health care strategy', Commonwealth of Australia Canberra, available: <https://extranet.who.int/nutrition/gina/sites/default/files/AUS%202010%20Building%20a%2021st%20Century%20Primary%20Health%20Care%20System%2C%20Australia%27s%20First%20National%20Primary%20Health%20Care%20Strategy.pdf>, accessed 26 September 2017.

Department of Health and Ageing 2010b, 'Evaluation of the Healthy Communities Initiative Pilot Phase', available: [http://www.health.gov.au/internet/healthyactive/publishing.nsf/Content/41E9E90A01C36513CA2577E00015B029/\\$File/Program%20guidelines%20attD.pdf](http://www.health.gov.au/internet/healthyactive/publishing.nsf/Content/41E9E90A01C36513CA2577E00015B029/$File/Program%20guidelines%20attD.pdf), accessed 20 Oct 2017.

de Villiers, MR, de Villiers, PT, & Kent, AP 2005, 'The Delphi technique in health sciences education research', *Medical Teacher*, vol. 27, no. 7, pp. 639-643.

Dey, A & Abowd, G 2000, 'Towards a Better Understanding of Context and Context-Awareness', in *Technical report git-gvu-99-22*, pp. 304–307.

Dixon-Woods, M 2011, 'Using framework-based synthesis for conducting reviews of qualitative studies', *BMC medicine*, vol. 9, BioMed Central, no. 1, p. 39.

Domingo, C & Tonella, G 2000, 'Towards a theory of structural change', *Structural Change and Economic Dynamics*, vol. 11, no. 1-2, pp. 209–225.

Donabedian, A 1966, 'Evaluating the quality of medical care', *The Milbank memorial fund quarterly*, vol. 44, JSTOR, no. 3, pp. 166–206.

Donato, R & Segal, L 2010, 'The economics of primary healthcare reform in Australia-towards single fundholding through development of primary care organisations', *Australian and New Zealand journal of public health*, vol. 34, Wiley Online Library, no. 6, pp. 613–619.

Dowrick, C 2017, *Person-centred Primary Care: Searching for the Self*, Routledge.

Dragow, F, Chernyshenko, OS & Stark, S 2010, '75 years after Likert: Thurstone was right!', *Industrial and Organizational Psychology*, vol. 3, Cambridge University Press, no. 4, pp. 465–476.

Duckett, SJ 2008, 'The Australian health care system: reform, repair or replace?', *Australian Health Review*, vol. 32, CSIRO, no. 2, pp. 322–329.

Dwyer, JM 2004, 'Australian health system restructuring-what problem is being solved?', *Australia and New Zealand health policy*, vol. 1, BioMed Central, no. 1, p. 6.

Ellis, LA, Churruca, K & Braithwaite, J 2017, 'Mental health services conceptualised as complex adaptive systems: what can be learned?', *International journal of mental health systems*, vol. 11, BioMed Central, no. 1, p. 43.

Ernst & Young 2017, 'Evaluation of the New Zealand Health Care Home, 2010-2016', available: <http://www.healthcarehome.co.nz/wp-content/uploads/2017/03/EY-Health-Care-Home-Evaluation-2017.pdf>, accessed 19 August 2017.

European Commission 2017, 'Structural Reforms for Economic Growth', available: [https://ec.europa.eu/info/business-economy-euro/growth-and-investment/structural-reforms/structural-reforms-economic-growth\\_en](https://ec.europa.eu/info/business-economy-euro/growth-and-investment/structural-reforms/structural-reforms-economic-growth_en), accessed 14 April 2018.

Evans, WD, Christoffel, KK, Necheles, JW & Becker, AB 2010, 'Social marketing as a childhood obesity prevention strategy', *Obesity*, vol. 18, Wiley Online Library, no. S1.

Fanany, R & Fanany, D 2012, *Health as a social experience* / Rebecca Fanany, David Fanany, Palgrave Macmillan, available at: <https://search-ebsohost-com.ezproxy.uow.edu.au/login.aspx?direct=true&db=cat03332a&AN=uow.b1994269&site=eds-live>, viewed 5 May 2019.

Feldman MS 2000, 'Organizational routines as a source of continuous change', *Organisation Science*, vol. 11, no. 6, pp. 611-629.

Ferlie, E, Fitzgerald, L, Wood, M & Hawkins, C 2005, 'The nonspread of innovations: the mediating role of professionals', *Academy of management journal*, vol. 48, Academy of Management Briarcliff Manor, NY 10510, no. 1, pp. 117-134.

Fernandez, S & Rainey, HG 2006, 'Managing successful organizational change in the public sector', *Public administration review*, vol. 66, Wiley Online Library, no. 2, pp. 168-176.

Fiol, CM & Lyles, MA 1985, 'Organizational learning', *Academy of management review*, vol. 10, Academy of Management Briarcliff Manor, NY 10510, no. 4, pp. 803-813.

Fitzgerald, J, 2015, 'Options for Finance in Primary Care in Australia: Summary', Deeble Institute, available at [https://ahha.asn.au/system/files/docs/publications/summary\\_deeble\\_institute\\_issues\\_brief\\_no\\_11\\_fitgerald\\_2.pdf](https://ahha.asn.au/system/files/docs/publications/summary_deeble_institute_issues_brief_no_11_fitgerald_2.pdf)

Frank, C, Novokowsky, B & Zummer, M 2012, 'Tool for developing and evaluating models of care: created by the musculoskeletal stakeholder community', *Toronto: Arthritis Alliance of Canada*.

Gadiel D and Sammut J, 2017, 'Ending the Blame Game: Federalism and Health', *Journal of Public Policy and Ideas*, vol. 33, no. 3, p.26.

Gardner, K 2019, *Primary Health Networks caught between a rock and a hard place*, viewed 5 October 2019, <<https://www.themandarin.com.au/105124-primary-health-networks-caught-between-a-rock-and-a-hard-place/>>.

Gelin, MN, Beasley, TM, Zumbo, BD, Zumbo, IB & Ochieng, C 2003, 'What is the impact on scale reliability and exploratory factor analysis of a Pearson correlation matrix when some respondents are not able to follow the rating scale', in *annual meeting of the American Educational Research Association (AERA) in Chicago, Illinois*.

Gill, FJ, Leslie, GD, Grech, C & Latour, JM 2013, 'Using a web-based survey tool to undertake a Delphi study: application for nurse education research', *Nurse Education Today*, vol 33, no.11, pp.1322-1328.

Gill, L, Bradley, S, Cameron, I & Ratcliffe, J, 'How do clients in Australia experience Consumer Directed Care?', *BMC Geriatrics*, vol. 18, no. 1, pp. 1-12.

Goldman, RE, Parker, DR, Brown, J, Walker, J, Eaton, CB & Borkan, JM 2015, 'Recommendations for a mixed methods approach to evaluating the patient-centered medical home', *The Annals of Family Medicine*, vol. 13, Annals Family Med, no. 2, pp. 168-175.

Gordon, TJ 1994, 'The Delphi method', *Futures research methodology*, vol. 2, American Council for the United Nations University Washington, DC, no. 3, pp. 1-30.

- Greenhalgh, T 2007, *Primary health care: theory and practice*, John Wiley & Sons.
- Greenhalgh, T, Macfarlane, F, Barton-Sweeney, C & Woodard, F 2012, 'If we build it, will it stay? A case study of the sustainability of whole-system change in London.', *The Milbank quarterly*, vol. 90, no. 3, pp. 516–47.
- Greenhalgh, T & Papoutsis, C 2018, 'Studying complexity in health services research: desperately seeking an overdue paradigm shift', *BioMed Central*.
- Grielen, SJ, Boerma, WG & Groenewegen, PP 2000, 'Science in practice: can health care reform projects in central and eastern Europe be evaluated systematically?', *Health Policy*, vol. 53, Elsevier, no. 2, pp. 73–89.
- Grol, R, Wensing, M, Eccles, M & Davis, D 2013, *Improving patient care: the implementation of change in health care*, John Wiley & Sons.
- Gubert, LC, da Costa, CA & da Rosa Righi, R 2019, 'Context awareness in healthcare: a systematic literature review', *Universal Access in the Information Society*, Springer, pp. 1–15.
- Gupta, GR, Parkhurst, JO, Ogden, JA, Aggleton, P & Mahal, A 2008, 'Structural approaches to HIV prevention', *The Lancet*, vol. 372, Elsevier, no. 9640, pp. 764–775.
- Hahn, KA, Gonzalez, MM, Etz, RS & Crabtree, BF 2014, 'National Committee for Quality Assurance (NCQA) patient-centered medical home (PCMH) recognition is suboptimal even among innovative primary care practices', *The Journal of the American Board of Family Medicine*, vol. 27, no. 3, pp. 312–313.
- Hannan, MT & Freeman, J 1984, 'Structural inertia and organizational change', *American sociological review*, JSTOR, pp. 149–164.
- Harpe, SE 2015, 'How to analyze Likert and other rating scale data', *Currents in Pharmacy Teaching and Learning*, vol. 7, Elsevier, no. 6, pp. 836–850.
- Harris, PA, Taylor, R, Thielke, R, Payne, J, Gonzalez, N & Conde, JG 2009, 'Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support', *Journal of biomedical informatics*, vol. 42, Elsevier, no. 2, pp. 377–381.
- Hasson, F & Keeney, S 2011, 'Enhancing rigour in the Delphi technique research', *Technological Forecasting and Social Change*, vol. 78, Elsevier, no. 9, pp. 1695–1704.
- Hawe, P, King, L, Noort, M, Gifford, SM & Lloyd, B 1998, 'Working invisibly: health workers talk about capacity-building in health promotion', *Health Promotion International*, vol. 13, Oxford University Press, no. 4, pp. 285–295.
- Hawe, P, Noort, M, King, L & Jordens, C 1997, 'Multiplying health gains: the critical role of capacity-building within health promotion programs', *Health policy*, vol. 39, Elsevier, no. 1, pp. 29–42.

Hawe, P, Shiell, A & Riley, T 2004, 'Complex interventions: how "out of control" can a randomised controlled trial be?', *BMJ*, vol. 328, British Medical Journal Publishing Group, no. 7455, pp. 1561–1563.

Haydam, N & Steenkamp, P 2020, 'A Methodological Blueprint for Social Sciences Research—The Social Sciences Research Methodology Framework', *EIRP Proceedings*, vol 15, p. 1.

Health Policy Analysis (HPA) 2018, 'Health Care Homes: Guide to the Evaluation for Practices', available:  
[https://www.hchevaluation.com/images/Practice\\_resources/Guide\\_to\\_evaluation\\_for\\_practices\\_-\\_Version\\_2.4\\_-\\_20182901.pdf](https://www.hchevaluation.com/images/Practice_resources/Guide_to_evaluation_for_practices_-_Version_2.4_-_20182901.pdf), accessed 24 February 2019.

Helms-Mills, J, Dye, K & Mills, AJ 2008, *Understanding organizational change*, Routledge.

Hoffman, SJ, Röttingen, J-A, Bennett, S, Lavis, JN, Edge, JS & Frenk, J 2012, 'Background paper on conceptual issues related to health systems research to inform a WHO global strategy on health systems research', *Health Systems Alliance*.

Hogan, RL 2007, 'The historical development of program evaluation: Exploring past and present', *Online Journal for Workforce Education and Development*, vol. 2, no. 4, p.5.

Hong, S & Park, N 2019, 'Administrative reorganization as a signal: Bounded rationality, agency merger, and salience of policy issues', *Governance*, Wiley Online Library.

Hsu, C-C & Sandford, BA 2007, 'The Delphi technique: making sense of consensus', *Practical assessment, research & evaluation*, vol. 12, no. 10, pp. 1–8.

Jacoby, J & Matell, MS 1971, 'Three-point Likert scales are good enough', SAGE Publications Sage CA: Los Angeles, CA.

Jolley, GM, Baum, F, Lawless, AP & Hurley, CJ 2008, *Transformational change in health systems: a road strewn with obstacles.*, South Australian Community Health Research Unit.

Jones, JM 2003, 'Dual or dueling culture and commitment: The impact of a tri-hospital merger.', *The Journal of nursing administration*, vol. 33, no. 4, pp. 235–242.

Keeney, S, McKenna, H & Hasson, F 2011, *The Delphi technique in nursing and health research*, John Wiley & Sons.

Kent 2005, *Anamorphosis*, viewed 20 July 2018, <[www.anamorphosis.com](http://www.anamorphosis.com)>.

Korenstein, D, Duan, K, Diaz, MJ, Ahn, R & Keyhani, S 2016, 'Do health care delivery system reforms improve value? The jury is still out', *Medical care*, vol. 54, NIH Public Access, no. 1, p. 55.

Kringos, D, Boerma, W, Bourgueil, Y, Cartier, T, Dedeu, T, Hasvold, T, Hutchinson, A, Lember, M, Oleszczyk, M, Pavlic, DR & others 2013, 'The strength of primary care in Europe: an international comparative study', *Br J Gen Pract*, vol. 63, British Journal of General Practice, no. 616, pp. 742–750.

Kringos, DS, Boerma, WG, Hutchinson, A, van der Zee, J & Groenewegen, PP 2010a, 'The breadth of primary care: a systematic literature review of its core dimensions', *BMC health services research*, vol. 10, BioMed Central, no. 1, p. 65.

Lawless, A & Baum, F 2014, 'HCSCC discussion paper', *Primary health care in South Australia*. Southgate Institute for Health, Society and Equity, Flinders University: Adelaide, SA, Australia. Available at <http://www.hcsc.sa.gov.au/wp-content/uploads/2014/10/HCSCC-discussion-paper-on-Primary-Health-Care-in-South-Australia.pdf>, accessed 5 June 2017.

Leavy, P 2017, *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*, Guilford Publications.

Lees, M & Taylor, G 2004, 'Mergers and the new workplace: The effects of a merger of two emergency departments on nursing staff', *Journal of health and human services administration*, JSTOR, pp. 470–484.

Lieberman, H & Selker, T 2000, 'Out of context: Computer systems that adapt to, and learn from, context', *IBM systems journal*, vol. 39, IBM, no. 3.4, pp. 617–632.

Lieberman, L, Golden, SD & Earp, JAL 2013, 'Structural approaches to health promotion: What do we need to know about policy and environmental change?', *Health Education & Behavior*, vol. 40, Sage Publications Sage CA: Los Angeles, CA, no. 5, pp. 520–525.

Lowe, P 2012, 'The changing structure of the Australian economy and monetary policy', Address to the Australian Industry Group 12th Annual Economic Forum, Sydney, 7 March 2012, accessed 18 November 2013'.

Maar, MA, Yeates, K, Perkins, N, Boesch, L, Hua-Stewart, D, Liu, P, Sleeth, J & Tobe, SW 2017, 'A framework for the study of complex mHealth interventions in diverse cultural settings', *JMIR mHealth and uHealth*, vol. 5, JMIR Publications Inc., Toronto, Canada, no. 4, p. e47.

Mackee, N 2017, 'Budget 2017: Health Care Homes Postponement Welcomed', *MJA InSight*, issue 18, available: <https://www.doctorportal.com.au/mjainsight/2017/18/budget-2017-health-care-homes-postponement-welcomed/> (accessed 28 August 2017)

Maidment I, Booth A, Mullan J, McKeown, J, Bailey S & Wong G 2017, 'Developing a framework for a novel multi-disciplinary, multi-agency intervention to improve medication management in community-dwelling older people on complex medication regimens –a realist synthesis', *Systematic reviews*, vol.6, no. 1, p.125.

Martsof, GR, Kandrack, R, Schneider, EC & Friedberg, MW 2015, 'Categories of practice transformation in a statewide medical home pilot and their association with medical home recognition', *Journal of general internal medicine*, vol. 30, Springer, no. 6, pp. 817–823.

Masso, M, Quinsey, K & Fildes, D 2016, 'Evolution of a multilevel framework for health program evaluation.', *Australian health review : a publication of the Australian Hospital Association*.

Matsuyama, K 2008, 'Structural change', *The New Palgrave Dictionary of Economics: Volume 1-8*, Springer, pp. 6408–6411.

Mazzucato, M 2015, 'The innovative state', *Foreign Affairs*, vol. 94, Council on Foreign Relations, no. 1, pp. 7–8.

McAllister, JW, Sherrieb, K & Cooley, WC 2009, 'Improvement in the Family-Centered Medical Home Enhances Outcomes for Children and Youth With Special Healthcare Needs', *The Journal of ambulatory care management*, vol. 32, LWW, no. 3, pp. 188–196.

McGorry, P, Bates, T & Birchwood, M 2013, 'Designing youth mental health services for the 21st century: examples from Australia, Ireland and the UK', *The British Journal of Psychiatry*, vol. 202, Cambridge University Press, no. s54, pp. s30–s35.

McNellis RJ, Genevro JL & Meyers DS 2013, 'Lessons learned from the study of primary care transformation', *Annals of Family Medicine*, vol. 11, pp. 1–5.

Mertens D, & Wilson A, 2012, 'Program Evaluation Theory and Practice: A Comprehensive Guide', *Guilford Publications*, ProQuest Ebook Central, available:  
<http://ebookcentral.proquest.com.ezproxy.uow.edu.au/lib/uow/detail.action?docID=869331>

Miller, GA 1956, 'The magical number seven, plus or minus two: Some limits on our capacity for processing information.', *Psychological review*, vol. 63, American Psychological Association, no. 2, p. 81.

Milstein, B & Wetterhall, SF 1999, 'Framework for program evaluation in public health'.

Mock, TJ 1972, 'A decision tree approach to the methodological decision process', *The Accounting Review*, vol. 47, JSTOR, no. 4, pp. 826–829.

Morgan, GA, Leech, NL, Gloeckner, GW & Barrett, KC 2012, *IBM SPSS for introductory statistics: Use and interpretation*, Routledge.

Mounier-Jack, S, Griffiths, UK, Closser, S, Burchett, H & Marchal, B 2014, 'Measuring the health systems impact of disease control programmes: a critical reflection on the WHO building blocks framework', *BMC public health*, vol. 14, BioMed Central, no. 1, p. 278.

Muir, K, McDermott, S, Gendera, S, Flaxman, S, Patulny, R, Sitek, T, Abello, D, Oprea, I & Katz, I 2009, 'Independent evaluation of headspace: the National Youth Mental Health Foundation: interim evaluation report', *Sydney: Social Policy Research Centre UNSW*.

Musson, A & Stebbings, C (eds) 2012, 'Making Legal History: Approaches and Methodologies', Cambridge University Press, Cambridge, available at ProQuest eBook Central.

National Health and Hospitals Reform Commission 2009, A healthier future for all Australians: final report June 2009, Department of Health and Ageing, available:  
[http://www.cotasa.org.au/cms\\_resources/documents/news/nhhrc\\_report.pdf](http://www.cotasa.org.au/cms_resources/documents/news/nhhrc_report.pdf), accessed 13 February 2017.

OECD 2015, 'OECD Reviews of Health Care Quality: Australia 2015: Raising Standards', available: [10.1787/9789264233836-en](https://doi.org/10.1787/9789264233836-en), accessed 31 October 2017.

Oliver, SR, Rees, RW, Clarke-Jones, L, Milne, R, Oakley, AR, Gabbay, J, Stein, K, Buchanan, P & Gyte, G 2008, 'A multidimensional conceptual framework for analysing public involvement in health services research', *Health Expectations*, vol. 11, Wiley Online Library, no. 1, pp. 72–84.

Owen A, Perkins D, Senior K, Eagar K, 2001, 'The Griffith Area Palliative Care Service: a baseline assessment of its evaluability, sustainability and generalisability', *Centre for Health Service Development*, University of Wollongong.

Ozcan, YA & Khushalani, J 2016, 'Assessing efficiency of public health and medical care provision in OECD countries after a decade of reform', *Central European Journal of Operations Research*, vol. 25, Springer, no. 2, pp. 325–343.

Park, B, Gold, SB, Bazemore, A & Liaw, W 2018, 'How evolving United States payment models influence primary care and its impact on the quadruple aim', *J Am Board Fam Med*, vol. 31, Am Board Family Med, no. 4, pp. 588–604.

Petticrew, M, Whitehead, M, Macintyre, SJ, Graham, H & Egan, M 2004, 'Evidence for public health policy on inequalities: 1: the reality according to policymakers.', *Journal of epidemiology and community health*, vol. 58, no. 10, pp. 811–6.

Pettigrew, A, Ferlie, E & McKee, L 1992, 'Shaping strategic change-The case of the NHS in the 1980s', *Public Money & Management*, vol. 12, Taylor & Francis, no. 3, pp. 27–31.

Pollitt, C 2009, 'Structural change and public service performance: international lessons?', *Public Money & Management*, vol. 29, no. 5, pp. 285–291.

Pornel, JB 2009, 'A new model for Likert Scale data analysis', *Philippine Journal of Natural Sciences Vol*, vol. 14, no. 1, pp. 41–46.

Preston, CC & Colman, AM 2000, 'Optimal number of response categories in rating scales: reliability, validity, discriminating power, and respondent preferences.', *Acta psychologica*, vol. 104, no. 1, pp. 1–15.

Primary Health Care Advisory Group 2015, 'Better Outcomes for People with Chronic and Complex Health Conditions', available: [https://www.health.gov.au/internet/main/publishing.nsf/Content/76B2BDC12AE54540CA257F72001102B9/\\$File/Primary-Health-Care-Advisory-Group\\_Final-Report.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/76B2BDC12AE54540CA257F72001102B9/$File/Primary-Health-Care-Advisory-Group_Final-Report.pdf), accessed 22 August 2017.

Pronyk, P, Schaefer, J, Somers, M-A & Heise, L 2012, 'Evaluating structural interventions in public health: Challenges, options and global best-practice', *Structural approaches in public health*, New York: Routledge Press.

Rainey HG 2014, 'Understanding and Managing Public Organizations', John Wiley & Sons, Incorporated, New York, NY. Available from: ProQuest Ebook Central, accessed 11 October 2017.



- Reeve, C, Humphreys, J & Wakerman, J 2015, 'A comprehensive health service evaluation and monitoring framework', *Evaluation and program planning*, vol. 53, Elsevier, pp. 91–98.
- Reich, A & Turnbull, M 2018, 'Using Foucault: Genealogy, Governmentality and the Problem of Chronic Illness', *Genealogy*, vol. 2, Multidisciplinary Digital Publishing Institute, no. 2, p. 13.
- Rickwood, D, Van Dyke, N & Telford, N 2015, 'Innovation in youth mental health services in Australia: common characteristics across the first headspace centres', *Early intervention in psychiatry*, vol. 9, Wiley Online Library, no. 1, pp. 29–37.
- Rist RC, Martin, FP & Fernandez, AM 2015, 'Poverty, Inequality, and Evaluation: Changing Perspectives', *World Bank Publications*, Washington, D. C., available from: ProQuest Ebook Central, accessed 18 October 2017.
- Rittenhouse, D, Casalino, L, Gillies, R, Shortell, S & Lau, B 2008, 'Measuring the Medical Home Infrastructure in Large Medical Groups', *Health Affairs*, vol. 27, no.5, pp. 1246-1258.
- Rix, M, Owen, A & Eagar, K 2005, '(Re) form with Substance? Restructuring and governance in the Australian health system 2004/05', *Australia and New Zealand health policy*, vol. 2, BioMed Central, no. 1, p. 19.
- Roald, J & Edgren, L 2001, 'Employee experience of structural change in two Norwegian hospitals', *The International journal of health planning and management*, vol. 16, Wiley Online Library, no. 4, pp. 311–324.
- Roller, MR, & Lavrakas, PJ 2015, *Applied Qualitative Research Design: A Total Quality Framework Approach*, Guilford Publications, New York, available from: ProQuest Ebook Central, accessed 10 December 2017.
- Rule, J, Dunston, R, & Solomon, N, 2017, 'Remaking practices in the redesign of a Primary healthcare Program', *Asia Pacific Journal of Health Management*, vol. 12, Australian College of Health Service Executives, no. 1, p. 36.
- Russell, L, & Dawda, P 2019, *The role of Primary Health Networks in the delivery of primary care reforms*, available: <https://apo.org.au/sites/default/files/resource-files/2019/02/apo-nid220956-1333561.pdf>, accessed 27 September 2019
- Sabatier, P & Mazmanian, D, 1980, 'The implementation of public policy: A framework of analysis', *Policy Studies Journal*, vol 8, no. 4, pp.538-560.
- Saldaña, J 2013, *The coding manual for qualitative researchers*, Arizona State University: SAGE Publications Ltd,
- Samuelson CD 1993, 'A Multiattribute Evaluation approach to Structural Change in resource Dilemmas', *Organizational Behavior and Human Decision Processes*, vol 55, no. 2, pp.298-324.
- Saunders, M, Lewis, P & Thornhill, A 2019, 'Research methods', *Business Students*.
- Saunders, RP, Evans, AE, Kenison, K, Workman, L, Dowda, M & Chu, YH 2013, 'Conceptualizing, implementing, and monitoring a structural health promotion intervention in an

organizational setting.’, *Health promotion practice*, vol. 14, no. 3, pp. 343–53.

Schell SF, Luke DA, Schooley, MW, Elliott, MB, Herbers, SH, Mueller, NB & Bunger, AC 2013, ‘Public Health Program Capacity for Sustainability: A New Framework’, *Implementation Science*, vol 8, no.1, pp.15

Scott, EA & Black, N 1991, ‘When does consensus exist in expert panels?’, *Journal of Public Health*, vol. 13, Oxford University Press, no. 1, pp. 35–39.

Scott, WR 2005, ‘Institutional theory: Contributing to a theoretical research program’, *Great minds in management: The process of theory development*, vol. 37, no. 2005, pp. 460–484.

Shah, HA & Kalaian, SA 2009, ‘Which is the best parametric statistical method for analyzing Delphi data?’, *Journal of Modern Applied Statistical Methods*, vol. 8, no. 1, p. 20.

Shore D 2014, ‘Launching and Leading Change Initiatives in Health Care Organizations: Managing Successful Projects’ John Wiley & Sons, Incorporated, ProQuest eBook Central

Shostack, GL 1987, ‘Service positioning through structural change’, *The Journal of Marketing*, JSTOR, pp. 34–43.

Skulmoski, GJ, Hartman, FT & Krahn, J 2007, ‘The Delphi method for graduate research’, *Journal of information technology education*, vol. 6, Informing Science Institute, p. 1.

Sommer, M & Parker, R 2013, *Structural approaches in public health*, Routledge.

Sullivan, GM & Artino Jr, AR 2013, ‘Analyzing and interpreting data from Likert-type scales’, *Journal of graduate medical education*, vol. 5, The Accreditation Council for Graduate Medical Education Suite 2000, no. 4, pp. 541–542.

Stewart D, Gibson-Smith K, MacLure K, Mair A, Alonso, A, Codina, C, Cittadini, A, Fernandez-Llimos, F, Fleming, G., Gennimata, D. and Gillespie, U 2017, 'A modified Delphi study to determine the level of consensus across the European Union on the structures, processes and desired outcomes of the management of polypharmacy in older people', *PLoS One*, vol. 12, pp. 1-17.

Sugarman JR, Phillips KE, Wagner EH 2014, ‘The Safety Net Medical Home Initiative: transforming care for vulnerable populations’, *Medical Care*, vol 52, no. 4, pp. 1–10.

Swerissen, H, Duckett, S & Moran, G 2018, 'Mapping primary care in Australia', *Grattan Institute*, available: <https://grattan.edu.au/wp-content/uploads/2018/07/906-Mapping-primary-care.pdf>, accessed 23 July 2019.

Swerissen, H, Duckett, S & Wright, J 2016, 'Chronic failure in primary care', *Grattan Institute Melbourne*, available: <https://grattan.edu.au/wp-content/uploads/2016/03/936-chronic-failure-in-primary-care.pdf>, accessed 23 May 2018.

Tavakol, M & Dennick, R 2011, ‘Making sense of Cronbach’s alpha’, *International journal of medical education*, vol. 2, IJME, p. 53.

The Economist (Anon) 2017, 'What structural reform is and why it is important', available: <https://www.economist.com/blogs/economist-explains/2014/12/economist-explains-5>

Thiry, M 2016, *Program management*, Routledge.

Thompson, C, Quinsey, K, Gordon, R, Williams, K, Eckermann, S, Andersen, P, Snoek, M & Eagar, K 2012, *Health Workforce Australia Expanded Scopes of Practice Program: evaluation framework.*, Centre for Health Service Development, University of Wollongong.

Toop, L 2017, 'Unpicking the "Health Care Home model" -How is it being described and implemented in New Zealand', <http://www.brisbanenorthphn.org.au/content/Document/MNHF%20presentations%202017/Les%20Toop%20-%20Unpicking%20the%20Health%20Care%20Home%20Model%20170531.pdf>.

Topper, D 2000, 'On anamorphosis: Setting some things straight', *Leonardo*, vol. 33, MIT Press, no. 2, pp. 115–124.

Tushman, ML & Romanelli, E 1985, 'Organizational evolution: A metamorphosis model of convergence and reorientation.', *Research in organizational behavior*, JAI Press, Inc.

De Villiers, MR, De Villiers, PJ & Kent, AP 2005, 'The Delphi technique in health sciences education research', *Medical teacher*, vol. 27, no. 7, pp. 639–643.

Westerman, M, 2006, 'Quantitative research as an interpretive enterprise: The mostly unacknowledged role of interpretation in research efforts and suggestions for explicitly interpretive quantitative investigations', *New Ideas in Psychology*, vol. 24, no. 3, pp.189-211.

White, P & Wylie, A 2004, *A Textbook of General Practice Second Edition*, CRC Press.

Wight, D, Wimbush, E, Jepson, R & Doi, L 2016, 'Six steps in quality intervention development (6SQuID)', *J Epidemiol Community Health*, vol. 70, BMJ Publishing Group Ltd, no. 5, pp. 520–525.

Wynen, J, Verhoest, K & Kleizen, B 2016, 'More reforms, less innovation? The impact of reform histories on innovation-oriented cultures in the public sector'.

You, EC, Dunt, D & Doyle, C 2017, 'How would case managers' practice change in a consumer-directed care environment in Australia?', *Health & social care in the community*, vol. 25, Wiley Online Library, no. 1, pp. 255–265.

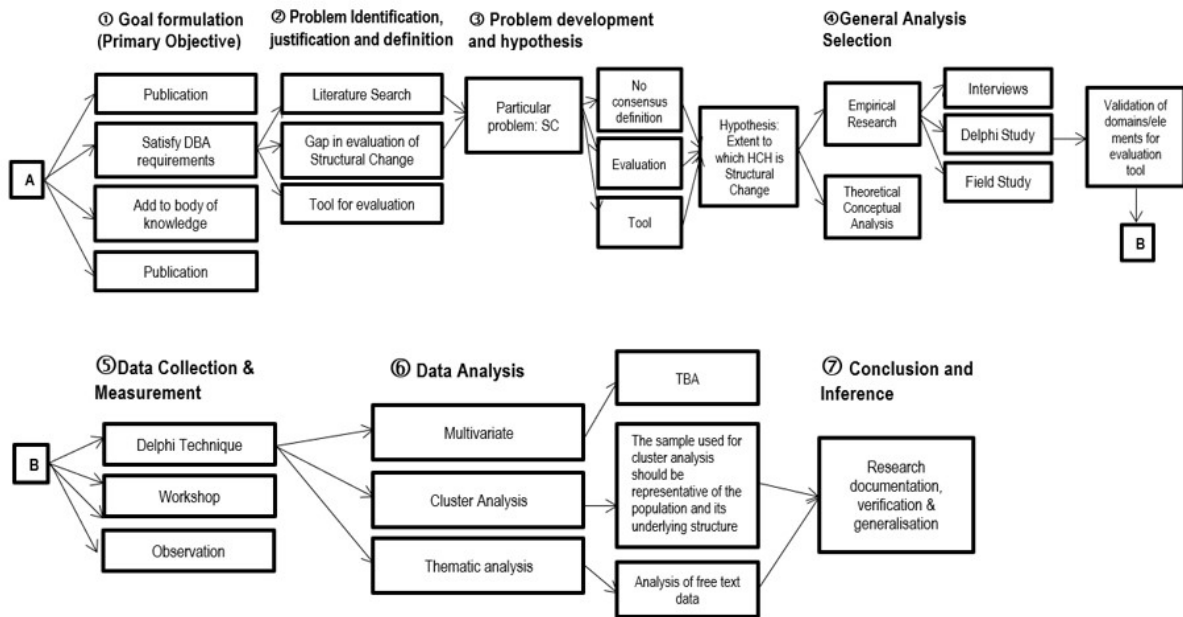
Yousuf, MI 2007, 'Using experts' opinions through Delphi technique', *Practical assessment, research & evaluation*, vol. 12, no. 4, pp. 1–8.

Zefeiti, S & Mohamad, N 2015, 'Methodological considerations in studying transformational leadership and its outcomes', *International Journal of Engineering Business Management*, SAGE Publications Sage UK, London, England, vol. 7, p. 10.

Zlateva, I, Anderson, D, Coman, E, Khatri, K, Tian, T & Fifield, J 2015, 'Development and validation of the Medical Home Care Coordination Survey for assessing care coordination in the primary care setting from the patient and provider perspectives', *BMC health services research*,

vol. 15, BioMed Central, no. 226, pp. 1–11.

# Appendix 1 Methodological Decision Tree



Methodological Decision Tree. Adapted from Mock, pp. 826-829, 1972

## **Appendix 2 Delphi Study Questionnaire Round 2**

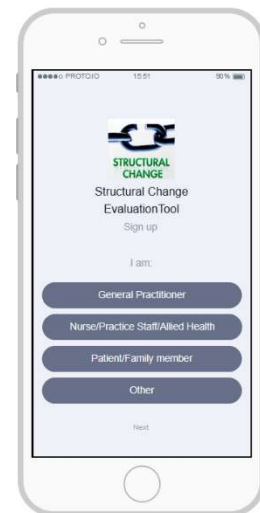
The Delphi questionnaire is available upon request at the Australian Health Services Research Institute (AHSRI). Contact details at <https://www.uow.edu.au/ahsri>.

## Appendix 3 Prototype - Supplementary to Chapter 6

The following steps show the process by which a General Practitioner hypothetically would populate the evaluation tool with their own data. This example was designed by the author of this thesis based on the adapted CHSD tool and the Health Care Home (HCH) initiative both referenced in section 6.4.2.1.2 in Chapter 6.

### 1. Sign up.

To sign up, the tool refers the user to choose one of the four categories of users available. The general practitioner clicks on the 'General Practitioner' tab.



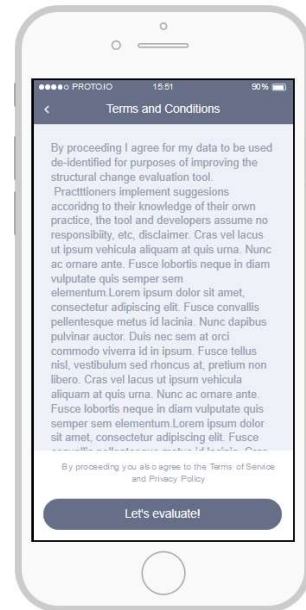
### 2. User Profile.

The General Practitioner completes the sign-up form by entering information about their practice including location. Collecting this data will help with further development of the tool if the user agrees in the next screen.



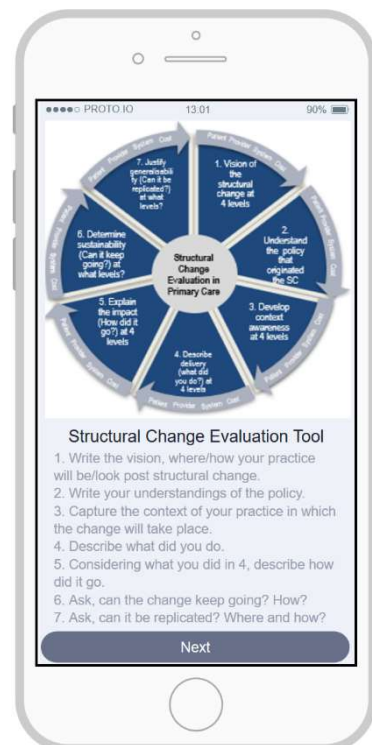
### 3. User agrees to T&Cs.

The General Practitioner reads terms and conditions (T&Cs) and agrees by clicking on the 'let's evaluate' tab.



### 4. Structural Change Evaluation Tool

The General Practitioner is introduced to the seven steps of the evaluation tool. A short description of each section orientates the user to the tool before continuing to data entry. A 'help' button with manuals and tips for evaluation of structural change can be made available should the user require more information.



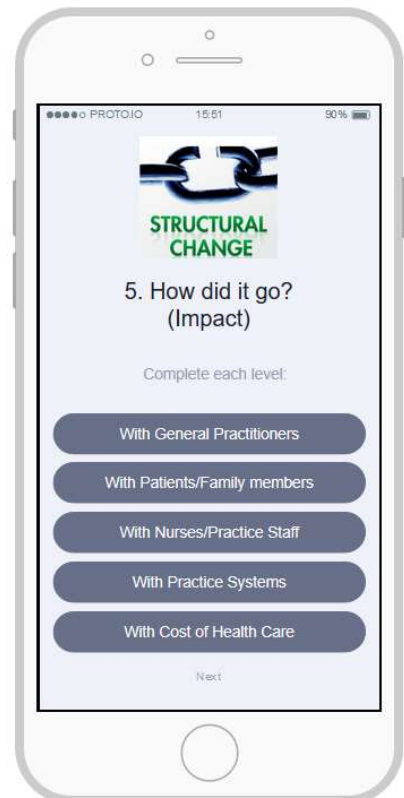
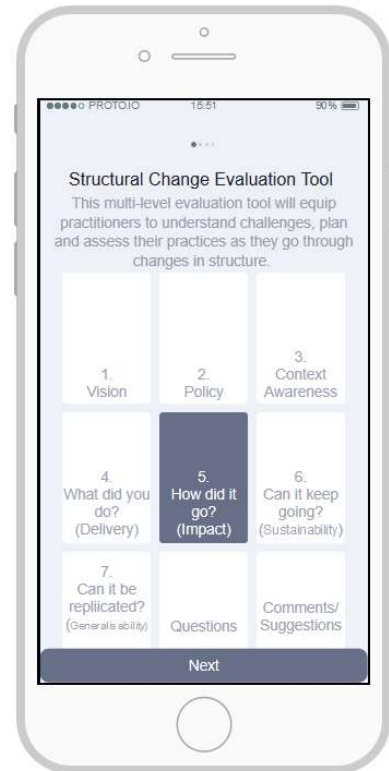


### 5. User chooses step of framework to work on

The user is presented with seven tiles to choose. Ideally, the General Practitioner starts with the vision of structural change. Vision is their own understanding about how they see their practice being transformed as a result of the structural change. This tile can be customised to enter data using tick boxes and free text. The user can also upload pictures if necessary. This tile will act as a ‘vision board’ for the practice. In this example, the user chose step 5 ‘How did it go’ (Impact). A series of questions and free text will guide them to produce a ‘landscape’ of impacts of structural change in the practice.

### 6. User completes a step of the framework for each level: patient, provider, system and cost.

In the last step, the General Practitioner chose step 5 ‘How did it go? (Impact)’. In the next screen, the user is presented with the multi-level characteristic of our framework which aligns with the Quadruple Aim recommended for primary care performance improvement. The user clicks on ‘With General Practitioners’ tab and is taken to a series of questions to analyse the performance of the structural change initiative for this group of stakeholders.



**7. Upon completion, the user has four options.**

Once the user completes the five levels presented in the last step, there are four options for them to finish:

Request printable summary via email – the General Practitioner will receive a summary of data entered organised as per the framework.

Ask for more information – the user can also request more information to find out implementation ideas and to seek assistance with challenges that the tool helps the user identify.

Go to ‘Other Resources Available’ – users can learn more via manuals, webinars, user forums and other resources.

Finish – the user exits the evaluation tool and their information is automatically saved. It is accessible to them at any time via a secure login.

