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**Delivering and Sustaining Change through Implementation  
of a Lean Management System:  
*A Journey towards Health Improvement***

*A thesis presented in partial fulfilment of the requirements for the degree of*

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## Abstract

In this ever-changing world organisations seek to be adaptive and innovative and in response they are adopting new ways of working. Approaches to managing change have been well documented and have progressed as a deeper understanding of change and the associated study of human behaviours has developed. One such methodology that emerged from the well-studied area of Lean Thinking is the Lean Management System, which aims to align direction and distribute decision-making in an organisation in order to have greater sustainability of change.

This study was conducted in the pharmacy department of a large New Zealand public hospital that sought to engage their team in change from a supply-driven pharmacy model, to a model focused on medicines optimisation. To enable the change, the pharmacy department developed work practices based on a Lean Management System that had been adopted in other areas of the hospital. There is very little literature on studies that discuss the impact of Lean Management Systems in healthcare organisations, in particular a pharmacy department.

The primary aim for this study is to explore the impact that a Lean Management System has on the sustainability of change in a hospital pharmacy department.

Participatory Action Research was selected as the methodology to explore the two main themes of ‘Relevance’ and ‘Reactivity’ before, during and after the introduction of a Lean Management System. The data for the study was collected through a combination of focus groups, interviews and researcher reflections. Given that the researcher worked with the participants of the study to facilitate the introduction of the Lean Management System, processes were established to ensure the study was conducted in an ethical manner.

The findings from the study indicate that the introduction of a Lean Management System has a positive impact on sustainability of change, as observed through an increase in the Relevance individuals had with the wider pharmacy department and a reduction in the day-to-day Reactivity team members experienced. This improvement was not consistent across all teams in the pharmacy department, in particular a difference observed in the level of Relevance between the Pharmacy Leadership Team and the ‘front line’ teams. The findings also highlight the strong connection between leadership behaviours and effectiveness of the Lean Management System. The findings can be explained by a range of literature relating to behavioural characteristics, identity theory, alignment to purpose and leadership. Implications for policy and practice are provided with the aim of guiding organisations introducing Lean Management Systems to be successful.

The research identifies a number of gaps in literature and recommends that, in order to achieve greater sustainability of change, the introduction of a Lean Management System be conducted in conjunction with the development of leadership behaviours. Finally, future research is recommended focusing on the development of Lean Management Systems aligned to social networks and the impact of Organisational Identity on Lean Management Systems.

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# Chapter 1 - Introduction

## 1.1 Background

Change is something people grapple with every day in both their personal lives and in their work environments. The ability for people and organisations to successfully navigate through change has become a critical factor of success and will often be the difference between ‘good’ organisations and those that are ‘great’ (Collins, 2001).

As a change practitioner in both health and non-health industries, my focus and ambition has been to guide, coach and develop people and organisations through change. This has been both a fulfilling and painstaking effort at various times in my working career, but one that has prompted many questions as to what are the best methods, tools and underlying philosophies to enable successful change, and how people go about establishing these in a way that change is successfully embedded. This thesis investigates the impact on organisational change of implementing a Lean Management System in a hospital pharmacy department in a large teaching hospital.

The health industry, like many other industries is under immense pressure to change and respond to technological, social and economic conditions that exist in New Zealand and globally (Ronte & Taylor, 2017). To respond to this pressure, health organisations are investing time and resources into a range of strategies to respond to these conditions which include, developments in population health, digital technology, clinical research, workforce development, facilities development and improvement science (Auckland District Health Board, 2016; Ronte et al., 2017). This current research focuses on improvement science, and in particular the science (both social and technical) behind management systems and how they impact the sustainability of change in healthcare organisations.



## 1.2 Justification

There are two key justifications for this research. The first theoretical; as few, if any studies exist that track Lean Management Systems in action. The second is personal; inspired by my role as an improvement practitioner.

In terms of theory, methodologies for organisational change, improvement and management have developed over centuries as industry has evolved (Drucker, 1993; Kiechel, 2012). The 20<sup>th</sup> century and age of the industrial and then technology revolutions brought with it new focuses on productivity and service improvement within organisations and the advent of new methods for change based on continuous improvement (Liker and Meier, 2006). Early examples of continuous improvement, in more recent years referred to as ‘Lean Thinking’ (Lean) came from manufacturing environments, in particular automotive manufacturing (Liker et al, 2006). It wasn’t until early in the 21<sup>st</sup> century that examples of the application of Lean started to emerge in healthcare (Toussaint & Berry, 2013).

In the decades that followed, the healthcare sector began to catch-up with other sectors. The focus on improvement science, continuous improvement and Lean Management Systems accelerated, particularly in the United States and United Kingdom (Barnas & Adams, 2014; Toussaint et al, 2013). As a result of increasing global adoption of improvement methods in healthcare, there has been an abundance of presentations, whitepapers and books published on the practical application of improvement methods in healthcare; however, as discovered through a literature search, there is little formal research that has been conducted in this field. In particular, there appears to be scarce research that explores the effectiveness of Lean Management Systems in healthcare and the necessary dependencies required for them to be successful.

In order to leverage learning from healthcare organisations that have successfully implemented Lean Management Systems, the sharing of knowledge related to the methods and tools used is not enough. A comprehensive understanding of what conditions need to be in place for a Lean Management System to work in different

environments is required. Furthermore, the question of whether a Lean Management System has an impact on sustainable change needs to be answered.

My personal justification for this research is linked to my professional experience with the health sector which began in 2010 when I was engaged as a part of a small team working with Auckland District Health Board (Auckland DHB) in New Zealand to introduce thinking related to improvement methodologies into the organisation. As an experienced improvement practitioner across other industries, I had been fortunate to develop practical experience and had received training and coaching in working with teams to improve their processes and systems. My experience in the health sector however, was only that from personal interactions as a consumer and supporting family and friends.

Early in my tenure with Auckland DHB, I worked with Auckland City Hospital's Radiology department over a period of 18 months. Through this time, I worked closely with clinical and operational staff to guide them through a change process with a goal to 'improve the way that they worked' and ultimately improve the performance of the Radiology service to patients, internal services, the organisation and the staff employed within the Radiology service. The impact of the change was significant and led to improved care through faster turn-around of radiology reports, greater and more timely access to imaging and a workforce that had the work practices, improvement and leadership skills to continue to self-improve (Winstone, 2012).

Whilst change was made in practice and results demonstrated, a constant question that I faced was "what research supports this method of change and improvement in a healthcare environment"? I found that I was often unable to substantially answer this question, as quoting other organisations that had achieved this change or white papers and presentations from leading change consultants was not sufficient. People impacted by change, in particular medical professionals sought structured research that provided evidence that the methodology, tools and approach being applied led to sustainable and impactful change in healthcare, particularly a large public hospital in New Zealand. This evidence, as far as I was aware, did not exist.

The impact of this gap in research-based literature created a challenge for myself and other change practitioners. Whilst change was possible, it was another barrier to bringing people, who in many cases were sceptical, on-board with this new way of thinking. I therefore decided that as well as leading this change in healthcare, I also wanted to contribute to research in this field to pave the way for myself and other change practitioners through structured research.

In the subsequent years, I began to shape and conduct this research in parallel to my work in healthcare. This experience has been one that I found to be complimentary, with the practice contributing to the research, and the research contributing to and in some cases enabling the practice of change.

My experience as a researcher has broadened my thinking on many aspects of practicing change and also methods of conducting research. My background is that of an engineer with a predominantly quantitative epistemology, while this research being focused on social sciences lends more to a qualitative and explorative research method. Engaging in this qualitative method of research in an environment that is strongly focused on quantitative research (randomised controlled trials) has both tested me and expanded my thinking.

My goal is that others may use this research to not only shape and guide their own practice in leading change in healthcare, but to use this to guide future research in this field.

### **1.3 Research Question**

The gaps in literature and my personal experience in the development of Lean Management Systems in healthcare led to several questions that I sought to explore. However, the primary research question that I wanted to answer was: **‘How does the introduction of a Lean Management System affect managing and sustaining change in a healthcare environment?’**

In order to structure the approach to answer this question, two main foci for the study were selected and used to explore the impact on sustainability of change.

- 1) **Relevance:** The degree to which staff feel that what they do is relevant to the department or organisation.
- 2) **Reactivity:** The degree to which staff and teams are prepared for emergent issues and risks that often invoke corrective action post an event.

These two foci are central to the study and provide a consistent thread for the different methods of data collection utilised.

Participatory Action Research (PAR) was chosen as the methodology to explore the research question. PAR, which is qualitative in nature, was selected as it is well suited to complex settings, such as hospitals, and allows the researcher to develop a deep understanding of the issues (Bradley, 2015).

## 1.4 Overview of Thesis

This thesis aims to answer the research question through outlining and then discussing the findings from the exploratory study that was conducted.

Firstly, a review of relevant literature in the field of change and Lean Management Systems is presented. The aim of the review is to provide the reader with an understanding of the field of research and the change that is being introduced throughout the study.

The case context is a pharmacy department within a large public hospital in New Zealand. Chapter three describes the background and aims to provide the reader with an understanding of the different stakeholders who are involved in both the study and the change; the introduction of the Lean Management System.

The thesis provides a comprehensive description of the research design and research methods, with the aim that other researchers may be able to replicate this study in the future. The Chapter four details the data collection methods and analysis. It also provides an overview of the ethical procedures that were followed during the research process.

The findings from the study are detailed in Chapter five of the thesis, providing relevant examples from the different focus groups and interviews that were conducted. The findings from focus groups and interviews are complimented with findings from the researcher's reflections as captured in the Researcher's Journal throughout the study. In Chapter six, the findings are summarised and discussed, drawing on relevant literature to support or challenge the findings. Critical thinking and insights are shared with the reader to seek answers to the research question or provide opportunities for future research.

The thesis is concluded by answering the research question and drawing out implications for policy, practice and future research in this context. Chapter seven also outlines the researcher's reflections on the research process itself and provides consideration and recommendations for future researchers in this field.

## Chapter 2 - Change and Lean Management Systems

This chapter explores the evolution of management as a discipline, how management has evolved as society has changed, and how those organisations and people within it have adapted in an ever-changing world. This change is constant and therefore the way people work in communities and organisations has had to adapt to meet the changing environment (Wijngaarden et al., 2012).

### 2.1 Change Theory

There are many (external and internal) forces that create organisational change (Wijngaarden et al., 2012). The changes observed through behavioural practices are often explained by political and social constructs (Morgan & Sturdy, 2000). It is these social constructs in particular, that have an impact on human dynamics of those affected by change and therefore make leading a change effort a complex process. Furthermore, the reason why people lead change can be very different (Ladkin, 2010). Ladkin (2010) outlines three primary ways in which change may be led:

- Followership – where an individual is self-driven to achieve a vision and engages others to join them in pursuit of this vision.
- Distributed – where the responsibility to lead change is assigned.
- Situational – where there is no option but to change due to an event.

As a result, the levels of motivation by individuals to create, drive or accept change may be very different. The difference in levels of motivation can bring rise to resistance, or latency in change as characterised by the innovation adoption curve, which is one of the earliest theories about the intricacies of change developed by Rogers (1995). The Innovators and Early Adopters demonstrate the self-driven characteristics of Followership (Ladkin, 2010), where the Laggards are resisting the change to the point that there is no other option and this becomes a Situational decision to change (Ladkin, 2010; Rogers, 1995). Another way of describing the situation of the Laggards is where people are wanting to hold onto their ‘old ways’ as fear of doing something new (Johnson, 1992). This fear of change is interesting

and relevant to this research as it shows that these are typical problems faced in change and are typical situations in human interaction.

Such early theories, therefore, provide a valuable indication of the combination of the two factors mentioned; the underpinning social construct of change and the different rationales for creating or accepting change. The combination of these factors can lead to challenging and often turbulent dynamics in organisations.

## **2.2 Social Constructs that affect Change Practices**

The way that people act within organisations can be underpinned by theories related to the political and social constructs that exist in the modern world (Morgan & Sturdy, 2000; Pedler, Burgoyne & Boydell, 2010). These political environments and social beliefs have a direct impact on how people instigate or are impacted by change. Morgan et al. (2000) describe how people's actions and behaviours, both positive and negative, occur as result of the political environment in an organisation, or sub-group of the organisation. Furthermore, the political environment is created by the combination of different social constructs that exist between the actors in an organisation. These social constructs are the innate social conditions that exist within actors, or a group of actors. Morgan et al. (2000) outline some of these as: Organisational Identity, Psychodynamics, and Political Economy, which individually and in combination shape the political environment.

### **Organisational Identity**

Political dynamics can stem from people's beliefs around what organisational groups they identify with. Alvesson and Willmott (2002) describe theories around Identity Regulation and how this gives rise to political situations such as 'Working in Silos'. These political situations in turn, influence behavioural practices such as 'Power Struggles' and 'Patch Protection' (Morgan et al., 2000; Pedler et al., 2010). In the context of organisational change, identity theory has a significant impact as it can lead to individual's belief that 'we are different and therefore this change doesn't apply to us'.

## **Psychodynamics**

Freud's theories on Psychodynamics and the way different character sets influence behaviours, is another social construct that can impact how change is led and received. Character traits are important, as individuals negotiate the challenges of change. For example, Gabriel and Schwartz (1999) state that there are different innate characters that all individuals have which relate to the different stages of development. These characters are Narcissist, Obsessive, Oedipus Complex, Collectivism and Individualism, and some individuals tend to show combination of these, where others may be more fixed to one character set (Gabriel et al., 1999). Morgan and Sturdy (2000) discuss how these different default characters can give rise to different personality types and habitual behaviours and the impact is that individuals may react to, or engage in change in very different ways and can often be misaligned. As an example, an individual with a Narcissist character is likely to be very self-centred and will consider the impact of change on themselves, whereas an individual with a collectivism character is likely to be more focused on the shared impact across a group.

## **Political Economy**

The political situation that arises between the value provided by the 'workers' and how much they are remunerated for creating this value, is another force of influencing or resisting change. Harvey (1982) cites Marx's theories on Political Economy which describes the social unrest that can form because those who are doing the work, feel they are not being compensated for the value they provide. This perception of under-compensation may give rise political situations that can either force change, from the workers, or resist change that is being instigated by the managers (Harvey, 1982). The result of this resistance can be played out through industrial action such as workplace strikes and gives rise to organisational bodies such as workers unions. The implications of the social construct of Political Economy on change is that practices such as stakeholder engagement becomes critical if the change is to be successfully adopted (Pedler et al., 2010).



The combination of these three social constructs, along with external social forces (such as: religion, ethnicity, gender) bring a level of complexity to change within organisations and can go some way to explain why change is not easy.

### **2.3 Management Systems and Change**

Management systems have been a focus of much research over the past centuries (Kiechel, 2012). Throughout the industrial, information and technology ages, we have seen organisations embrace a multitude of approaches and methods that relate to different phases in the development of management practice (McGrath, 2014). Prior to the 1900s the term management, in commercial organisations, was largely associated with the functions of the owner and it wasn't until the age of the industrial revolution with the development of practices such as Mass Production did the first phase of management, 'Execution', emerge where these functions were distributed beyond the owner (McGrath, 2014).

The second phase of management, 'Expertise', occurred during the Mid-20th Century when a range of management theories were developed and examples include the theory of constraints, management by objectives, reengineering, and Six Sigma (McGrath, 2014). This phase was led by a range of 'management gurus' such as Deming, Drucker, Shewhart and Goldratt and management emerged more as a profession than a function. The information and technology revolutions further leveraged the growing recognition of management expertise and placed emphasis on business concepts such as strategic planning. Much of the focus was on growing an organisation, advancing services and creating shareholder value (McGrath, 2014).

In more recent years there has been a shift in many organisations towards the consideration of their real purpose (greater than profit generation) and because of this shift, there is new interest on the experiences of people (Mackey & Sisodia, 2013). McGrath (2014) describes that change of focus as the third phase of management, 'Empathy', and this relates to customers, employees and the wider communities within which organisations exist (McGrath, 2014).

The shift towards empathy has also elevated the interest in the phenomena of leadership and there is now a considerable body of literature that explores this concept (Bryman, Collinson, Grint, Jackson & Uhl-Bien, 2011). Recent scholars argue that leadership is about adopting a more collective focus, knowledge and effort of a wider team and this has become critical for modern day organisations (Arena & Uhl-Bien, 2016). To move at pace, organisations are embracing a collective mobilisation and empowering innovations that are generated by the wider workforce. The eras that focused on execution and expertise, where a small group of managers held most knowledge and made all the decisions, has been largely surpassed with the information age. The information age has enabled knowledge to be shared and access by a much wider network therefore enabling decisions to be distributed across the workforce of an organisation (Sanders-Edwards, 2015; Arena & Uhl-Bien, 2016). As a result, a new approach to management systems has evolved which aim to serve the purpose of an organisation, whilst harnessing a much broader knowledge base and enabled workforce.

## **2.4 Introducing Lean Management Systems**

One such management system is the ‘Lean Management System’ which embodies the principles of Lean Enterprise in how an organisation is led and managed (Mann, 2005). The core principles behind a Lean Management System are that it provides a way of working that embraces the concept of ‘respect for people’ and ‘adding value’ through the elimination of waste in the pursuit of perfection (Liker & Meier, 2006). In the context of management systems, waste can be defined by the following characteristics.

- Misalignment (i.e. people working in different directions).
- Ineffective decision making.
- Waste of intellect (i.e. those who know what and how to change not enabled to).
- Waste of time (i.e. people spending time that is not value adding to the purpose of the organisation) e.g. attending meetings that are not relevant, structured or focused.
- Reactivity (i.e. delays in responding to change after the event has happened and this often creates rework of a product or service).

(Liker & Meier, 2006).

## 2.5 Origins of Lean Management

The origins of Lean Management stem back to organisations such as the Toyota Motor Corporation whose management system was built into the DNA of the way that they operated (Spear & Bowen, 1999). Furthermore, a Lean Management System embodies a core principle of Toyota's, which is 'respect for humanity' (Ohno, 1978; Sugimori, Kusunoki, Cho & Uchikawa, 1977). The approach achieves this by using a framework in which senior executives and managers set the purpose (what) and vision (where) of an organisation, and those 'doing the work' come up with the things required to make the change (how) (Liker & Hoseus, 2008; Ohno, 1978). In traditional organisations, as seen in the early days of the industrial revolution, the 'how' was determined by the senior managers and the workers were simply told how to do things (Liker & Hoseus, 2008). The impact was disengagement and lack of ownership of change and improvement (Liker & Hoseus, 2008).

'Respect for humanity' embodied the principle that those who 'did the work' had the knowledge to add the value (Liker & Hoseus, 2008; Ohno, 1978). The concept of those with positional power enabling those who had the knowledge to make decisions, demonstrated confidence in the management system and respect of the collective intellect of the workforce. The impact is not only that you have a workforce that feels their contribution is valued, but there is a much larger body of people who take accountability for leading and managing change and improvement within an organisation.

In traditionally oriented organisations (non-lean), the decision and the change is determined by those in senior management positions (who are often removed from the delivery of work) and those who are in 'front line' positions are told how to do things. Change is thus managed top down utilising hierarchical structures and accountabilities, typical of the 'execution' and 'expertise' phases of management, which gives rise to situations where the 'front line' employees are required to explain deviation from the expected path (McGrath, 2014).

Figure 1 outlines the difference between the leadership approaches in an organisation that enlists a Lean Management System versus a traditional organisation.

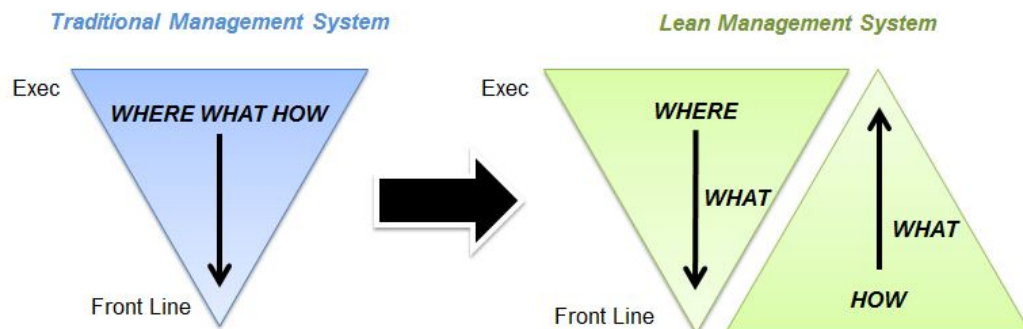


Figure 1: Management Systems (Adapted from Ohno, 1978)

A Traditional Management System is defined where senior management have the solutions and tell the front-line staff ‘how’ to do their work. A Lean Management System is based on developing respect for people through acknowledging that front-line staff know ‘what’ is really happening and they know ‘how’ to develop the solutions. The core function of senior management is to set the direction of ‘where’ the Organisation is going and ‘what’ change is required.

Another way of describing this principle is by characterising what ‘flows’ between different levels of organisations. Lancaster (2017) describes this as “Information flows up, support flows down” (Lancaster, 2017, p. 53) which reflects that the information (‘how’ we do things) filters up from the front line, and the executive provide support and direction (‘where’ we are going). The common area of ‘what’, is where alignment of direction and decisions take place through methods such as strategy deployment (Denis, 2006) which is described in more detail in this chapter.

In his work describing the System of Profound knowledge, W. Edwards Deming (1986) described one of the four areas of his system as an ‘appreciation of a system’. A key philosophy of ‘appreciation of a system’ is that every system has connections and interactions, that when working together, accomplish a shared aim (Deming, 1986). Deming (2000) famously quoted, “A system must have an aim. Without an aim, there is no system” (pp. 95-96).

The concept of having an aim or purpose is core to theory of Lean Management Systems. More-so this can be extended to any team within an organisation in that the aim or purpose forms the common basis of why they are there, and this sets the basis for what they do day-to-day ('working in the business') and also what they are trying to change ('working on the business'). Deming (1986) describes this as 'constancy of purpose'. Figure 2 below outlines how a team aligns these dimensions of work to their purpose.

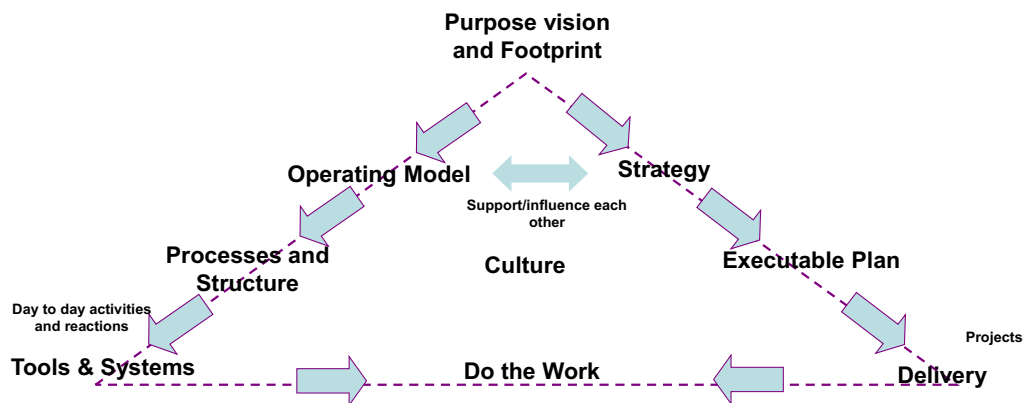


Figure 2: Purpose and Vision Model (Sanders-Edwards, 2010)

The left-hand side of Figure 2 represents how the operational aspects of an organisation are determined, where the right-hand side illustrates strategic focus of an organisation. Both sides contribute to the work done by the organisation, which is a combination of operational delivery and strategic change. The way the work is done is determined by the organisational culture and supporting values the organisation adopts.

The challenge inherent in this type of approach is that before it can be applied, a degree of alignment in purpose and direction is required. A Lean Management System supports this alignment by providing a process where the direction of teams is aligned to a common direction, often described as 'True North' (Barnas, 2014). By defining their 'True North' an organisation can then have a basis to deploy and align strategy across its different teams.

Defining the purpose of an organisation (or group within an organisation) can have a much greater role than just aligning direction. It can provide a sense of reason for being and belonging (Lencioni, 2007). Further to this it can also explain the true

value an organisation or group provides, as opposed to the results that they provide (Sinek, 2009). The 'Power of Why' not only anchors a group to a common purpose, but it also provides a real essence of why a group exists and this can create a sense of belonging (Sinek, 2009).

With a purpose defined, an organisation (or group) can then look forward and define a vision for where they want to be three to five years into the future (Cowley & Domb, 1997). This vision is an ideal state that is underpinned by the purpose of the group (WHY they are here) and enables a group to consider not just WHAT they do today, but WHAT they will be doing to fill their purpose in the years to come. A vision becomes the reason for a team to set goals and to change (Cowley & Domb, 1997). Furthermore, the establishment of a vision can bring motivation to a group through aspiring to attain goals that further fulfil their shared purpose (Cowley & Domb, 1997; Senge, 1990). Cowley and Domb (1997) articulate that the creation of a vision "is an essential step towards the creation of unity of purpose in all their endeavours" (p. 67).

Having defined a purpose and vision an organisation can develop a strategy which articulates how they will move from the current condition to a target condition (Shook, 2008). The approach to formulation of strategy has become well developed with a variety of frameworks and methods available to support this process (Dyson and O'Brien, (2007). Examples of these are methods such as 'SWOT' and 'PESTLE' analysis are often used to conduct internal and external environmental assessments of an organisation (van Wijngaarden, Scholten & van Wijk, 2012).

One area that organisations often struggle with is the execution (or deployment) of strategy whilst trying to meet the demands of running the day-to-day operations of a business (Dennis, 2006; Cowley & Domb, 1997). The scarceness of time in business compounded with growing expectations, means that management of time is critical to successful management (Drucker, 1993). The trade-off between 'working in the business' (operations) and 'working on the business' (executing strategy and change) becomes a real challenge, and if an organisation does not have a clear method on how they execute strategy, it can often be delayed or worse, not happen at all (Bevins & De Smet, 2013).

A core aim of Lean Management Systems is to develop routines that provide a standard way of delivering day-to-day operational requirements as well as executing change (Sanders-Edwards, 2010). The two sides of the triangle in Figure 2 illustrate this and the combined result is the work done.

## **2.6 Elements of Lean Management Systems**

The core elements of a Lean Management System are described by Mann (2010) as leader standard work, visual controls, daily accountability process and discipline. Leader standard work is where a leader follows their standard work which enables the rest of the management system to operate effectively (Mann, 2010). The practice of leader standard work is the fuel that powers the other components of the management system. Visual controls highlight the actual performance of the process relative to what was expected. A daily accountability process enables leaders to set direction of improvement activity. Finally, exercising discipline to establish new habits and not fall back into old ways is a key element that without the other elements will not be effective (Mann, 2010).

The elements of a Lean Management System extend beyond the principles outlined by Mann (2010) to practical methods and tools to translate these principles into the workplace. There are an extensive range of methods and practitioners need to understand which methods and tools would best suit the nature of their organisation and those people within it (Liker & Meier, 2006).

The following are some examples of the methods that may be employed within organisations developing a Lean Management System:

### **Gemba Walks**

The visibility of management in the workplace provides a connection to the 'work done' and establishing this as a daily routine allows for short-cycle problem solving and decision making (Lancaster, 2017). Gemba is a Japanese word that can be translated as 'The Real Place' and in a Lean Management System this means the place where value is added (Liker & Meier, 2006). Through creating a standard

work of regular Gemba Walks, leaders are engaged and present in the activity of the teams that they have responsibility for leading and can provide relevance of what teams are doing to a wider organisational focus (Mann, 2010; Gordon, 2015). The nature of the connection is critical and to be effective it requires engagement with teams through coaching and support as opposed to ordering and control (Lancaster, 2017).

### **Daily Meetings**

The cadence of change can often be impacted by the decision-making cycles and timeframes that exist in organisations (Lancaster, 2017). Change and action can be significantly accelerated if two conditions exist: Frequent opportunities (forums) for decisions to take place, and the distributed autonomy of decision making across an organisation, with appropriate levels of delegation (Mann, 2010). This combination creates a much more proactive environment for decision making. Daily (or short-cycle) meetings with the right level of team autonomy can accelerate decision making and change efforts dramatically (Lancaster, 2017). Similar approaches to this have been applied across a wide range of practices, such as use of SCRUM project management in technology development (Hossain, Babar & Paik, 2009).

### **Concern, Cause, Countermeasure (Jishuken) Methodology**

To ensure that teams were solving the real problem, leaders at Toyota developed the 'Jishuken' Methodology, a thinking framework to assist employees to make better decisions and solve the right problems (Liker & Meier, 2006; Marksberry, Badurdeen, Gregory & Kreaflle, 2010). The 'Concern, Cause, Countermeasure' (CCC) approach guides teams to first consider: what is the 'Concern' that we are trying to solve; then to understand the 'Cause' for the 'Concern'; and determine an appropriate 'Countermeasure' or action that is to be put in place. Finally, accountability is assigned to a person or persons with a date that the 'Countermeasure' is to be complete (Mann, 2010; Marksberry, et al., 2010).

Lean Management Systems first emerged in the manufacturing industry, particularly in automotive manufacturing, however through the 1990s and early 2000s the application of Lean spread from manufacturing into broader industries such as heavy



process, utilities and service-based industries (Jasti & Kodali, 2015). It has been in this time that Lean Management Systems were first applied in healthcare (Womack, Byrne, Fiume, Kaplan, & Toussaint, 2005).

## **2.7 Lean Management Systems in Healthcare**

In the last decade there have been growing trends to adopt Lean Thinking within healthcare organisations (Barnas & Adams, 2014; Jones & Mitchell, 2006; Womack et al., 2005). However, there is limited literature that describe the application and effect of Lean Management Systems in Healthcare, and of the literature available it is predominantly based on US based healthcare providers. One such example is the ThedaCare Hospital system, who partnered with the Lean Enterprise Institute to form the ThedaCare Center for Healthcare Value and in partnership developed a Lean Management System (Barnas, 2011; Barnas & Adams, 2014; Toussaint & Berry, 2013). Other health organisations, such as Virginia Mason Medical Center, have applied some components of a Lean Management System including strategy deployment, daily accountability meetings and measurement frameworks such as balanced scorecards (Womack, Byrne, Fiume, Kaplan, & Toussaint, 2005), however there is a lack of empirical research describing the application of a Lean Management System, or the elements of it, in hospital pharmacy departments.

## **2.8 Chapter Summary**

This chapter has outlined the reasons that change may exist in organisations and goes some way to describing why change can be challenging to lead and manage, by discussing important social constructs that underpin change. Management Systems, in particular Lean Management Systems, are introduced as one such approach to lead and manage change that they achieve through engaging people and teams in day-to-day decision making and creating alignment to a common organisational purpose. The ultimate goal being increased relevance of what people do and a less reactive work environment. The aim and methodology behind a Lean Management System is described along with a description of the core elements of a Lean Management System.

## **Chapter 3 – Case Context: Management Operating System at Auckland District Health Board / Pharmacy Department**

### **3.1 Chapter Introduction**

This chapter seeks to provide an overall context of the organisation in which the study was conducted. It outlines the nature of the organisation and its current application of a Lean Management System. The study group and participants are introduced as the hospital pharmacy department.

### **3.2 Auckland District Health Board**

Auckland District Health Board (Auckland DHB) is one of twenty District Health Boards (DHBs) that provide a public health service in New Zealand. As well as providing health services to 510,000 Auckland DHB domiciled patients, approximately half of the service provided is for patients who are from outside the Auckland DHB region. This makes Auckland DHB the third largest health board in New Zealand by population and New Zealand's largest health board if measured by funding and full-time employees (Auckland District Health Board, 2017).

Auckland DHB, therefore, has multiple purposes (Auckland District Health Board, 2016):

- 1) Commissioning and providing health services for the Auckland DHB domiciled consumers and patients
- 2) Providing secondary and tertiary health services for Auckland regional patients
- 3) Providing tertiary and quaternary health services for National patients
- 4) A teaching hospital for medical, pharmacy, nursing and allied health and technical which involves having strong ties with academic institutions
- 5) A centre of research for health and medical advancement, in partnership with a range of academic institutions

Auckland DHB has two primary sites in which its hospitals and outpatient services are located. These are Auckland City Hospital and Green Lane Clinical Centre.

Both sites have multiple service facilities provided as shown in Figure 3. There are also many smaller sites and community centres in the Auckland DHB catchment.



Figure 3: Auckland DHB Sites

### 3.3 Auckland DHB Management Operating System Deployment

Auckland DHB commenced the development and deployment of its version of a Lean Management System in 2011, which it termed Management Operating System (MOS). The catalyst for this was the lack of aligned decision making and direction across its many services and teams which resulted in a very reactive environment (Winstone, 2015). As well as the impact on general performance, this reactivity generated a lack of confidence from Senior Management and the Board which led to ‘micro-management’. Examples of this include:

- Board members phoning clinicians directly to find out what is going on with particular issues without senior managers being aware of the contact. The result was a very reactive environment.
- A ‘please explain’ culture where teams were asked to explain why there had been an issue and justify it.
- Much of the decision making was taking place at senior management levels and other staff were deferring decisions back to senior managers.

The MOS was adopted as a methodology that could work alongside other organisational change focuses (Development of Work Practices / Improvement methodologies and Leadership Development) to achieve alignment and bottom-up accountability for decision making (ownership).

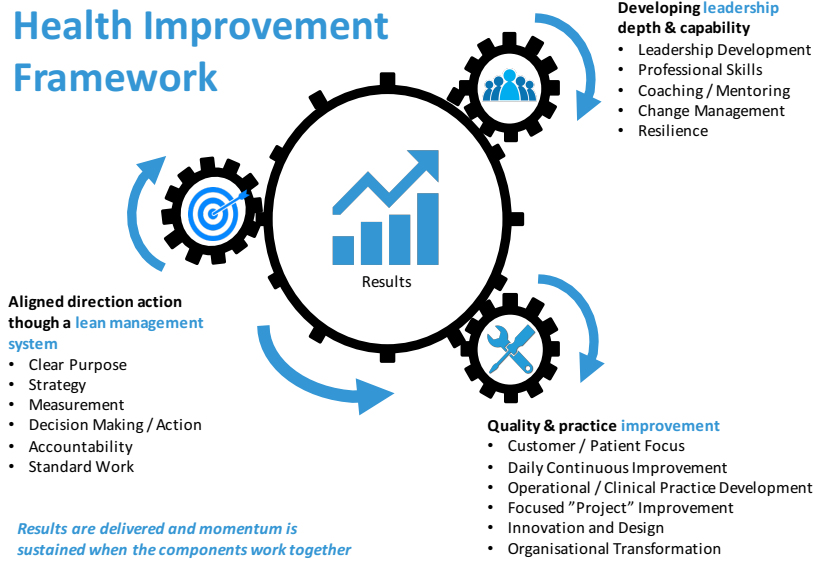


Figure 4: Health Improvement Framework: Auckland DHB (Winstone, 2015)

The MOS provides a framework for teams to manage both the delivery of strategic change and management of operational performance. The MOS aims to increase the relevance of people’s work, through alignment to the groups purpose, and reduce reactive behaviour, by involving teams in daily decision making. Both dimensions are aligned back to the common purpose of a group.

To support both strategic change and operational delivery, the MOS defines a number of key elements as shown in Figure 5 (Winstone, 2014) and these are further explained in the following section.

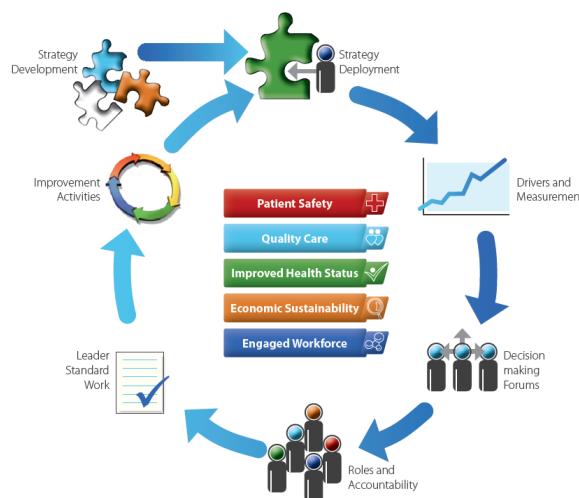


Figure 5: Elements of Auckland DHB’s Management Operating System (Adapted from: Dennis, 2006; Kaplan et al., 2007; Mann, 2005; Winstone, 2014)

## **Strategy Development**

The process of developing and refining strategy is a key element of the MOS. Strategies are developed at each level of the organisation and this underpins the plan for the coming one to two years.

The strategy that each team develops will vary in complexity depending on the issues faced and the team's level in the organisation. A method adopted for assisting in strategy development is the A3 plan (Dennis, 2006) which tells the story of why this is important; where you are today; where you want to be; and what actions you will take to get there. The A3 plan is typically updated 2 or 3 times a year, however this can occur as often as required to reflect changes in thinking. The complete A3 plan is then able to convey a concise story of direction of the team to engage others. This is a key input into the next element – Strategy Deployment.

## **Strategy Deployment**

The next element in the MOS is strategy deployment. Dennis (2006) describes strategy deployment as the 'nervous system' of a business system. It guides planning and action across an organisation (Dennis, 2006). Furthermore, it enables a team to 'tell the story' of the change they are embarking on and refine this based on the feedback they get from other groups in the organisation. Dennis (2006) describes this as a 'catch-ball' process where there is a continual iteration of strategy as it is shaped through discussions up, down and across the organisation.

In parallel with this, a key aspect of strategy deployment is the focus on the activity needed to facilitate change. The method adopted through Auckland DHB's MOS has been using a 180 day plan (Appendix B). This plan outlines the projects that are underway or planned over the coming six months that support either the delivery of strategy (as articulated in the A3 plan) or projects that are addressing more short term operational matters.

The 180 day plan also provides a view of status of each of the projects and a projection of the timeframe during which it will be active. Each project has a leader who is responsible for providing this updated information. Typically, the 180 day

plan is reviewed and updated by the team on a monthly basis. At this point any new projects that are due to commence are prioritised and it is agreed whether they will commence or not.

### **Drivers and Measures**

To ensure that a team understands how they are performing both in terms of delivering on their operational purpose and also the change they have described in their strategy, a set of measures is defined and incorporated into their Management Operating System. The selection of these measures is critical as it provides a common focus for the team. Some measures may be outcome measures (i.e. those that impact the end customer or result) and other measures may be drivers (i.e. process level measures that can be managed locally by the team and collectively they impact the outcome measures (Susilawati, Tan, Bell & Sawar, 2013).

A core principle of selecting measures to focus on within a team is to choose those aspects that a team can influence and that are relevant to them. If the measures are not aligned to what the team is doing they may find it harder to engage in progressing them (Kaplan & Norton, 1982).

The MOS provides several methods and tools to support the development of measures and drivers for the team. These include a scorecard which is a high-level view of all areas of team performance (typically monthly) as well as Key Performance Targets, which are a selected group of measures which a team chooses to put particular focus on. Whilst the scorecard is generally static (in terms of what measures are included), the Key Performance Targets can change as the focus of the team changes over time.

Teams are encouraged to use a balanced set of measures to ensure all aspects of performance are considered. Kaplan and Norton (1995) articulate this approach through their balanced scorecard methodology.

## **Decision Making Forums**

The MOS defines the meetings and forums to bring the right people together to review their projects and key performance targets to make decisions and drive action.

In these forums general issues, risks and positive stories are also raised and countermeasures (actions) are agreed and assigned. Issues that are not able to be resolved at a lower level can be raised and support be requested. The minutes of the meeting are often visually displayed to communicate with others who did not attend the meeting. Solutions to issues are visible to everyone as are how well the team is progressing against the key measures the team is focused on.

## **Roles and Accountabilities**

To ensure that the MOS works effectively and outputs are followed through, clear roles and accountabilities are defined. In some teams, the responsibility to run the meeting may rotate as might the task of documenting the issues raised. In other teams, these roles may be held by the team leader/service leader. At each organisational level individuals take ownership of measures that they are responsible for. They will be responsible for providing up to date data to discuss but any actions generated can be taken up by any team member.

## **Leader Standard Work**

Routine activities, like updating measures and completing daily audits, can be further embedded by defining 'standard work' for individuals or teams. Developing shared accountability across a team through standard work is a key element to sustain a MOS. Leaders may also build in routine 'drop-in' visits to their team's meeting to provide support through coaching with humility and build connections across the organisation. Tools such as standard works sheets, or stat sheets can also aid leaders in developing and maintaining their standard work.

## **Connectivity of MOS Elements**

The elements of the Management Operating System described above are connected together through linking components of each element (methods and tools). For

example, the key performance targets selected in the Drivers and Measures are used in Decision Making Forums, such as daily meeting. A diagram outlining how the components of a Management Operating System interact is shown in Appendix C.

### **Principles that Underpin the Management Operating System**

An effective MOS is underpinned by a series of core principles (Winstone, 2014). These are consistent across any team within an organisation.

- Status at a Glance – everyone in the team can see performance easily.
- Action – by identifying a ‘Concern, Cause, Countermeasure’ way of thinking.
- Discipline – teams are to prepare, participate and follow through on actions.
- Alignment – keeping focus aligned with other teams across the organisation.
- Purpose – focussing on important issues both within the team and across the organisation.
- Ongoing review and improvement.

### **3.4 Auckland DHB Pharmacy**

The Auckland DHB pharmacy provides service across Auckland DHB’s two main hospital campuses (Auckland City Hospital and Greenlane Clinical Centre) as shown in Figure 3. The pharmacy employs approximately 150 staff and provides the following services:

- Clinical Pharmacy (prescribing / reconciliation and advice of medicines on wards).
- Supply and Distribution (management of the distribution of medicines across the hospitals).
- Hospital Dispensary (compounding / dispensing specific medicines).
- Retail Pharmacy (two retail pharmacy outlets for dispensary).
- Medicine Governance (Medicine Safety, Medicines Management, Research and Development Projects).
- Clinical Trials (Management and dispensing medicines for Clinical Trials).
- Pharmacy Aseptic Production Unit (PAPU) (manufacture of personalised medicine primarily for chemotherapy).
- Pharmacy Training and Development (for training of Pharmacists and Pharmacy Technicians).



As well as the functional management structure of the pharmacy, it has a strong cross-functional network in which it is integrated into the clinical and non-clinical services across the organisation. This provides a complex setting for daily decision making and management and alignment of change. The existing functional management structure of the team depicts a typical hierarchy with a Chief Pharmacist, Clinical Leads, Team Leads, Supervisors and 'Front Line' staff. There is a mix of professions within the team including Pharmacists, Pharmacy Technicians, Pharmacy Assistants, Logistics staff and clerical staff. As well as managers with positional leadership responsibilities, there are many clinical experts who have specialty knowledge and capabilities and provide leadership in these domains.

The pharmacy team has been through many changes over the last few years. There has been change in leadership with a new Chief Pharmacist appointed following a long vacancy in this position. The period in which there was a gap in this role led to a prolonged period of maintaining the status-quo. This has meant that the focus of the team was more short term and primarily operational. With the appointment of a new Chief Pharmacist from outside of the organisation there was an opportunity to develop more of a strategic focus for the department. The pharmacy lead team enlisted support to redefine their purpose and established a new strategy. The essence of this was to move from a medicines supply focus, which is characterised as being largely centred on the process of distribution of medicines around the hospital, to medicines optimisation focus, a more patient-centred model (Butterfield, 2015, Lorimer, Lalli & Spina, 2013; Zellmar, 2009).

Globally there have been significant changes in how pharmacy departments within large healthcare organisations function, with a shift from dispensary based models to models centred on medicines optimisation (Royal Pharmaceutical Society, 2013; NICE, 2015). Medicines optimisation is a patient centred approach to management of medication and is defined as “ensuring that the right patients get the right choice of medicine, at the right time” (Royal Pharmaceutical Society, 2013, p. 3). In order to develop a medicines optimisation model, clinicians within hospital pharmacy

departments need to be an integrated part of pathways and share their expert knowledge with the wider healthcare system in the community (Butterfield, 2015).

In parallel to this change there was increasing pressure and demand on the service to meet the needs of the wider hospital and community. These included greater involvement in management of medicines pathways, improved responsiveness to supply and distribution of medicines whilst maintaining high standards of quality, safety and economic sustainability.

The pharmacy developed a strategy based on six focuses for the department (Costello, 2015):

1. Medicines Pathways.
2. Medicines Governance and Safety.
3. Financial Management.
4. Community and Primary Interface.
5. Workforce Development, Training and Research.
6. Medicines Automation.

Each of these strategic areas had accountable owners assigned to develop these strategies further with their teams. In addition to this, the strategy development process ensured that the wider pharmacy staff and ‘customers’ of pharmacy were consulted on the strategy as well as being able to provide input where possible. These customers include the likes of staff in hospital wards, operating theatre staff, emergency medicine staff, day-stay staff and patients (e.g. chemotherapy) and retail pharmacy staff. A primary concern of the senior managers in the pharmacy department was to ensure that the strategy was relevant and aligned to what people in all their teams do on a daily basis. They felt that if there was strong relevance, that any changes are more likely to be sustained (Auckland District Health Board, 2015).

Prior to implementation of the MOS, the pharmacy department faced many other challenges that were typical of large services across the organisation (Costello, 2015).

- A lack of clarity of purpose of teams.
- Teams working in different directions.

- Change and decisions were made by the senior managers in the service and teams often waited for these to take place.

The impact of these challenges was a very reactive environment in which teams were trying to respond to issues and explain why there was non-performance.

It was because of the above reasons and a willingness to change from this situation, that the senior management in the pharmacy department decided to develop their Lean Management System. In addition to this, the pharmacy department was selected as the focus for this study based on the following criteria:

- The service was willing to learn through this process of reflection and research.
- The service had new leadership in place with an ambition to change how the department operated.
- The service had articulated a new strategic direction that they wanted to embark on implementing.
- The service had not specifically focused on developing their Management Operating System.

### **3.5 Chapter Summary**

This chapter provides the study context and outlines the existing approach to the Lean Management System at Auckland DHB. Furthermore, the chapter outlines the Pre-study situation within the pharmacy department, including the primary focuses the department has to develop its service, and provides rationale for selecting the pharmacy department as the case for the study. Rationale for introducing a Management Operating System is provided, being that it would support sustaining change through improving the relevance of strategy across their teams and reduce reactivity in day-to-day work practices.

Through a review of change management literature and a description of the evolution of management systems, context has been provided based on relevant research in this field. However, in consideration of the desired goals outlined in the case situation, questions remain unanswered with regard to the effectiveness of Lean Management Systems in healthcare. This sets the basis for the research question:

**‘How does the introduction of a Lean Management System affect managing and sustaining change in a healthcare environment’?**

In order to explore sustainability of change following the introduction of a Lean Management System, two main themes were selected:

- Relevance - The degree to which staff feel that what they do is relevant to the department or organisation.
- Reactivity - The degree to which staff and teams are prepared for emergent issues and risks that often invoke corrective action post an event.

The detailed case of the pharmacy department outlined in this chapter has not provided the answer to the specific research question and therefore further investigation is required. The case is very relevant to the research question and presented an opportunity for a study that spanned before and after the period of introducing a Lean Management System. The following chapter will provide a logical and detailed plan about how this study will proceed.

## **Chapter 4 – Research Design and Methods**

### **4.1 Chapter Introduction**

This chapter outlines the research philosophy, design and methods, including data collection and analysis, that have been applied throughout this study. It also provides a discussion of the ethical considerations related to this study and the various methods through which ethical concerns were considered and managed.

### **4.2 Research Philosophy**

At this point, it is important to describe the research philosophy taken in this study. The researcher has come from a positivist background in research and analysis, largely influenced by an early stage career in engineering and quality improvement. As a result, a lot of earlier methods of research and analysis were supported by quantitative methods, such as statistical analysis of data. In more recent years the researcher has put more focus on aspects of change, leadership and management and the human behaviours that relate to these fields. Through this lens, the epistemology of the researcher has moved more towards the centre of a paradigm of research philosophy through developing a more explorative approach (Bryman & Bell, 2011). The nature of this research being more inductive, lends itself to the explorative approach as applied through Participatory Action Research (PAR) (Bradley, 2015; Chevalier & Buckles, 2013; Liamputtong & Ezzy, 2005).

Given that many of the participants in this study come from medical and scientific backgrounds, there is a significant focus on quantitative methods for research. This gives rise to some challenges in conducting research using qualitative methods, as the more exploratory approach is not something that many of the participants are familiar with. It is therefore very important to have a robust research design to meet the expectations of the audience (Bunniss & Kelly, 2010).

### **Justification for adoption of Participatory Action Research**

PAR was chosen as the methodology to observe and evaluate the impact of introducing a MOS framework in a pharmacy department of a large public hospital. The department was embarking on a change process to move from a dispensary

centred model to a patient centred model based on Medicines Optimisation (Butterfield, 2015; Lorimer et al., 2013). Data was collected on the delivery and sustainability of this change before and after the introduction of the MOS framework. In addition, the researcher reflected on the process throughout the study.

Furthermore, PAR was adopted as the research methodology as it is an approach that is suited to complex settings where a deep understanding of the issues is required (Bradley, 2015). Given the nature of the hospital pharmacy environment and the change that the department was embarking on, it has many complexities and factors that may impact on the change initiative, therefore this research design was thought to be appropriate.

Bradley (2015) describes four characteristics of PAR as participation, cyclical spiral process, emergence and reflection and reflexivity. The use of a cyclical process to introduce change is aligned with the concept of continuous improvement, small cycles of change to improve performance which the researcher and participants are familiar with (Liker & Mejer, 2006).

### **4.3 Research Design**

In accordance with this cyclical approach three phases were used in this study to understand the impact of the changes being applied: Pre, During, Post.

The study phases and data collection of this research were conducted over a 15-month period (December 2015 – February 2017) in a collaborative approach between the researcher and the participants of the study.

Figure 6 provides a high-level view of the phases of research including the key focuses of the Pre and Post-phases. A more detailed breakdown of the activity conducted through each phase of research and timeline for these activities was detailed through a research plan (Appendix E).

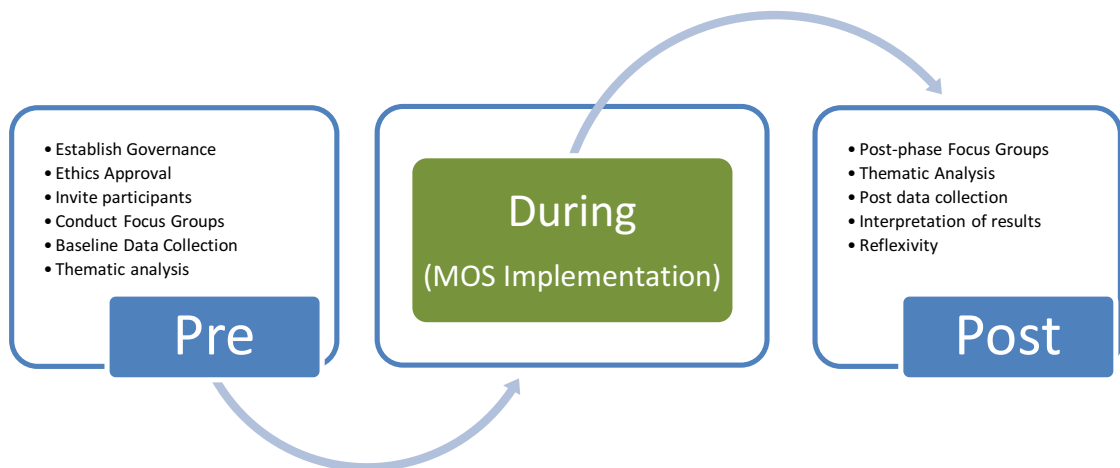


Figure 6: Research Design

PAR is cyclical which provides the researcher with flexibility to study the impact of change toward direct variables as the indirect variables are changed (Bradley, 2015). This flexibility has important ramifications for the purpose of the research and the research question which may be influenced by both the researcher and participants as the study progresses and new light is shed on the original question (Bradley, 2015, Huang, 2010).

#### 4.4 Study Phases

The focus of the Pre-phase was to understand the current state of how the department operates and how the department is executing their strategy towards medicines optimisation. Elements of a MOS were then introduced in collaboration with the participants in the ‘During’ phase and whilst developing an understanding of the emerging themes related to the change and the participants’ responses to change (Bradley, 2015). The focus of the Post-phase was a reflection on the impact that the introduction of a MOS had on the participants (Herr & Anderson, 2005).

The Post-phase also involved self-reflection, otherwise known as reflexivity, where the researcher considers their presence in the study and any impact on the research context, data and outcomes (Bradley, 2015).

## 4.5 Pre-phase Methods

The data collection methods for the Pre-phase study was primarily through Focus Groups conducted with members of the pharmacy team.

The key focuses of the study are outlined in Table 1 and include the primary questions as well as the primary method for collection of data (Bryman & Bell, 2011).

<b>Key Focus</b>	<b>Question</b>	<b>Methods</b>
Relevance	The degree to which staff feel that what they do is relevant to the department or organisation	Qualitative feedback using focus groups and interviews
Reactivity	The degree to which staff and teams are prepared for emergent issues and risks that often invoke corrective action post an event.	Qualitative feedback using focus groups and interviews

*Table 1: Focusing Questions and Methods*

### **Rationale for selection of Data Collection Methods**

Focus Groups were adopted as the preferred method of data collection method for the Pre-phase qualitative study. The rationale was that they encourage interaction between participants which highlights their view of the world and focus groups tend to reduce the gap between what people say and what they do (Gibbs, 1997), (Eriksson et al., 2016). Other methods such as structured interviews or questionnaires were considered for the Pre-phase of the study, however they were not adopted as they tend to constrain respondents to the questions sought by the researcher and the Pre-phase was seeking a less constrained view from participants (Wolff, Knodel & Sittirai, 1993). It was acknowledged that one challenge of focus groups however is that they are often difficult to moderate and tend to be open-ended, therefore it can be more difficult to keep the discussion focused on the



research objectives (Gibbs, 1997). To mitigate this challenge, some structure was provided within the focus group by use of key theme groups for discussion.

For the Post-phase qualitative study, a combination of focus groups and interviews were used. The focus groups were conducted in the identical format to the Pre-phase focus groups to ensure consistency (Wolff, Knodel & Sittirai, 1993) for future analysis. In addition to the focus groups, semi-structured interviews were conducted with the Pharmacy Leadership Team in the Post-phase to probe deeper into specific themes that emerged from the focus groups.

### **Pre-phase Focus Groups**

Three focus groups were run with participants across the pharmacy team to develop an understanding of the current state in relation to the main themes of the study: Relevance and Reactivity.

A plan for the Pre-phase focus groups was developed and is shown in Appendix E. All staff members of the pharmacy department who had been employed for more than 6 months were invited to take part in the focus groups. Participants volunteered to join the focus groups and were grouped into three different groups. The first two groups were represented by a mix of different roles in the pharmacy team and the third group was specifically with Pharmacy Technicians and Pharmacy Assistants. This was primarily due to logistical requirements that allowed these staff time off work to attend the focus groups. A scheduled education session was used to run this focus group and meaning participants did not have to take time off work. As per ethics protocol, the participants were still given the option to be there or not, so it was not compulsory.

All participants were provided with an information sheet (Appendix G) and a patient consent form (Appendix H) prior to the focus group sessions. The focus group sizes were:

Focus Group 1: Nine participants.

Focus Group 2: Nine participants.

Focus Group 3: Eleven participants.

These focus group sizes were in line with recommended guidelines of between six to ten participants, with up to fifteen in some circumstances (Gibbs, 1997).

Eight different teams of were represented in the focus groups as shown below.

- Supply / Dispensary.
- Clinical Pharmacy.
- Medicines Management.
- Medicines Safety.
- Team Leaders.
- Research / Training.
- Retail Pharmacy.
- Pharmacy Aseptic Pharmacy Unit.

To ensure that all participants in the focus groups were able to contribute, each person was given time to write their own thoughts in response to the questions before going into discussion with the wider group. The individual comments from the participants were grouped into common themes and discussion was focused around those themes.

A set of questions related to the focus of Relevance and Reactivity were used to guide the focus group (Appendix I). The questions were developed to allow participants to consider responses both as individuals, and also as a group in discussion. Participants were also asked to describe the impact that Relevance and Reactivity has on them as individuals and their teams.

Participants were provided with 'post-it' notes and pens and were given time to reflect on questions individually and write their responses, before sharing their response with the wider group. Where practically possible, different coloured 'post-it' notes were used to indicate different role types of the individuals so that the researcher could see if there were any specific themes by team in the focus groups (e.g. clinical pharmacy versus medicines management).

General discussion also took place and the key points were summarised from this by the researcher on a flip-chart pad as well as having a voice recording device to capture detailed discussion. The focus groups lasted for approximately one hour each and the process was replicated for each group.

The data collected in the focus groups was consolidated into common themes for each focus group and then themes common across the focus groups. This theming was done using a spreadsheet and responses were coded. More detail on this is provided in the analysis section of this Chapter.

The emergent themes along with specific examples of individual responses were used to describe the current state of the pharmacy department in relation to the main themes of Relevance and Reactivity.

#### **4.6 During phase Methods**

The During phase involved development and implementation of a MOS which took place over the 2016 calendar year. This approach was led by the pharmacy service with support from the researcher who was also acting as an internal project manager for this project.

Throughout the During phase, the researcher reflected on the implementation of the changes and the impacts, outcomes and behaviours observed during this phase. This was done using a research journal (Appendix A) recording reflections relating to key points of the change process. The writing of a journal throughout the change provided another data source that can contribute to the overall findings and discussion of this research (Denzin & Lincoln, 1994; Ortlipp, 2008). The journal was maintained in chronological order with entries made following events where the researcher interacted with study participants. The events were listed and then more detailed observations and reflections were noted, related to the event.

The change process was tailored to the needs of the service and teams within it, however it was based on models that were deployed across other areas of the hospital. The approach for the change involved the following aspects.

- Working with the Pharmacy Leadership Team to develop a vision for the change.
- Arranging visits ('Go-Sees') to other parts of the organisation who had already established their MOS.
- Attending workshops to guide leaders through the process to setup and establish their MOS.
- Refinement of the pharmacy strategy and supporting plans so that it is easy to communicate.
- Development of a 180 day plan of projects that are underway and planned in the department.
- Selection, refinement and development of measures aligned to their strategy.
- Use of visual management to display and share information across the department.
- Redesign of meetings across the service (both management and team level) to give them a focused purpose and action orientation.
- Coaching of leaders and team members around how deploy strategy, run effective meetings, engage their team in change and focus on improvement actions through their Management Operating System.

The principles that underpin much of the change developed through deploying a Lean Management System as outlined previously is described further in the background section of this thesis along with further information in Appendix D.

A significant effort was made to engage participants in the change process and the study related to it. To support this approach a communications plan was developed that involved regular updates to teams at their meetings and a bi-monthly update to the whole Pharmacy team. In addition to this, guidance for the change and engagement with the pharmacy team members was provided through the Steering Group that was established at the start of the research as presented in the Ethics Review. This group assessed any current and potential ethical concerns and determined any necessary actions.

## **4.7 Post-phase Methods**

The Post-phase followed a process very similar to that of the Pre-phase with the addition of a series of interviews and also a maturity assessment of the MOS within pharmacy. The different methods utilised in the Post-phase included:

- 1) Focus groups.
- 2) Interviews.
- 3) Researcher reflection.

The inclusion of interviews in the Post-phase placed more emphasis on the impact of implementing a MOS through the eyes of the Pharmacy Leadership Team. In particular, the interviews were used to consider the behavioural impacts that a Management Operating System had on individuals and leaders in the department.

### **Post-phase Focus Groups**

The Post-phase focus groups were conducted using the same format and questions as the Pre-phase focus groups with the intention of understanding participant's views on the main themes (Relevance and Reactivity) in the pharmacy department one year later after the During phase was complete. The consistency of this was key to ensure that a comparative analysis was possible between Pre-phase and Post-phase (Denzin et al., 1994). A plan was developed for the Post-phase focus groups and is shown in Appendix J.

A total of four Post-phase focus groups were run over a two-month period. As with the Pre-phase all members of the pharmacy team were invited to participate in the focus groups and the groups were not compulsory. Three of these groups were made up of people from a mix of roles and teams, and as with the Pre-phase one focus group was held specifically with the Pharmacy Technicians and Pharmacy Assistants to provide them an opportunity to participate. The same people did not necessarily attend the Pre-and Post-phase focus groups, i.e. the two phases were not constituted with the same participants.

As with the Pre-phase all participants were provided with an information sheet (Appendix J) and a participant consent form (Appendix K) prior to the focus group session. The focus group sizes were:

Focus Group 1: Three participants.

Focus Group 2: Four participants (all pharmacy lead team members).

Focus Group 3: Nine participants.

Focus Group 4: Nine participants.

The method of data collection and analysis for the focus groups was repeated in the Post-phase. As with the Pre-phase focus groups there was wide representation of the different roles and teams in the pharmacy department. The focus groups were run using the same approach as the Pre-phase to ensure that all participants could contribute. The questions posed were the same as in the Pre-phase, with one additional prompting question for each of the two main themes being explored:

- Relevance: What (if anything) has changed about relevance of your work since we developed and implemented the MOS in Pharmacy?
- Reactivity: What (if anything) has changed in terms of how you or your team manage issues since we developed and implemented the MOS in Pharmacy?

The participant's responses to all questions and their discussion was organised into a number of themes. The focus groups lasted for approximately one hour each.

### **Post-phase Interviews**

In addition to the four focus groups held in the Post-phase, a series of interviews were conducted with members of the Pharmacy Leadership Team. The purpose of these interviews was to understand the impact of implementing MOS in pharmacy and also to understand any relationship that MOS had with leadership behaviours across the pharmacy team.

Six interviews were conducted, applying the same consenting method as used for participants in the focus groups. The interviews lasted approximately 30 minutes and notes were taken by the interviewer, which were returned to the interviewee, who could then comment and make any corrections.

The same questions, which were developed by the Researcher, were used in all six interviews:

*Q1: What changes have you noticed across the (pharmacy) team since implementing MOS? (for Pharmacy Leadership Team; for wider pharmacy)*

*Q2: How has MOS impacted the delivery of service?*

*Q3: How has MOS impacted the management of change?*

*Q4: What impact have you seen on leadership behaviours as a result of MOS?*

*Q5: What would you do differently if deploying MOS again in your service?*

*Q6: What advice do you have for others who are looking to develop their MOS?*

*Q7: Do you have any overall comments?*

#### 4.8 Data analysis

The qualitative data came from three primary sources: pre-and Post-phase focus groups, Post-phase interviews and the Researcher's Journal. Figure 7 provides an overview of the different methods of data collection and how these were brought together into the combined data set for analysis.

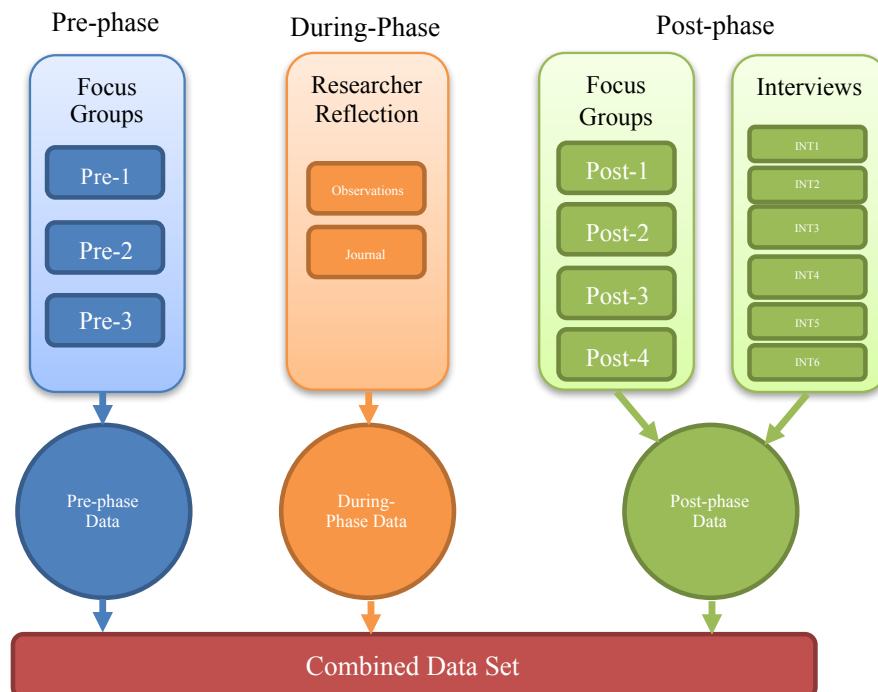


Figure 7: Data collection methods

Thematic analysis was the primary method of analysis for the focus groups and interviews. Thematic analysis is used for identifying, analysing, and reporting patterns from the data sources and developing interpretations of those patterns (Braun & Clarke, 2006; Tolich & Davidson, 1999).

Braun and Clarke (2006) emphasise that it is important that method of data collection and analysis match the questions the researcher wants to answer. Thematic analysis was selected given the nature of the data collection methods and the focus of the research question. This method of analysis allows for an active role of the researcher in the analysis as opposed to other methods, such as thematic discourse analysis and Interpretative Phenomenological Analysis (IPA), in which the researcher may take a more passive role in the assessment of the emergent themes (Braun et al., 2006). Thematic analysis is also not as prescriptive in the approach to determining patterns as other methods and often lends itself to less experienced qualitative researchers and this was another factor in choosing this method (Braun et al., 2006; Tolich et al., 1999).

### **Analytic Assumptions**

Several assumptions have been made throughout the analysis and it is important to make these transparent in the thematic analysis (Tolich et al., 1999).

- That the participants who partook in the focus groups were representative of the wider population across Pharmacy. The selection method used for recruiting participants was voluntary, open to all staff members and didn't target specific groups. However, the researcher did ensure that all staff groups were represented in both the pre-and post-focus groups.
- That many of the findings that emerged through the data collection represent the situation across pharmacy that are influenced by many factors in addition to the focus of this study.
- That participants felt they could express their views without consequence. As the researcher had an existing relationship with many of the team including senior management, the focus groups were organised in such a way to allow for people to express their views without feeling comprised.



- That the significance of certain themes was not determined by a count of responses related to that theme alone. As the researcher was present in the focus groups, factors such as the participants' emotion and level of discussion related to certain issues were also factored into the development of key themes.

### **Data coding and development of themes**

Each data source was coded so that it could be referred to in the development of findings as a reference to where the data came from (as shown below in Table 2).

Participant responses were also anonymised to the level of a team that the participant was from (e.g. Clinical Pharmacy team members used pale yellow post-it notes).

<b>Data Collection Source</b>	<b>Data Code</b>	<b>Date</b>
Pre-focus group 1	PRE-1	20/01/16
Pre-focus group 2	PRE-2	21/01/16
Pre-focus group 3	PRE-3	25/02/16
Post-focus group 1	POST-1	23/11/16
Post-focus group 2	POST-2	25/11/16
Post-focus group 3	POST-3	30/11/16
Post-focus group 4	POST-4	08/12/16
Interview 1	INT1	13/12/16
Interview 2	INT2	10/01/17
Interview 3	INT3	11/01/17
Interview 4	INT4	12/01/17
Interview 5	INT5	16/01/17
Interview 6	INT6	17/01/17

*Table 2: Coding convention for data sources*

### **4.9 Focus group analysis**

The facilitation method used during the focus groups involved participants grouping their responses into common emerging themes. This grouping was done using 'post it' notes that each participant wrote on and then the group determined the themes by collating 'post it' notes around common themes (Northcutt & McCoy, 2004). These themes were developed with the participants and therefore tested with them in the

focus groups. This approach applied an inductive approach to coding of themes as they emerge, as opposed to theoretical (deductive) theming, where the researcher outlines themes they want to align feedback to (Braun et al., 2006; Tolich et al., 1999).

Following the focus groups, data from each focus group was summarised further into common themes for each area of discussion; Relevance and Reactivity and recorded in a data capture sheet (Appendix L). The specific comments made were listed under the theme description. Once all the focus groups had been summarised by the researcher, the common themes across each of the Pre-phase focus groups were added to a spreadsheet. These were further sorted into theme groupings which indicating the number of responses by group (Braun et al., 2006). In addition to the thematic analysis done by the researcher a 'word-cloud' tool was used across all the responses to see if there were any specific words that were commonly used by participants. This provided a visual representation of the data that was collected.

The number of times a theme was raised was not the only factor considered in the data collection. As discussed by Tolich and Davidson (1999), a key feature of thematic analysis is that it allows the researcher to determine themes in many ways. The emphasis placed on particular themes by participants during discussion was also a factor considered in considering key themes.

The same process was used for thematic analysis for the Post-phase focus groups. In addition to analysis of the themes, the specific responses were analysed to draw out particularly insightful comments that could be used to provide context or bring greater richness to any findings. The comments also provided evidence to support the researcher's interpretation of the findings.

#### **4.10 Interview Analysis**

The interview notes were transcribed by the researcher detailing the responses to each question. The typed summary was then sent to each individual participant for their review and opportunity to amend or clarify the transcription (Braun et al., 2006).

The interview responses were then summarised into common themes for each question using a spreadsheet. As with the focus groups an inductive method of theming was used to not be constrained to existing set themes in the data collection (Braun et al., 2006). A count was added to themes that had more than one participant response. The themes for each question were broken into three groups (Tolich et al., 1999):

- Positively themed response.
- Negatively themed response.
- Response suggesting ideas for further development.

As with the focus groups a review of each of the interview responses was conducted to highlight specific comments that were made, which provided greater context to the themes that emerged (Braun et al., 2006).

#### **4.11 Ethical Issues**

The impact of ethical issues and how they were managed was considered from the outset of this research. Due to the fact the researcher was an employee of the organisation in which the study was being undertaken and that the findings from this study intend to be published, a full ethics application was undertaken by the Massey University Human Research Ethics Committee.

In this study, the researcher is an employee of the case organisation but is not working within the same department and is not of the same profession as any of the participants. The position of the researcher provides an excellent opportunity to apply a research design underpinned by PAR, which is differentiated from action research in that the researcher is from a different organisational sub-culture than the participants; not 'one of their kind' (Liamputtong et al., 2005). Another benefit of PAR is that the participants can get a clearer understanding of the research and the benefits it may bring (Bradley, 2015).

Through the completion of the ethics application and subsequent review, the research was designed in a way that ensured the rights of participants and the

organisation were upheld. Issues covered included matters of confidentiality, privacy, bias, conflict of interest, informed consent, Treaty of Waitangi, data management, stakeholders' rights and general methods. Guidance was provided by academic supervisors and also through Massey University's code of ethical conduct (Massey University, 2014) and the research team at the organisation in which the study was being conducted.

Several key mechanisms were used before, during and after the study to ensure ethics were upheld. These included:

- Obtaining written participant consent.
- Providing full information sheets for each participant.
- Forming a Research Steering Group.
- Making Regular Contact with the wider pharmacy staff using a bi-monthly emailed bulletin (see example in Appendix O).

Approvals from the Auckland DHB Research Department and Chief Pharmacist were sought and obtained which granted access to records and databases related to the field of study. Approval was also obtained for staff members to attend research related focus groups and interviews during working hours.

### **Participant Consent and Information Sheets**

For all the focus groups and interviews, participants were asked to provide their consent to take part in the study and use information that emerged from the study methods. An example of the participant consent form is included in Appendix H. In addition to the consent form participants were provided with an information sheet which outlined the study purpose and methods.

The information sheets outlined the rights of the participants as a part of the focus groups and informed them that whilst every care will be taken to protect their identity and for their details to be confidential, anonymity cannot be guaranteed. In addition to this, the information sheets outlined how the data was to be collected, stored and managed throughout and after the study.

All participants were given the opportunity to ask questions prior to consenting and were able to withdraw from the study and / or request summaries of the information produced during the focus groups and interviews that they were a part of.

### **Research Steering Group**

A research steering group was established at the outset of the research to guide the project through the study phases, with a particular focus on ensuring that all stages of the research were conducted in an ethical way. The governance group was made up of the following roles:

- The Chief Pharmacist.
- An executive leader within the organisation.
- Two members of the pharmacy team (from different roles and areas).
- Academic supervisors.
- And the researcher.

The steering group met bi-monthly where progress, communication and any issues were discussed. A copy of the terms of reference of the steering group is included in Appendix M. Minutes were captured as a record of the meetings and circulated to participants (Appendix N).

### **Feedback Box**

A feedback box was placed in the primary Pharmacy location for any staff member to be able to provide anonymous feedback about the study. This was to account for situations where they may not have felt comfortable approaching steering group members. Throughout the study, there were no concerns or feedback raised through this mechanism.

### **Staff Communication Updates**

There were two primary methods of providing the staff with regular communication updates during the study period.

- 1) The researcher regularly attended two different Departmental Meetings.
- 2) A bi-monthly update was emailed to all staff.

These forms of communication aimed at keeping staff informed as to the progress of the research and what the next steps would be. An example of the email update is shown in Appendix O.

#### **4.12 Chapter Summary**

This chapter provides a detailed account of the research design and methods of this study with the aim that other researchers may be able to replicate the study.

The research design articulates the three study phases (Pre, During and Post) and a description of the methods for data collection is provided. The method of analysis for each of the data sources is described which produce the basis for the findings as outlined in the following chapter.

The chapter also provides an overview of the management of the study including the various methods used to ensure that the study was conducted in an ethical manner.

## Chapter 5 – Findings

### 5.1 Chapter Introduction

This chapter outlines the findings from the data collection methods during the Pre-phase and Post-phase of the study.

The Pre-phase findings provide a baseline for the study which reflected the current situation prior to the Management Operating System being introduced. The Post-phase findings highlight not only an updated view of the study participant's views, but the change observed for Pre-phase to Post-phase analysis. It is acknowledged that other factors may impact on the changes seen from the Pre-phase to Post-phase findings, as this study was conducted in a live operational environment where other changes were taking place.

The high-level themes of the findings are shown below in Figure 8.

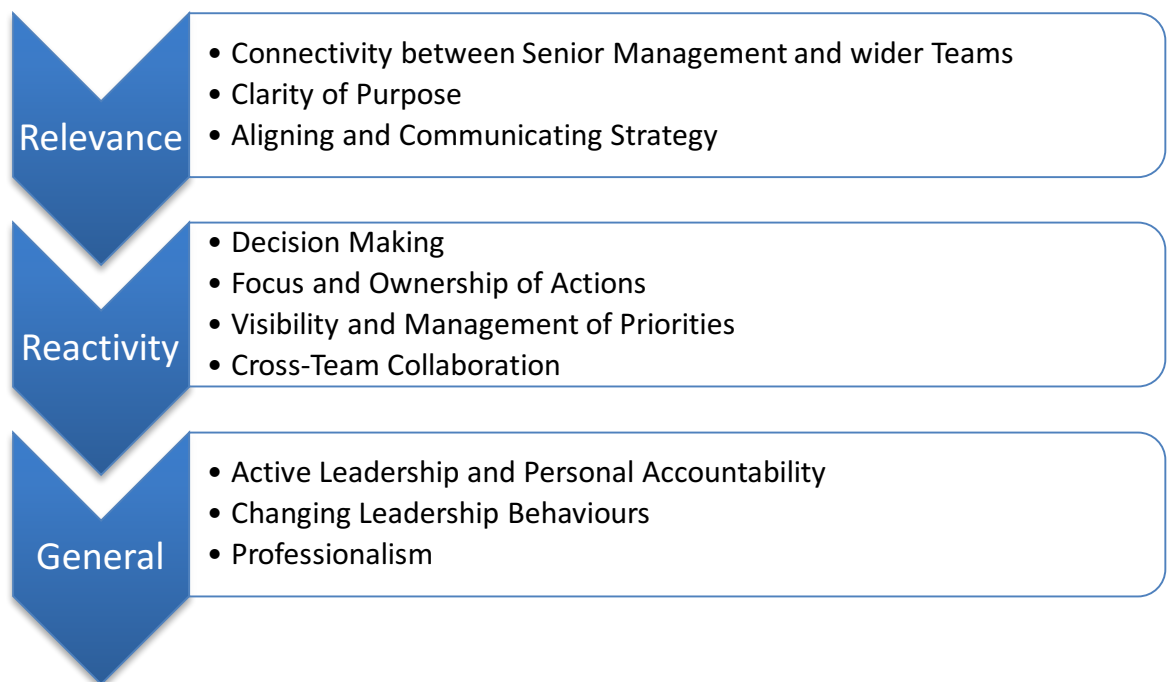


Figure 8: Summary of Findings

## **5.2 Coding and References**

The findings section refers to a range of sources of data collection which have been codified as outlined in Table 2 in Chapter 4.

References to specific findings and participant quotes in this section are provided in the following format (role, data code, date).

## **5.3 Pre-phase Findings**

The findings from the Pre-phase of the study represent the current state of the pharmacy department prior to any change being introduced. They provide context of the landscape in which the study was conducted. The findings have been collected through the Pre-phase focus groups carried out at the beginning of the study.

As outlined in the methods section there are two main themes explored through qualitative methods in this study: Relevance and Reactivity. The methods include focus groups in the Pre-phase, and focus groups, interviews and researcher reflection in the Post-phase. The structure of the findings from the Pre-phase analysis is centred around these two areas of focus and draws from the methods used to collect the data with each group. The findings outlined in this Pre-phase section seek to describe the outcomes of the analysis for the two main themes in a way that establishes a 'base-line' in which to compare the Post-phase findings.

This 'base-line' is critical as it is acknowledged that there are already many other factors that already have influence on both of the main themes (Relevance and Reactivity) and that the study is not starting from a 'blank sheet of paper'. The Pre-phase findings describe what is already happening, that could have either a positive or negative impact on the themes, as well as identifying what is not happening.

### **Issues of Relevance – Pre-phase**

Relevance has been defined as “The degree to which staff feel that what they do is relevant to the department or organisation” (Table 1, Chapter 4). This study places



focus on this topic as one of the goals of a MOS is to provide greater alignment of what staff are working on with the wider departmental focuses and strategy.

### Relevance – Interpretation of Pre-phase Focus Group Findings

A number of themes emerged from the Pre-phase focus groups that related to relevance as outlined in Table 3. Key themes that are covered in this section are:

- Understanding of Strategies and Goals.
- Connections with other teams.
- Meetings and Feedback.
- and Communication.

Relevance: Theme	Supply / Dispensary	Clinical Pharmacy	Medicines Management	Medicines Safety	Team Leaders	Pharmacy Technicians	Role not disclosed	TOTAL
Priorities Strategy and Goals	1	3	-	3	-	4	-	11
Priorities	2	1	3	-	-	4	-	10
Connections with other teams	1	3	-	2	-	3	-	9
Meetings / Feedback	-	3	2	1	-	-	3	9
Alignment to Org vs Department Communication	-	2	-	-	-	-	6	8
	-	-	1	2	-	-	-	3
	-	-	-	-	-	-	2	2
<b>TOTAL</b>	<b>4</b>	<b>12</b>	<b>6</b>	<b>8</b>	<b>-</b>	<b>11</b>	<b>11</b>	<b>52</b>

Table 3: Count of responses by Theme and Role - Pre-phase: Relevance

### Understanding of Strategies and Goals

Focus group participants commented that it was important to have a good understanding of the strategies and goals of the department to help with the relevance of their work. For example, one participant commented that “Transparency of departmental strategy facilitates their own goal setting”; (Clinical Pharmacist; PRE-2; 21/01/16). Whilst some participants indicated that they were becoming clearer about how they should link to other staff in the organisation, for example through the development of the Pharmacy and Medicines Management Strategy, the findings also revealed that a number of people felt there was a lack of direction from management. For example, one participant stated that the lack of direction from management led to a lack of clarity around purpose (Supply and distribution team member, PRE-2, 21/01/16).

### ***Connections with Other Teams***

A key finding from the Pre-phase was that many staff did not feel connected to their own pharmacy team. A number of staff (particularly those in clinical facing roles) commented that they felt a stronger connection with the clinical teams they worked with on a day-to-day basis, implying that this had greater relevance to what they do than the pharmacy team. For example, one clinical pharmacist stated, “We have more connection with directorates rather than pharmacy department” (PRE-1, 20/01/16). This belief was reinforced by clinical facing pharmacy staff commenting that they regularly attend MOS meetings with the ward based clinical services they worked with and therefore felt a part of the clinical service teams. This connection could be explained by the direct, and positive, impact that pharmacists felt they were having with patients through the clinical services, where-as the combined impact as a part of a wider pharmacy team was believed to be more arbitrary.

This connection to teams and their priorities outside of pharmacy was further expanded on by participants when they described their alignment to the overall hospital priorities as opposed to those priorities of the pharmacy department. A medicines safety staff member stated, “I don’t always see a direct link to what I do with regard to the department priorities [however] I can see more connectedness with organisational priorities at this stage” (Medicines Safety staff member, PRE-2, 21/01/16). This comment was in relation to organisation priorities such as maintaining patient safety and quality of care, which were seen to be more visible through organisational priorities.

### ***Meetings and Feedback***

Another theme that emerged related to relevance was how feedback was provided and use of meetings. A number of participants shared their belief that their main source of feedback was through one-on-one meetings with managers. There were a number of comments that there were not departmental meetings or regular open staff meetings and as a result the “whole of pharmacy team is not as connected” (PRE-1, 20/01/16).

### **Communication**

Participants felt communication was an important factor for ensuring relevance in what they do in their everyday working lives. There was mixed feedback on communication across the different staff groups, some commenting that they have good channels with their senior staff, whereas others felt that there was not enough communication for example, “New changes are mentioned, but never followed up, or never mentioned again until the change happens” (Pharmacy Technician; PRE-3; 25/02/16). Organisational wide communications (such as the CEO blog and e-Newsletter) were mentioned as channels for developing relevance with the organisational focuses (PRE-3; 25/02/16).

### **Impacts of Relevance – Pre-phase**

As a part of the focus groups, participants were also asked to discuss and describe any impact on how they felt and acted, if there was a greater degree relevance in their job. Themes that emerged from PRE-1 and PRE-2 focus groups were:

- Job satisfaction - Having a job with relevance to the wider team increased satisfaction that you were doing something of value.
- Buy-in and Motivation – Relevance of your job increases motivation to do more
- Apathy – If you do not feel your job is relevant it can create a feeling of apathy
- Doing own things – By having relevance in your job you are less likely to do your own things and more likely to work as a team. This in turn can reduce duplication of work across teams.
- Productivity – All of these impacts can lead to improved productivity of individuals and wider teams.

(PRE-1, 20/01/16; PRE-2, 21/01/16).

### **Issues of Reactivity – Pre-phase**

This study aims to explore and understand the impact a MOS has on Reactivity within a team. Reactivity has been defined as “the degree to which staff and teams are prepared for emergent issues and risks that often invoke corrective action post an event” as outlined in Table 1 in Chapter 4. This behaviour can otherwise be described as ‘knee-jerk’ reactions and often consumes a lot of effort through not being prepared. This can lead to a lack of confidence and in some cases micro-

management and is the opposite of what we would describe as being proactive behaviour (i.e. taking action in advance of issues arising). The study focused on the impact that this reactivity has on the team in their ability to manage and take action on issues and risks that may arise.

One of the goals of a MOS is to enable people to have greater awareness of priority areas and support them to take action – that is take ownership in being more proactive.

### Reactivity – Interpretation of Pre-phase Focus Group Findings

A number of themes emerged from the Pre-phase focus groups that related to Reactivity as outlined in Table 4. Key themes that are covered in this section are:

- Communication and Involvement.
- Engagement.
- Change Planning.
- Management Priorities.
- and Urgent Response.

Reactivity: Theme	Supply / Dispensary	Clinical Pharmacy	Medicines Management	Medicines Safety	Team Leaders	Pharmacy Technicians	Role not disclosed	TOTAL
Communication / Involvement	6	3	5	8	2	6	-	30
Engagement	2	3	1	1	1	3	-	11
Support	3	1	-	3	-	1	-	8
Change Planning	-	3	1	3	-	-	-	7
Uncertainty	-	2	1	1	2	-	-	6
Urgent response	1	1	-	1	-	2	-	5
Pace of change	1	-	2	-	-	-	-	3
Resources	-	-	-	1	-	1	-	2
Being Heard	-	-	-	-	-	1	-	1
<b>TOTAL</b>	<b>13</b>	<b>13</b>	<b>11</b>	<b>18</b>	<b>5</b>	<b>14</b>	<b>-</b>	<b>73</b>

Table 4: Count of responses by Theme and Role - Pre-phase: Reactivity

### Communication and Involvement

Participants raised the connection between Reactivity and communications pathways. Concerns were highlighted, most commonly around the level of communication that related to upcoming events or changes. Whilst some participants felt that they were informed (“Feel well prepared as there are always emails being sent”; Pharmacy Technician; PRE-3; 25/02/16), others commented that communication was not as effective as it might be. One Pharmacy Technician

complained of poor communication in that work was often dumped on him without warning. (Pharmacy Technician; PRE-3; 25/02/16).

A lack of information also came up as a key cause of Reactivity for the teams. A number of staff groups fed back that they felt un-informed of upcoming changes. This was also reflected through comments related to a lack of transparency which can generate negativity. The words of one focus group attendee illustrate that disconnect; “I feel like SMT know but not staff further down in pharmacy” (Medicines safety team member; PRE-1; 20/01/16).

### ***Engagement***

Approximately one-third of participants in the Pre-focus groups commented that they felt that engagement of staff had a big impact on acceptance of change and therefore reactivity. There was a mixed view on the level of engagement and involvement of staff across teams (“Depends on people’s attitudes – some are positive and happy to change – some complain a lot”; Supply and distribution team member; PRE-2; 21/01/16).

### ***Change Planning***

The level to which change was planned also emerged as a key driver of Reactivity. Participants commented that there were “not consistent approaches to planning and managing change” (Medicines safety team member; PRE-1; 20/01/16) and it was not clear if the change was an organisation priority versus local priority. This impacted how much support was provided by teams to participate in change.

### ***Managing Priorities***

A large number of participants raised the fact that they often struggle to deal with multiple priorities and that they were often under time pressure. There was a view shared that pharmacy staff received very little support when it came to managing these priorities which had an impact of not being sure what to focus on, leading to stress. One focus group member described the situation of having to “Prioritise critically ill patients when there are too many patients compared to pharmacists”; Clinical Pharmacist; PRE-2; 21/01/16).

### ***Urgent Response***

Another emerging theme related to Reactivity was that of having to deal with urgent responses. Some teams (e.g. supply and distribution) described dealing with urgent responses as a standard part of their work, where others felt that having more focus on identifying issues could reduce this urgency. One member of the Supply and Distribution team described their situation of how they work and deal with task as being that “everything is urgent! We only respond to crisis and don’t identify issues in a timely manner” (Supply and distribution team member; PRE-2; 21/01/16).

### **Impacts of Reactivity**

The focus groups were encouraged to discuss the impacts that Reactivity in the workplace had on them and their teams. A large number of issues were raised however the members of PRE-1 and PRE-2 focus groups identified the following key areas:

- Feeling unsupported (x5).
- Feeling stressed (x 4).
- Feeling undervalued (x 3).
- Feeling unproductive (x 3).
- Being frustrated (x 3).
- Not being trusted (x 2).

(PRE-1, 20/01/16; PRE-2, 21/01/16).

The groups identified that the collective impact of these factors was that engagement across teams dropped and key measures such as sick leave increased and staff retention was reduced. These factors have potential to have a significant impact on the wider team dynamic and ultimately the quality of the work that they provide. The factors related to Reactivity can also be cyclical in that, if people are less engaged and absenteeism is increased, there may be less staff available to proactively deal with issues resulting in further Reactivity.

## 5.4 Post-phase Findings

The ‘During’ phase for this research could continue indefinitely, as the refinement of management practices are continually evolving. However, in order to evaluate the change that had taken place in the During-phase, the Post-phase was commenced after nine months into the change process. This phase signified a ‘stake in the ground’ reflecting a period of time where tangible change may be observed. The timing of the commencement of the Post-phase was decided based on a number of factors:

- 1) That enough time has been allowed for changes in practice to be introduced and embedded.
- 2) That it was congruent with the commitments of the pharmacy department and hospital.
- 3) That study participants were available for both the Pre and Post-phases.
- 4) That the researcher was available for both the Pre and Post-phases.

Consistent with the Pre-phase findings, the Post-phase findings evaluate data from Focus Groups, Interviews and Researcher Reflections and are presented in three sections.

- I. Issues relating to Relevance.
- II. Issues relating to Reactivity.
- III. Other emerging themes.

The themes that emerged from participant responses in the focus groups are summarised in Table 5 and expanded on in the following sections.

Theme	Relevance	Reactivity	TOTAL
Leadership, Behaviours and Communication	19	41	60
Meetings	16	15	31
Strategy and 180day plans	23	-	23
Connections with other teams	17	-	17
Urgent response	-	4	4
Focus / KPIs	-	2	2
Team Involvement / Communication / Consultation	-	-	-
<b>TOTAL</b>	<b>75</b>	<b>56</b>	<b>131</b>

*Table 5: Count of responses by Theme – Post-phase: Relevance and Reactivity*

## **Issues of Relevance – Post-phase**

This section covers the findings that came out of the Post-phase focus groups, interviews and researcher reflections related to Issues of Relevance (as defined in Table 1, Chapter 4). Key themes that are covered in this section are:

- Strategy and alignment: How this differs between management and teams.
- Connection and collaboration within teams, versus across teams.
- The impact of leadership behaviours to support a Management Operating System.

## **Relevance – Interpretation of Post-phase Focus Group Findings**

The following are key findings related to Relevance that emerged from the four Post-phase focus groups and are summarised in Table 5.

### ***Strategy and Projects***

The feedback on how the pharmacy department managed strategy and projects was mixed. Some participants believed that they have seen an improvement in the communication of strategy and projects primarily through the use of the 180 day plan (“We have access to the 180 day plan now which is good to see what projects are happening”; POST-1; 23/11/16). Other participants indicated that they had little or no understanding of the 180 day plan. However overall there was a general sense that there had been improvement around communicating and aligning priorities compared to before the development of MOS as described by one participant; “I’ve been able to join the dots more” (POST-1; 23/11/16).

The findings indicate that there was little visibility of the organisational strategy and goals within pharmacy, with the exception of organisational values and targets, for example, one participant stated, “I understand organisational focus in relation to values and targets, but not much else” (POST-3; 30/11/16). It was also commented that whilst plans had been developed through MOS, these were visible and discussed in some teams but not in others. One team member said: “The 180 day plan is not linking so well with MOS individually” (POST-3; 30/11/16). The communication of the plans was not always evident.



Another key finding that emerged was the difference between the Pharmacy Leadership Team and wider pharmacy teams, related to the awareness and visibility of strategy and the tools, in particular the 180 day plan. This is illustrated by a member of POST-1 (23/11/16) in their comment that “whilst the senior management team are aware of the 180 day plan, [I’m] not sure that everyone knows about it”.

### ***Connections with other teams***

The majority of focus group members believed that there has been improvement in the connection across teams within pharmacy through MOS. Many participants also believed that MOS has made people consider how they work together across the different pharmacy teams (“MOS has connected sub-teams and enables me as a manager to understand what is happening across teams”; POST-2; 25/11/16). However, unless pharmacy teams were working directly with clinical teams, there was no further evidence of a change in the levels of connection with teams outside of pharmacy through MOS.

There were some teams that still felt disconnected from the wider pharmacy team, particularly those that were not located in the main pharmacy department. One team member was adamant that they were “not well connected with the rest of the department... only when it is relevant to us” (POST-3; 30/11/16). The explanation given for this was that usually they “focus on the main pharmacy department” (POST-3; 30/11/16). This finding indicates that where people are co-located on the same site (such as Auckland City Hospital) the connection may have improved, but not necessarily for those on separate sites (such as the retail pharmacy at Greenlane Clinical Centre).

From a manager’s perspective (as represented by members of POST-2), MOS has enhanced the connection of their internal teams (“MOS has connected sub-teams and enables me as a manager to understand what is happening across teams”; POST-2; 25/11/16). This connection between the manager and their team has had a significant impact in team focus from the manager’s view (“The clinical MOS meeting has been a game-changer for me”; POST-2; 25/11/16).

## **Visibility**

The majority of the focus groups members felt that the introduction of the MOS visual boards has improved the visibility of what is happening across teams and the department. In some areas, this visibility has increased the transparency of information and improved communication (“There is greater visibility of targets and how we track”; POST-3; 30/11/16). A challenge for some teams has been finding a good location for the MOS boards. The location has impacted the level of visibility in some areas of the pharmacy as the boards had to be placed in a sub-optimal location where there was free wall space (“you wouldn’t see the boards unless you go there”; POST-2; 25/11/16).

The increased in visibility across the pharmacy department had an impact on supporting change (“I can see there will be change by getting things visible”; POST-2; 25/11/16) and also increasing Relevance (“It has been good to have strategy out there so people can relate back”; POST-2; 25/11/16).

## **Relevance – Interpretation of Post-phase Interview Findings**

There is a clear difference between the degrees of Relevance observed within the Pharmacy Leadership Team (PLT), as opposed to the wider pharmacy team. The PLT described that they have seen improvements in the visibility of change activity and that they have a better understanding of alignment of projects to strategy through MOS. In particular, the development of the 180 day plan has helped with this visibility and alignment. One particular interviewee remarked “the 180 day plan has been amazing. You can see everything we are doing and have them visible on the plan” (INT4; 12/01/17). The themes that emerged from the interviews related to Relevance were:

- Improved collaboration between teams in managing change (6 out of 7 participants).
- Improved visibility and alignment of activity and change (4 out of 7 participants).
- Providing a process for more effective change (4 out of 7 participants).

In contrast, it has emerged from the interviews that whilst there have been some improvements related to Relevance across the wider pharmacy, there is still a lot

more that needs to take place around raising the wider teams' awareness of direction and the role they play in this ("We are still at 4 out of 10 when it comes to using the 180 day plan, so there is still work to be done"; INT5; 16/01/17). The interviews highlighted that further connection of the pharmacy A3 and 180 day plans are required across the pharmacy team and there is a key role of clinical leads in sharing future goals with their teams ("The challenge now is what we do next - This will be to engage all the service, and engage the wider team in the PLT MOS and make it more visible to all"; INT1; 13/12/16).

### **Relevance - Researcher Reflections**

Findings related to researcher reflections were drawn from the Researcher's Journal (Appendix A). The following findings were observed in relation to Relevance.

There is a significant gap between the levels of Relevance observed with the Pharmacy Leadership Team (PLT) versus the wider pharmacy team. This gap is more prevalent in the more operational roles in areas such as Supply and Distribution and as a result, the members of these teams seemed less engaged in broader changes across the pharmacy department.

There were a number of times that the researcher had discussions with the leaders of the teams about taking their plans out to the teams and explaining to them what they are trying to achieve, but in the most part this didn't happen. The team leaders could frequently see the value in doing this, however it was rarely done. This could have been that it was not seen to be a priority or else they didn't feel comfortable talking the team through it.

Another common finding during the study phase was that there was a sense of reluctance to communicate a strategy or plan as it was seen to be still in development. The desire to only articulate a final plan became a limiting factor in some cases to engage teams with the direction of change in the department.

## **Summary of Findings Related to Relevance**

- Specific tools and methods through MOS have improved the sharing and alignment of strategy and direction, however there is a difference in how much this has improved between the Pharmacy Leadership Team and the wider pharmacy team.
- There has been an increased level of connectivity within and across teams through MOS, primarily influenced by the visibility of information and the channels to share information and actions.
- The 180 day plan has been highlighted as a key method to provide a summary of projects and for people to know what is happening, however this was not visible to all.
- The level of Relevance relies not just on the methods to align and communicate information, but also the leaders' role in taking this out to the teams.
- Managers of teams found that MOS has helped enhance collaboration within and across the teams and this has been beneficial in the manager's role.

## **Issues of Reactivity – Post-phase**

This section covers the findings that came out of the Post-phase focus groups, interviews and reflections related to Issues of Reactivity. As covered earlier, Reactivity is defined as “the degree to which staff and teams are prepared for emergent issues and risks that often invoke corrective action post an event” as outlined in Table 1 in Chapter 4.

The themes related to Reactivity are summarised in Table 5 and the following themes are further expanded upon in this section:

- Effectiveness of Team meetings and use of ‘MOS’ Boards.
- Communication and Team involvement through MOS.
- Accountability for action within teams.
- Responsiveness to operational demands.

## **Reactivity – Interpretation of Post-phase Focus Group Findings**

### ***Effectiveness of Team Meetings and use of Visual MOS Boards (31 responses)***

The findings indicate that MOS has improved how teams focus on, and deal with, issues and risks in their team meetings. One participant commented that the “MOS board focuses on issues – it helps keep them in our mind” (POST-3; 30/11/16). The approach used through MOS has also helped teams be involved in developing the solutions, as opposed to raising issues, for example one participant from Post-phase focus group 3 (30/11/16) remarked that “we end up trying to identify solutions in MOS rather than identify the problem and then have feedback with thought”.

The introduction of whiteboards to increase the visibility of what teams are focusing on has helped with team involvement and engagement. One participant captured this sentiment succinctly: “Having a real board makes it very tangible” (POST-1; 23/11/16). Participants remarked that issues are increasingly visible and “things are not being swept under the carpet” (POST-1; 23/11/16). The visibility also has impacted a focus on action as described through remarks such as “the actions won’t go away” (POST-1; 23/11/16).

Improved meetings through MOS have also improved how decisions are being made and who are making them. One participant remarked that “before MOS, making decisions without involving key people was a challenge” (POST-1; 23/11/16), implying that now (with MOS) decisions were being made by the team without key (senior) people around.

In general participants described the positive change seen through MOS meetings, however there were a few comments suggesting that improvements could still be made to meetings in particular about communicating outcomes of meetings across the department and being concise in the meetings.

### ***Communication and Team Involvement (26 responses)***

The feedback from participants indicated that there is now greater team involvement with MOS. This increased involvement has resulted in issues being more easily dealt

with and enabling the team to raise issues and solutions. For example, one participant stated; “MOS allows the team to take part in developing and owning the solutions” (POST-2; 25/11/16). This has meant teams are “more flexible and nimble with change” (POST-2; 25/11/16) and as a result there has been an increase in communication and everyone knows what the issues are and what is being done about them (“There is more discussion about things (issues) because it is visible”; POST-1; 23/11/16).

Many people reflected that they felt more involved in decision making through MOS, and can have a say in the direction of the team (“Teams contribution to a specific focus is more evident”; POST-2; 25/11/16).

Whilst the vast majority of participants believed there has been positive change in this area, it was commented by one or two participants that they felt that whilst MOS has helped, there were still situations involving lack of communication and that teams often don’t have time to deal with the issues once they have been highlighted.

#### ***Leadership and Accountability (15 responses)***

Across all of the focus groups, there was a common theme that came through in that having an effective MOS still relies on clear leadership and accountability within and across teams. Participants expressed that “MOS relies on people being accountable” (POST-3; 30/11/16) and that “there can be a lack of initiative or desire to change or contribute” (POST-3, 30/11/16).

These comments emphasise the critical link between having a sound framework, but it will only be effective with appropriate and effective leadership behaviours within a team. These themes around the importance of leadership and accountability are discussed in more detail in the Other Emergent Themes section.

#### ***Responsiveness (4 responses)***

The findings indicate that there has been an increase in responsiveness across the pharmacy teams. Participants commented that having more regular MOS meetings and visibility of issues and risks, meant that most issues are being dealt with faster and “there is a specific timeframe for action on issues” (POST-4; 8/12/16).

In contrast to this finding, some participants drew attention to the fact that there were still some projects that remained unfinished and that “some issues can be dealt with slowly” (POST-4; 8/12/16).

### **Reactivity – Interpretation of Post-phase Interview Findings**

The interviews provided evidence that the PLT members felt there has been an improvement in how the wider pharmacy teams deal with the management of issues and risks. This has largely been supported by the establishment of regular operational meetings (both at Pharmacy Leadership Team and in departmental teams) and through the use of the visual (MOS) boards.

A common finding amongst the interviewees was that members of teams are taking a greater accountability for action (*12 responses*). The increased accountability was aided by the use of the ‘concern, cause, countermeasure’ approach to managing an issue which encouraged the team members to be involved in developing the solution (countermeasure) and then taking responsibility for the associated actions. One interviewee expressed their belief that “people feel more results driven and feel more accountable... you are now held to account by the team” (INT5; 16/01/17).

The interviews also highlighted the impact that MOS has had on focusing on the ‘real issues’ and priorities (*8 responses*). An interviewee explained this by stating that “we are more focused and getting better at identifying what the issue is, what we need to do and who is doing it” (INT2; 10/01/17).

The impact that improved focus on issues has had on the pharmacy department since the development of MOS has been that teams are less reactive to issues that are arising. Issues are being dealt with by the teams where they are occurring and not being left to the PLT to resolve the issues at a later time. The ownership of issues at a team level means that problems are less likely to linger and risks can be managed and not materialise into significant issues.

A specific example raised in an interview described how the visibility of priorities through MOS has affected the delivery of service.

“We had a period where there were a number of vacancies across the department, but this was not visible across the whole department. Previously it would have been difficult to identify this as an issue for the team to focus on, but using the MOS board gave this visibility. If we didn’t have this, it may not have happened as quickly” (INT5; 16/01/17).

The third key finding from the interviews in relation to Reactivity was to do with the engagement and participation of the team in decision making (*8 responses*).

Interview participants described how MOS encourages communication and involvement in discussion that may otherwise have been done in isolation.

“This has helped us work as a team – we don’t just talk about our own agendas at team meeting” (INT4; 12/01/17).

One area that was highlighted for further improvement was looking at how issues that span across several teams can be supported through the MOS approach. It was felt that the connections between the teams in resolving these issues were not as effective as they could be and issues continued to be managed in different silos.

However, one interviewee explained that:

“what is starting to develop is the ability to take issues and risk from one teams’ MOS board to another. We have just started to do this and it means that connections are not just ‘up and down’ (cascade), but also horizontal when needed” (INT5; 16/01/17).

### **Reactivity - Researcher Reflections**

Findings related to Reactivity were drawn from the Researcher’s Journal (Appendix A). In the researcher’s view, the biggest gains seen from the development of MOS within the pharmacy department was the change in how the teams dealt with Issues and Risks. Initially for the PLT and then wider pharmacy team, as they developed their MOS and adopted the ‘concern, cause, countermeasure’ (CCC) approach to dealing with Issues, they were clearer on what was happening, what action needed to be taken, who was accountable for the action and by when. The CCC structure



really clicked with many of the teams and they were able to ensure that Issues didn't get left to grow or spread. The adoption of the CCC structure has enabled people to step up and take responsibility for action, where in the past it was often led by the team leader.

The way issues were being dealt with through MOS also helped teams (in particular the PLT) to consider where the issue should sit. There was a shift over time from most issues being managed at PLT level, to more being owned and managed at team levels, as the problems did not have an impact outside of their team. The PLT were often made aware of these; but they were not involved in resolving them unless assigned an action by the team.

### **Summary of Findings Related to Reactivity**

Five primary areas emerged in relation to how the development of a MOS impacts Reactivity. These were common themes that emerged across all the data collection methods.

- A greater involvement and engagement of teams particularly in decision making.
- Team meetings were much more effective and had greater focus on the 'real issues' and priorities.
- There was greater accountability for action and more people involved in taking action.
- Effective MOS processes alone were not enough to counter Reactivity and leadership behaviours were required to follow through on actions.
- Teams felt that they were more responsive to issues.

### **5.5 Other Emergent Themes – Post-phase**

The Post-phase focus groups and interviews saw other themes emerge in addition to those that had a direct relationship with Relevance and Reactivity. The key themes that emerged were:

- Leadership behaviours.
- Team dynamics and collaboration.
- Connection of the wider pharmacy team.

## **Emergent Theme 1 – Leadership Behaviours**

### ***Leadership Behaviours – Post-phase focus group findings***

Throughout the study there have been clear themes that emerged related to the impact that MOS has had on leadership behaviours across the pharmacy department. The findings were largely captured through the Post-focus groups, interviews and researcher's reflections.

A key finding from the majority of focus groups and interviews was that MOS has provided the opportunity for people to step up and take on new responsibilities. This behaviour was particularly evident in the team settings where the approach and principles of MOS simply allowed for team members to take a greater role in contributing to their teams. There were specific examples raised where people taking responsibility to lead meetings and staff members were more involved in problem solving or being a part of project groups, for example one focus group member shared their opinion that “MOS has provided a vehicle for other people to empower and take ownership” (POST-2; 25/11/16).

The majority of interview participants reported that there had been a greater accountability for action. Team members had been asked to take on new roles and had a greater level of delegated responsibility. The visibility of countermeasures, and having names assigned to them, developed greater accountability for action, for example on participant commented that “I can see there will be change by getting things visible” (POST-2, 25/11/16). This change is primarily related to how teams are managing their issues and risks within their teams and people are taking ownership of the issues and solutions to resolve them. Participants describe that the impact that greater accountability had on their teams was that issues were being resolved in a timely manner and others were aware of progress to resolving them.

The focus groups highlighted that there is still a disconnect between the Pharmacy Leadership Team and the wider pharmacy team. The identification of the disconnect was consistent across all four focus groups, but the level of this disconnect varies across different teams (“It can be difficult for the senior management to know what

is going on in the teams”; POST-1; 23/11/16). As a result, there were comments such as “often it can feel like the decision is already made”; POST-1; 23/11/16).

There was also consistent feedback that indicated that issues were not being actioned in a timely manner and whilst MOS helps facilitate the process for dealing with issues and managing change, it still requires people to be accountable to follow through on their actions (“MOS relies on people being accountable”; POST-3; 30/11/16). A common occurrence was issues being listed on the Issues and Risks board, not actioned and the date just being changed. Taking action on solutions was still a challenge as described by one participant who remarked that “some people continue with old methods, for example, just raising issues and not taking part in solutions” (POST-3; 30/11/16). Some of this could be explained by the limited time that some team members had to work on resolving the issues assigned to them (“Working as a team is much the same – No time to deal with issues”; POST-4; 8/12/16).

It also emerged that there are still situations where leaders will default to ‘telling’ their teams what to do which may have had an impact on the engagement of MOS in those areas. For example, in one of the focus groups it was described how “there is a hierarchical system, dependent on manager” (POST-1; 23/11/16) which can lead to a very top-down approach.

One specific comment summed up the reliance on leadership behaviours for MOS to be successful: “MOS is not the solution – it is a method and it is only as good as the people who use it”; POST-3; 25/11/16).

### ***Leadership Behaviours – Interview Findings***

The Pharmacy Leadership Team (PLT) interviews surfaced common themes around the change in leadership behaviours that have been observed since the development of MOS within pharmacy. Many of the findings from the interviews relate to the PLT reflecting on their own actions and behaviours. It is recognised that MOS is only one of many factors that may have influenced these behaviours over the study period, but the findings indicate that it may have a strong connection.

The structure provided by MOS, particularly in the way that meetings are run, has seen a change in how members of the PLT interact. A change can be observed in the level of professionalism of the members of the team, in particular when it comes to how they challenge one another. This change has seen a shift from negative challenge to a more constructive and supportive challenge. One participant captured this sentiment: “In the past there was not so much healthy / constructive discussion – it was seen more as a negative challenge in many cases” (INT2; 10/01/17). There is also more of a common focus between the team rather than working as individuals with their own portfolios. For example, one interviewee believed that the “MOS has helped PLT work as a team – we don’t just talk about our own agendas at team meeting” (INT4; 12/01/17).

The PLT members also perceive that there has been an increase in team members stepping up to take accountability for action and also take on more responsibility in how the team operates. Examples of this include shared facilitation of the team meeting, and people putting their hand up to take on actions (“...team members take turns at scribing and running the meetings – people are taking responsibility”; INT4; 12/01/17). This has been role modelled through the PLT and the same impacts are being observed across the wider pharmacy teams.

The findings also indicate a greater level of collaboration between team members by being on the same page (“There is more collaboration between clinical leads”; INT1; 13/12/16). This has led to them being more willing to support one another and share and contribute in the team. The impact that this has had is that team members are taking more ownership for focuses outside of their own specific specialist portfolios.

“There is a willingness to contribute to problem solving outside their area of expertise” (INT1; 13/12/16).

It also means that if the senior member of the team is not available, the focus continues on without them and others can step-up as required. The wider impact of this is a greater common understanding of the team’s focus and increased communication across the pharmacy department.

### ***Leadership Behaviours – Researcher Reflections***

Throughout the change initiative there have been numerous situations that have demonstrated how critical leadership behaviours are for the successful implementation and functioning of a MOS. These findings related to leadership behaviours were taken from the Researcher’s Journal (Appendix A).

One such example came from a discussion with a team leader about how they ran their team meetings. They were struggling to use the ‘concern, cause, countermeasure’ framework and wanted advice on how to improve this. What emerged from the discussion was that their natural leadership style was to develop the solution themselves and tell their team what to do. This approach conflicted with the objectives of the project, as more of a collective facilitation process, where the team described their concerns and then worked to collectively understand the causes and thereafter develop appropriate countermeasures. If this process was followed, the solutions may have been different to what the team leader had initially imagined, but they would be owned by the team. In discussing this with the team leaders they reflected on their own behaviours and asked the question, “Do I need to change how I engage my team”? (refer to Appendix A).

Another behaviour that emerged through the development of MOS was the role modelling and impact that a team leader has on their team. The nature of how MOS was used by a team and therefore its’ effectiveness was influenced by the leadership behaviours exhibited by the team leader. An example of this was observed in a team meeting where the operational work was carrying on whilst the meeting take place. It was observed throughout this meeting that team members coming and going from the meeting when an operational requirement emerged. In fact, in many cases all of the team would stop the meeting, once one person went off into the operational environment. The meeting would then reconvene sometime later, and therefore it wasn’t fluid and took a long time to complete. In some of the cases it was the team leader who was demonstrating this behaviour and as a result everyone else in the team picked up on this role modelling as it was deemed to be an acceptable behaviour. After observing this behaviour and discussing it with the team leader, it was only then that they realised the impact that this was having on the effectiveness of their meetings.

## **Emergent Theme 2 – Connection of Wider Pharmacy Team**

### ***Connection of wider pharmacy team – Post Focus Group Findings***

Whilst earlier findings demonstrate that there has been progress made in levels of connection within individual teams, the findings indicate that there is a gap in the connection of the Pharmacy Leadership Team and the wider pharmacy team (“The connection between the Pharmacy Leadership Team and wider teams hasn’t changed, however within teams there has been a big improvement”; POST-1; 23/11/17). It also emerged that some teams felt that they were still not well connected to other teams in the pharmacy department, particularly those that are geographically separated from the main pharmacy location. For example, one participant believed that “We are not well connected with the rest of the department – only when relevant to us. Documents are sent around but usually focus on the main pharmacy department” (POST-3; 30/11/16).

### ***Connection of wider pharmacy team – Interview Findings***

When the Pharmacy Leadership Team members were asked what they would do different in the future, there were two responses that suggested they would put a greater focus on engaging their wider teams more throughout the development of MOS (“I would have tried to hold a larger team MOS to engage the wider team - Even if it failed and we had to do something differently”; INT3; 11/01/17).

## **Emergent Theme 3 – Team Dynamics and Collaboration**

### ***Team Dynamics and Collaboration – Interview Findings***

The process to develop the MOS has impacted how the Pharmacy Leadership Team working together. This feedback was mostly made evident through the interviews conducted in the Post-phase. Many of the participants described the development of a more collaborative working environment between the Pharmacy Leadership Team, particularly when it came to their meetings (“There has been more of an effort to try and support each other as well as constructively challenging each other”; INT2; 10/01/17). The interviews suggested that change was influenced by improved

communication within the team (“The biggest impact is that it has improved communication”; INT3; 11/01/17) and also the fact that they were focusing collectively on shared issues and supporting one another, as opposed to issues that were only relevant to their specific team (“It’s [MOS] helped reduced silo-ing between the teams”; INT7; 17/01/17).

Another finding was related to professionalism within the Pharmacy Leadership Team. There were multiple comments made throughout the interviews that related the practices developed through MOS to improved professional behaviours (“It [MOS] forces people to share in an appropriate way, where they may have not in the past”; INT7; 17/01/17). The impact on this is a more supportive relationship between team members and improvement in the overall team dynamic (“There is more understanding and supporting behaviours between individuals and teams”; INT1; 13/12/16).

## **5.6 Summary of the Key Findings in the Study**

The study and associated analysis identified findings that were of particular interest to the stated aim.

The key findings related to Relevance were:

- The differences in level of connection team members (participants) felt to the pharmacy service and more-so which organisation group(s) they felt strongly connected with.
- That the Lean Management System (MOS) improved the connectivity and alignment of senior managers, but this did not necessarily translate into connections and alignment between departmental teams.
- How having clarity of purpose within their team, as developed through daily meetings and visual management, brought a greater sense of engagement and willingness to contribute to change.
- How this clarity of purpose did not necessarily extend beyond departmental groups to the wider service, and was more evident within senior level teams in Pharmacy.
- That although the Lean Management System, and in particularly the 180 day plans provided a vehicle to improve the visibility of the pharmacy strategy,

there was a challenge for team leaders to communicate across the teams and in some cases a reluctance to do so.

- A continuing disconnect in understanding the strategy, between the PLT and wider pharmacy team, even with new methods and tools introduced to improve this connection.

The key findings related to Reactivity were:

- The Lean Management System improved decision making within teams through greater team involvement in understanding daily issues and being involved in the development of solutions.
- That through the Lean Management System, there was a greater emphasis on action and this was owned by team members, where in the past actions were generally owned by team leaders. Team members had autonomy and accountability to take action.
- Participants found that the speed of decision making improved with the Lean Management System, in particular with the introduction of daily meetings.
- That there was improved visibility and management of priorities as a result of the visual management techniques in the Lean Management System.
- That cross-team collaboration (both within Pharmacy and outside of Pharmacy) was still a challenge even after introducing a Lean Management System.

Other key findings that emerged from the study included:

- Whilst the methods embraced with a Lean Management System had an impact on performance, active leadership and personal accountability was still required. The Lean Management System does not deliver the change – people do.
- A change in leadership behaviours observed within and across teams including: more ownership of change, distribution (delegation) of responsibilities and generally greater levels of empowerment amongst team members.



- Increased professionalism observed within the Pharmacy Leadership Team (PLT) as demonstrated through how the PLT engaged with one another in their management responsibilities.

## 5.7 Chapter Summary

This chapter has outlined the findings that have emerged from the Pre and Post-phases of this study. The findings indicate that the introduction of the Management Operating System into the pharmacy department has resulted in change to both the main themes of Relevance and Reactivity. A summary of the findings is shown in Figure 8.

In addition to specific findings related to Relevance and Reactivity, it emerged that there were differences in how teams were engaging with the implementation of a Management Operating System. The findings indicate that the Pharmacy Leadership Team benefited from a greater alignment around strategy and improved accountability and decision making. In the departmental teams, there were less examples of improvement of alignment and in some cases people felt the same level of disconnection to the wider Pharmacy team. The department teams did express that there was improvement in decision making, ownership of action and shared accountability as a result of the introduction of the Management Operating System.

Other key findings to emerge related to the connection between introducing the Management Operating System and development of leadership behaviours. It was found that the Management Operating System alone is not enough for sustainable change, it needs to be coupled with effective leadership.

The following chapter will discuss these findings further in relation to the literature in this field.

## **Chapter 6 – Discussion**

### **6.1 Chapter Introduction**

This chapter discusses the implications of findings in relation to the study's context and supporting literature. It outlines the researcher's reflections and the limitations of the study.

The aim of this study was to explore how the introduction of a Lean Management System impacts on the effectiveness of teams in a healthcare organisation. Of particular interest was understanding the impact that a Lean Management System has on managing and sustaining change through a focus on the main themes of Relevance and Reactivity as defined in Table 1 in Chapter 4.

The findings related to the following key areas:

1. Connectivity and alignment of individuals and teams.
2. Clarity of team purpose, strategy and priorities and the impact on engagement.
3. Distributed ownership of decision making, solution generation and accountability for action.
4. Lean Management Systems and leadership behaviours.

### **6.2 Comparison of the Key Findings with Relevant Literature**

#### **Connectivity and Alignment of Individuals and Teams**

The primary aim of a Lean Management System is to improve the alignment and connection between teams and in doing so increase the Relevance of individuals and the teams which they participate in. The findings from this study suggest that while there has been improvement of connectivity and alignment of team members within teams (for example as observed with the PLT), the development of this alignment and connectivity across the pharmacy teams was significantly less. Furthermore, the study shed light on the fact that many Pharmacy team members felt a stronger connection and alignment to the clinical teams (i.e. hospital wards, outpatient

departments) that they worked with outside of the pharmacy department. This finding was observed in both the Pre-phase and Post-phase of the study indicating the significance of this relationship.

The practice of identifying with one group (or team) more than another can be explained by the theory of social constructs in organisations related to Identity (Alvesson et al, 2002). What played out prior to and following the study period was a clear example of staff members (particularly those with a clinical focus) feeling more closely aligned with clinical functions and teams. The theory of Identity goes some way to explaining why some clinical-based staff members may have been less likely to engage in the purpose and strategy for Pharmacy. Staff members were inclined to identify with the purpose and strategy of the clinical teams they work with, which may be more tangibly related to delivering patient care. In the context of organisational change within the pharmacy department, this can have a significant impact as it can lead to certain individuals and groups forming views that ‘we are different and therefore this change doesn’t apply to us’.

Differences in levels of connectivity of teams within the pharmacy department also emerged. In particular, this existed between the Pharmacy Leadership Team (PLT) and the wider pharmacy teams. Whilst the introduction of a Lean Management System went some way to improve this, as seen in the use of the 180 day plans, the Post-phase findings indicated a gap still existed between management and the wider pharmacy teams.

One explanation for this gap, or misalignment, is PLT member’s lack of understanding about their roles. Before the introduction of the Lean Management System and the development of a common Pharmacy purpose, many of the PLT members saw their role as representing the team they were responsible for, as opposed to having shared responsibilities for the development of the broader pharmacy department. The role was perceived to be one of representation and ‘batting for their team’. The impact of this was that it influenced behavioural practices such as ‘power struggles’, ‘patch protection’ and even people disassociating themselves from other teams (Morgan et al., 2000).

The introduction of the Lean Management System and the collective development of a shared purpose for the pharmacy department had a significant impact on this challenge. The PLT members took ownership in the development of the direction and strategy for Pharmacy and they became one of the key connections to their teams. The outcome of this was two-fold:

- 1) A more connected and aligned Pharmacy Leadership Team, and
- 2) A common thread and strategy that the PLT members could articulate to their own teams and deploy into their team's strategy.

The findings from the Post-phase of the study went further to demonstrate that the first outcome was much more evident than the second. In fact, findings from the broader Pharmacy teams were that in many cases they were aware of a common strategy (180 day plan), however, it was clear that many participants did not understand it. This can be explained by the finding that some of the PLT members and Team Leaders found it difficult to deploy and share the Pharmacy strategy with their teams. The implications of the lack of understanding of strategy was that teams were disconnected with the common sense of purpose across pharmacy. While there was an improvement in the connection between teams and the PLT observed, there is still some way to go for the teams to have a strong sense of Relevance of what they do in relation to the overall Pharmacy purpose. In this situation, individuals are more likely to come to work to 'do their job' as opposed to have a broader contribution to a more meaningful purpose. Lencioni (2007) elaborates further on this sense of purpose by suggesting that having Relevance in what people do is a key ingredient of happiness and motivation in the workplace.

Another explanation for the difference in connectivity between the Pharmacy Lead Team and the wider pharmacy relates to the political situation that arises from the perceptions and beliefs underpinned by the social constructs of political economy (Harvey, 1982). The PLT or managers who hold a level of positional power are looking to engage their wider teams in change, however at the social level many team members in pharmacy may not want to engage in developing the change, even if they are given the opportunity. The lack of engagement may be a result of team members feeling that they are not recognised or rewarded for participating in the change. As a result, the connection may not be strong initially, until such point that

the wider team members feel that the value that they are contributing is recognised (Harvey, 1982). Furthermore, there were situations where people who do not have positional power, use other forms of power such as influence through their clinical networks or even stubbornness to change. Pedler et al. (2010) explain this well in that there are many forms of power that individuals can use to influence change. The implications of the dynamics related to power within the pharmacy department could contribute to the differing levels of engagement in change between the PLT members and those in operationally focused roles. Harvey's (1982) interpretation of Marx's theory of political economy describes this well, as the perceived difference in value between managers and workers which can lead to disengagement.

The findings also suggest that an effective deployment of MOS did not just follow the hierarchical structures of an organisation, it requires strong connections across teams to be in place. In situations where there was only the (vertical) hierarchical connections or 'silos', these were reliant on the managers and also the team leaders to be the 'glue' that held it together. Where this fell on one person, it was limited, as it depended on the character of that person their level of interest and influence as previously shown by Gabriel and Schwartz (1999). Where there were strong connections through other networks across teams, there was a great sense of alignment of what teams were focusing on and this increased the Relevance of what people were doing.

Fundamentally, people do want to make a difference in their workplace, however, traditional organisational structures tend to limit people to the scope of what they can practice, that is, they are 'boxed-in'. Everyone is different (Gabriel et al., 1999; Harvey, 1982); people have different drivers, different situations and different motivations, therefore if they can be channelled back to a common purpose that is relevant to them, people's engagement and contribution will likely be much greater.

The implications of this extend to how a Lean Management System may be deployed in the future. Mapping a management system to existing hierarchy may be easier to deploy (due to existing structures), however it may not be as effective in achieving a greater level of alignment that may happen through cross-team networks.

Developing a management system around the influencers across these cross-functional (or social) networks has significant benefits in avoiding the need for decision making to have to cascade up and down hierarchy, before action is taken. This provides an interesting case for future research.

### **Clarity of Team Purpose and Strategy and the Impact on Engagement**

The focus placed on defining and aligning purpose across the pharmacy department and within each of the teams provided interesting findings. In particular, those teams that spent time reflecting on what their team was there to do and how this aligned with the pharmacy department and wider organisation, were able to take a greater level of ownership in setting their team direction and day-to-day decision making. A subsequent outcome of clarifying purpose was the anecdotal evidence of a greater level of engagement of team members, for example, one participant described how “MOS provides a natural forum to engage others” (INT-5, 16.01.17).

Lencioni (2007) and Marquet (2012) both describe importance of alignment and how it relates to improved engagement through greater clarity of purpose. Increased engagement can be explained in part by Maquet’s (2012) argument that teams can have greater control of their decision making and destiny when they have ‘clarity’ and ‘competence’. When teams are not in control of their destiny and are told what to do and how to do it, the sense of autonomy disappears and engagement drops (Marquet, 2012).

The findings also described how teams, such as the clinical pharmacy team, came together more through the introduction of a Lean Management System. Through defining their purpose, the team had a common sense of who they were and why they were here and there was a greater level of Relevance in the work they did as a team. Sinek (2009) describes this as ‘the Power of Why’ and argues that starting with ‘why’ as opposed to ‘how’ or ‘what’ engages people with the true purpose and value that is created. The sense of purpose contributes toward improving job satisfaction of the members of the team and as a result a more engaged workforce.

Lencioni (2007) supports this finding by arguing that having a lack of alignment to purpose (Relevance), is one of the three signs of a miserable job.

The findings indicated that the level of Relevance was not consistent across all teams and there were some team members who still did not understand the direction of the wider pharmacy department. The reasons for this have, in part, been outlined earlier in this chapter in discussion around connection (or lack of) between teams. In particular, this difference was seen between the level of Relevance observed in the Pharmacy Leadership Team (PLT) and other Pharmacy teams. Whilst the PLT had been involved in developing and reviewing their strategy (A3's) and the 180 day plan; the strategy was not consistently cascaded down to staff at all levels nor communicated across the Pharmacy teams. As a result, many teams are not aware of the projects that support the overall strategy in Pharmacy.

The inconsistency in Relevance highlights the importance of systems and structures for deploying and communicating change that are required to increase connection with wider teams. The team leaders who were more effective in deploying strategy demonstrated more was required than just applying the systems and tools. In most cases came back to the behaviour set related to confidence, passion and enthusiasm to bring others along. Ladkin (2010) describes these traits as components of 'effective leadership'. The implication of this connection is that deploying and sustaining change through a Lean Management System is not enough by itself, it must be coupled with building and developing the leadership capabilities of those who work within the system.

### **Distributed Ownership of Decision Making, Solution Generation and Accountability for Action**

Several key findings were related to changes observed in how people and teams took action on a day-to-day basis. The observed impacts of this behaviour were:

- Decisions were made much faster.
- There was much greater involvement in team members in making decisions.
- The actions were more likely to address the root cause, as opposed to the resultant effect.

- There was a greater level of follow through on actions by teams.

The general observation that underpinned these findings related to the change seen in ownership of decision making. Before the introduction of the Lean Management System, decisions were largely made by senior managers, however with the Lean Management Systems in place, decision making was being distributed beyond senior management and team leaders to a much wider group of people in the pharmacy department.

A number of work practices and tools introduced enabled this change. The primary method was the introduction of short ‘daily’<sup>1</sup> meetings in the operational and clinical areas of Pharmacy. This practice brought teams together on a regular basis to focus on what the team saw as the primary concerns and focuses. This approach encouraged wider participation in managing the team and introduced daily accountability cycles (Mann, 2005). To extend the ownership of decision making further, the ‘Concern, Cause, Countermeasure’ (CCC) framework was applied consistently across all the teams. The resultant outcome of using this framework every day, was that staff became well practiced in raising and describing the issues and risks that were identified, then considering the cause(s) underpinning these. The team members then took ownership of the actions (countermeasures) that came from the discussion with an agreed date for feedback to the team. These findings are consistent with the literature in this field related to distributed decision making using a problem-solving approach around CCC (Mann, 2010; Marksberry, et al., 2010). The result of the combination of these two factors (daily meetings and Concern, Cause, Countermeasure), was greater involvement and ownership of decision making across the teams and also shared responsibility for taking action.

The findings indicated that the impact of shared responsibility and regular decision-making forums was more a proactive environment, largely driven by teams not having to wait for monthly team meetings to discuss concerns or have action taken.

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<sup>1</sup> The term daily meetings is used to describe the meeting format, however not every team met daily, some were meeting every second day, or on a weekly basis.



The other impact of shared responsibility was that the change made as a result of actions was more sustainable as it was owned by the team. An example of shared responsibility was seen in the supply and distribution team where the team suggested, owned and implemented a change related to the layout of their work area. Had this been imposed by senior management, the sustainability of this work space change may have been less effective. Kotter (2007), in his 'Eight Steps for Change' argues that building a 'volunteer army' and therefore creating shared accountability is critical in achieving sustained change.

An important consideration to developing shared responsibility and distributed decision-making, is whether the team have the right support and competencies to be able to own their change. As discussed earlier, Marquet (2012) argues that to release control, you need both clarity and competency. The area of clarity was discussed earlier in relation to aligned purpose, however having competency in your teams is also critical. Without the work methods, practices and tools to solve problems and take action, teams may be left to flounder if they are given control for problem solving. The lack of problem-solving competency was observed in situations throughout the study in situations where teams would superficially discuss problems and not address them, and as a result, issues reoccurred (refer to Researcher Journal in Appendix A).

The implication of the need to have problem-solving competency, is that alongside the right management system for effective decision-making forums, there needs to be supporting work-practices for change, improvement and critical thinking embedded within teams (Mann, 2010). Competencies may come through experience, however in many situations coaching and training of these skills is required.

A third factor that improved decision making and pro-activity, was visual management through the 'Issues and Risks' boards that the teams used. These boards (whilst very simple) outlined the key focuses of the team and used the 'Concern, Cause, Countermeasure' framework to visually describe the issue the team was focusing on, the action that was taken and who was responsible for the action. The act of displaying issues and risks visually had two key impacts:

1. The daily accountability process was visible for everyone to see, both those in the team, and also those from other teams. As a result, this improved communication across the department and encouraged sharing of ideas and alignment of work. Also, team members who couldn't make their daily meeting could see what they had missed and stay connected.
2. By visually displaying people's names next to actions with dates for the actions to be completed, there was a greater accountability by team members to take the actions they were responsible for. People knew that they would be having to provide an update on the action at a certain date, and if they didn't take the action, it would be visually indicated. This was a big motivation for many people to ensure that the action was taken.

The findings are consistent with literature related to these two areas of interest: Daily Accountability (Mann, 2010; Lancaster, 2017) and visual controls (Mann, 2010; Liker et al., 2006; Barnas et al., 2014). Another observation that was not explained in the literature relates to the personalisation of the daily accountability process, and visual controls. In order to be effective and sustainable, the teams had to own how these practices worked for them and not have that proscribed upon them. For example, in some situations where team leaders simply copied another team's visual controls the results were less effective, as their team didn't own them. The more successful situations were where the overall principles that the team were trying to achieve were outlined and then the team designed how it worked toward them. This extended to how the meetings ran, what measures team members selected and the roles they played in their respective teams. There was a perception that this shared ownership improved the effectiveness of the system.

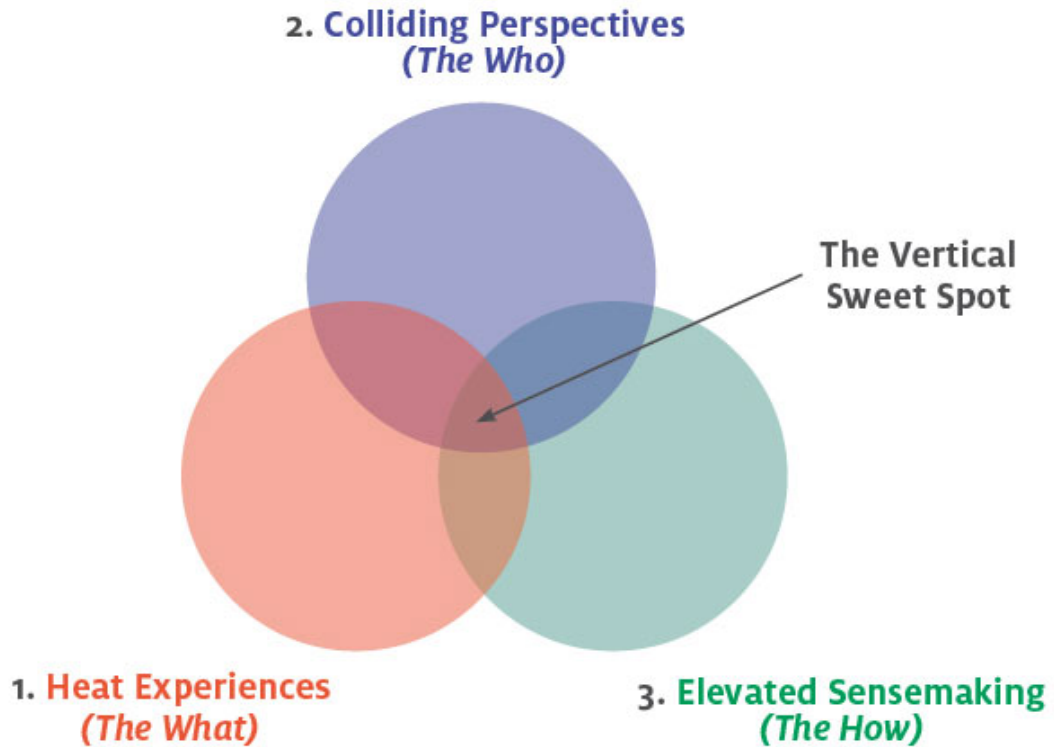
The implications of shared ownership are very important in that for a Lean Management System to be successful and value-adding, it must be developed and owned by the team that is using it. A 'paint-by-numbers' approach is not effective and observations of an organisation which adopted this approach indicated that the practices drift away over time (Winstone, 2012). To build an environment of long lasting change that sticks, a Lean Management System must be tailored to individual teams, but should be underpinned by common principles which are the tread that aligns it across the organisation.

## **Lean Management Systems and Leadership Behaviours**

The connection between a Lean Management System and leadership practices and resulting behaviours came through very strongly in the findings. Whilst a study of leadership practices was not the primary focus of the research, given the strong themes that were discussed by Lancaster (2017), Mann (2010), Liker et al. (2006) via the literature review on Lean Management Systems, it is not surprising that this relationship has emerged as one of importance.

Much of the literature describes the development of leadership practices as a foundation that underpins Lean Management Systems (Lancaster, 2017; Mann, 2010; Liker et al., 2006). However, one finding that has not been explored in detail in the literature, is the process of introducing a Lean Management System and how it provides real opportunities for leaders to reflect and develop their leadership practices. This finding was observed throughout the study and referred to in the Post-phase data collection. The researcher had multiple conversations with team leaders who were reflecting on how they interacted with their staff groups and how they could change this through embracing the elements of a Lean Management System (refer to Researcher's Journal in Appendix A). The observation that team leaders were reflecting on their actions demonstrated that rather than having to have experienced leaders in place before implementing a Lean Management System, an organisation can develop their leaders through involving them in the development of a change in working, such a Lean Management System.

Petrie (2015) argues that there are three conditions necessary to extend peoples' leadership practices (Figure 9). In Petrie's (2015) model for 'Vertical Leadership Development' he describes one of these conditions a 'Heat Experiences'. In the situation of the pharmacy team introducing a Lean Management System the leaders were often being provided 'Heat Experiences' where they were having to extend beyond their day-to-day comfort zone.

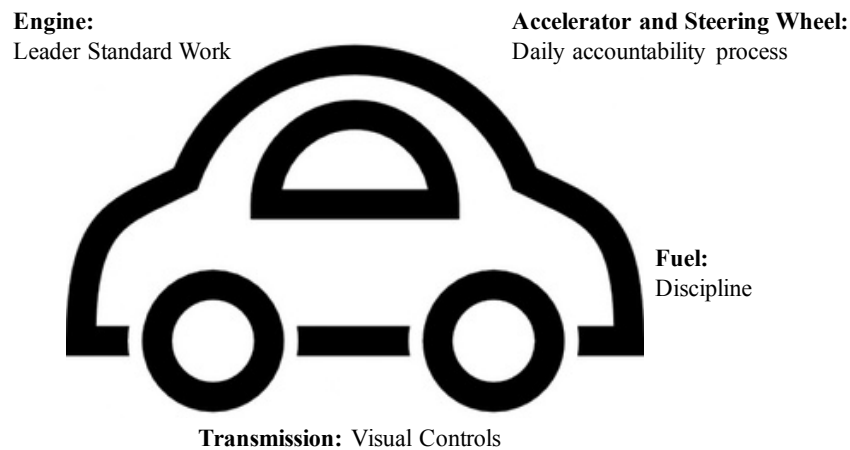


*Figure 9: Three primary conditions of Vertical Leadership Development (Petrie, 2015)*

One important challenge that emerged in this study, was that the strategy was not being cascaded to the wider teams in an effective manner. Comments such as “it’s all well and good to have a strategy on an A3 plan, but if this is not articulated to the wider team, it is not very impactful” (POST-3; 30/11/16) demonstrated the disconnect that still exists between teams and the PLT. Mann (2010) argues that Leader Standard Work is the ‘engine’ that drives a Lean Management System and therefore developing leadership practices of team leaders is a key ingredient in a Lean Management System (Figure 10). The findings indicate that in many cases in the pharmacy department, Leader Standard Work was not developed in team leaders. Lancaster (2017) further argues that Leader Standard Work needs to be a daily routine at all levels and can be demonstrated through ‘Gemba Walks’, where team leaders and managers walk around daily and engage with their teams.

The findings shed light on the fact that many of the managers, in particular the PLT members, found they did not have or did not prioritise the time to regularly communicate the strategy to their teams. The lack of priority placed on this could be explained by the fact that this was not a part of their daily standard work. Therefore,

developing standard work for leaders, in combination with developing leadership behaviours, is critical to embed a Lean Management System. Having both a focused effort on supporting the development of leadership behaviours along with the leader standard work to support leaders to ‘work on’ their management system on a daily basis is required to deliver relevant sustained change.



*Figure 10: Making lean management go (adapted from Mann, 2010)*

Another important finding related to leadership through Lean Management Systems was that there were members of the Pharmacy team who took the opportunity to ‘step-up’ and take on a greater responsibility. This was expressed through the Post-phase data collection and observed during the introduction of the Lean Management System in multiple areas. Examples of this were team members volunteering to lead their team meetings; take part in problem solving and coaching other staff members. Literature supports this finding in that a Lean Management System encourages senior managers to set direction and provide support; whereas the broader team determines how to manage and improve their daily activities and feed information up to senior managers (Lancaster, 2017; Liker et al., 2008; Ohno, 1978). The outcome of this is that the team are more engaged in owning change, and this was the case in the introduction of the Lean Management System in the pharmacy department under study.

Throughout the study period, the researcher observed that there were different levels of engagement and enthusiasm by team leaders in introducing the Lean Management System to their respective teams. One observation was that those team leaders who

were more proactive and passionate about introducing the change, had a different mindset and reason to those who were more reluctant, but did it anyway. The differing levels of proactivity can be explained to some degree by the type of leadership these people demonstrated. Ladkin (2010) argues that there are different styles of leadership and those with the passion and energy to do something different and bring their team with them could be described as having a Followership Leadership style. Ladkin (2010) further describes people with a Distributed Leadership style as those who are asked to take responsibility to lead a change. The team leaders who 'went along with' the introduction of the Lean Management System to their teams, because they were asked to, demonstrated a Distributed Leadership style. Whilst it was not investigated as a part of the study, there may be a difference in the traction gained with the introduction of the Lean Management System between leaders with a Followership style versus a Distributed style (Ladkin, 2010). This may be an area to explore further in future research.

### **6.3 Researcher Reflections**

The methodology for this research, Participatory Action Research (PAR) has provided a valuable opportunity for the researcher to observe and interact with participants in the study. An outcome of this is the opportunity to reflect not only on the findings of the research, but the research process itself, and the experience the researcher was exposed to through conducting this research.

The research experience, in addition to the practical experience the researcher has in the field of the change being studied, provided a strong basis for critical thinking and deep reflection. For this purpose of this section as the researcher and author, I will write in first person.

#### **Qualitative Methodology in a Quantitative Environment**

My first reflections are related to the use of PAR as a methodological approach, particularly related to concerns raised by study participants and other members of the organisations about the validity of this choice of methodology. The concerns raised can be explained by the current methodologies selected for the majority of research at Auckland DHB, which as a result of history and the industry, is very

accustomed to quantitative research methodologies such as Randomised Controlled Trials. In contrast, PAR is by nature a very explorative method of research. The implications of this miss-alignment in methodologies arose at the outset of the study, where it took a lot of convincing of people within the organisation, including the internal research department, that the methodology I proposed was even valid. I did this through sharing relevant information and papers, as well as writing a clear research proposal. In this process, I felt some level of pressure to include a quantitative aspect to the methodology I chose, and therefore my research proposal and initial plan for the study included quantitative measurement of specific outcome variables to determine if there was a statistical change. As the research progressed and the study evolved it was clear that this decision was like ‘fitting a square peg in a round hole’ and the quantitative focus of the study did not provide much value and in fact distracted from the primary focus of the study in understanding the emergent themes related to the change initiative.

In addition to this, the proposed quantitative measurement was immature because the data of interest was only in early stages of collection and was influenced by several factors. The implementation of a Lean Management System was only one of these factors. As a result, and through the advice of the research steering group, the quantitative aspect of the study was removed from the research.

Another learning from this research is that the process of conducting research itself is a very good way to engage health professionals in change. There was significant interest in the study from health professionals and as a result they were very keen to be involved in both the (Pre and Post) studies as well as the change involved in developing and implementing the MOS in the pharmacy department. This has implications for how people may engage health professionals in change and incorporating the change with well-structured research may be one such method.

Having conducted this research, there was significant learning for myself as the researcher, but also the health professionals that I worked with who experienced another method of research that was in most cases foreign to them. I hope that this research will be the start of more qualitative and exploratory research in New Zealand hospitals.

## **Researchers' Influence on Outcomes**

The study posed a risk as I was the researcher as well as the facilitator of change, so I could influence the outcomes, or interpret the outcomes with bias (Nickerson, 1998). Prior to the study I was working in the health sector, focused on improving organisational processes and systems and through this experience I had developed a number of theories based on the outcomes of my (and other people's) practice. These outcomes and experiences were often written and shared through informal means such as presentations, white papers and practice posters, however, they were not necessarily underpinned by a structured approach to research. Often the supporting evidence base was missing and the conclusions were based on the outcomes achieved and 'top-line' feedback of those involved in the change.

A challenge I faced when sharing this information was that I was often challenged by people with an academic inclination to provide the research base that supported my findings and outcomes. Due to the nature of the work that was conducted and the specific nature of change in this situation, there often was no direct evidence available. This lack of evidence was one of the main motivations that led me to conduct this study and therefore share the learnings that I found through the process in formalised way. My goal is for others to learn from my experience both in conducting this type of research, as well as the findings, discussion and conclusions drawn. With the afore-mentioned in mind, it was critical that I mitigated confirmation bias throughout this process and I have done that by drawing on literature (Nickerson, 1998); the establishment of a research steering group, supervisory and peer review, in addition to a well-constructed research design with robust data collection and analytic processes in place.

## **6.4 Limitations of the Study**

The nature of the research and environment that the study was conducted in provided some challenges to the study. These included:

- Access to appropriate data for analysis.
- Time-frames required to progress change.
- Availability of key stakeholders during the study process.



- Conflicting priorities for both the researcher and the research participants.
- Changes across the organisation that impacted the study environment.

Whilst many of these challenges were overcome through effective management of the research process and engagement with the various stakeholders, there were some that created limitations to the study.

### **Timeframe of Study to Gather Data**

The timeframe of the study phase was one year, from the beginning of the ‘Pre-phase’ data collection, to the completion of the ‘Post-phase’ data collection. In between these phases was the ‘During phase’ in which the Lean Management System was implemented within the pharmacy department which lasted approximately nine months.

In reflection, this period was too short to gather reliable quantitative data (related to medication reconciliations) to be used in the ‘Post-phase’ analysis. As referred to previously, the internal data-collection methods were immature at the commencement of the study but were more robust by study completion. As a result, the quantitative data was not used in the analysis and development of the findings. While it was agreed that quantitative data was not the primary focus for the research (as described in researcher reflections), it would have been interesting to see if there were any correlated changes observed, and this is the basis for future research.

Furthermore, the level of established change achieved within the nine-month process was variable across the areas of pharmacy. Similar cases where change management was implemented in Auckland DHB indicated that it can take up to three years until the change associated with implementing a Lean Management System is fully embedded within a service (Winstone, 2015). The impact of this lack of embedded change was variation in the uptake of the different components of the Lean Management System and therefore this produced some limitations to the depth of ‘Post-phase’ data collected. A recommendation would be to conduct further study groups, three years after the commencement of the Lean Management System to

determine if there are subsequent differences observed after a longer time to evaluate whether the change has been embedded as part of the pharmacy culture.

### **Changing Priorities within the Study Organisation**

Change is constant and with this the focus in organisations change over time (Kotter, 2007). During the period that this research was conducted, Auckland DHB continued to evolve and as a result the strategic priorities changed in the organisation. One area where this was evident was in relation to the continuing focus to develop its Management Operating System (MOS) and therefore the allocation of resource to achieve this. There was a perception by a number of influential senior leaders that ‘we have done MOS’ and what was meant by this was that the tangible artefacts of MOS had been established in most areas across the organisation (for example issues and risks boards up on walls). As a result of this view, and continual competition for resource to support change, a decision was made to reduce the resource to assist teams in developing their Management Operating System.

The impact this had was significant in many areas, as while there was some level of tangible elements of MOS in practice, the framework was not embedded within the services and teams and it was reliant on key people and the support of resources for change in-order to keep the MOS functioning. An assessment was carried out (independently to this study) which indicated that less than half of teams across Auckland DHB had embedded MOS to the level where it was self-sustaining (Winstone, 2016). This meant that half of the teams either had not commenced the development of their MOS, or their MOS was at risk of deteriorating.

The outcome of this assessment and the changing priorities were that support resourcing to the development of MOS was reduced, but not removed all together. The implications of this change to the research was that the time available internally for the lead-researcher to focus on MOS was less than previously planned. This provided limitations as to the level of coaching support for the teams in Pharmacy, as MOS was being developed in the During stage of the study. As a result, this likely impacted on the scale of the change achieved during the study period.

## 6.5 Chapter Summary

This chapter has drawn on the key findings and related these findings to literature where it exists. In particular, these include:

- The level of connection to an overall purpose contributed to the level of engagement and involvement of change.
- Mapping a management system to cross-team (or social) networks may provide a greater level of alignment and engagement, although this can be more challenging to achieve than mapping the management system to an existing hierarchical structure.
- Tools and methods alone for a Lean Management System are not enough for it to be effective and sustainable. It requires leadership behaviours that enable the tools and methods to be effective and integrated across teams.
- Furthermore, an effective Lean Management System requires people to have work-practices for change, improvement and critical thinking.
- A Lean Management System is less likely to be sustained if it is imposed on a team or copied directly from another team (i.e. 'paint by numbers'). It needs to be owned and developed by the team to meet their specific situation.
- Leaders need to be supported to build practice to focus on managing and maintaining their Lean Management System alongside their operational responsibility. Developing this practice as standard work is essential to ensure that leaders place the necessary focus where it is required on a daily basis.

A key part of this study has been reflexivity of both the change initiative per se and the findings as well as reflection over the research process itself. To aid others in replicating research such as this, reflections from the researcher have been shared in addition to challenges and limitations that occurred during this participatory action research. It is the researcher's aim that others can learn from these reflections and contribute towards the design of future research.

## Chapter 7 – Conclusions and Implications

### 7.1 Chapter Summary

The final chapter in this thesis serves several purposes. The first purpose is to summarise the thesis findings and its contributions to the literature, change management and health sectors. Second, this chapter reflects on lessons learned from conducting this research and provides recommendations to change practitioners and organisations who are looking to develop Lean Management Systems. Finally, the chapter outlines implications of findings for policy and practice and recommends future research in this field.

### 7.2 Conclusions

The primary objective of this research was to engage with a team who were implementing a Lean Management System, to explore and aim to answer the question:

**‘How does the introduction of a Lean Management System affect managing and sustaining change in a healthcare environment’?**

It has been demonstrated through this research that a Lean Management System has positive effects on managing and sustaining change in a healthcare environment, however a Lean Management System alone is not enough for long lasting, sustained change. In addition to the framework and principles provided by a Lean Management System, a team requires effective leadership that can lead through the Lean Management System on a daily basis, in addition to a team who have developed work practices (such as problem-solving skills) that enable them to act on change.

The findings through this study related to two main themes, Relevance and Reactivity. These concepts were adopted as they align with the two primary focuses of Lean Management systems: Deploying and aligning strategy and purpose; and the operational decision making and daily improvement.

## **Relevance**

For the purposes of this study, Relevance has been defined as the degree to which staff feel that what they do is relevant to the department or organisation. The findings indicated that there were improvements in the factors associated with Relevance such as: the connectivity and alignment of senior managers, and improvement of clarity of purpose within teams. There were limitations to the extent that a Lean Management System improved Relevance across teams, in particular outside of the Pharmacy Leadership Team. It emerged that whilst leaders across the Pharmacy service had the tools and methods for deploying strategy, they were not taking the action, or developing the standard work, to discuss this with their teams on a regular basis and develop the level of Relevance with team members.

The literature went some way to explaining this issue in that standard work for leaders is required as the ‘engine’ to drive a Lean Management System (Lancaster, 2017, Mann 2005). Furthermore, it was discussed that some of the leaders who were responsible for deploying and communicating strategy with their teams did not exhibit the leadership behaviours required to be effective at this. Some leaders lacked confidence in communicating strategy, or didn’t see it as a priority.

In summary, a Lean Management System goes some way to improving Relevance in the pharmacy department under study, however to have the greatest impact it needs to be coupled with standard work, that ensures strategy deployment is a routine activity, and the effective behavioural competencies of the leaders who are responsible for this activity.

## **Reactivity**

For the purposes of this study Reactivity has been defined as the degree to which staff and teams are prepared for emergent issues and risks that often invoke corrective action, post an event. The findings indicate that the introduction of the Lean Management System improved decision making within Pharmacy teams through greater team involvement and that there was a greater emphasis on action through ownership of decisions by team members. Also, the speed of decision making and management of priorities improved with the Lean Management System.

All of these factors in combination led to a reduction in Reactivity within the pharmacy department as teams were taking ownership of issues and taking action much sooner.

The improvement in decision making also enabled team members to feel more involved in their teams, however it was found that cross-team collaboration was sub-optimal and remains a challenge despite implementing a Lean Management System. The level of collaboration impacts how future Lean Management Systems might be deployed in this case. Mapping a management system to cross-function (or social) networks as opposed to an existing hierarchical structure may be more effective to build on these connections and this is an area recommended for future research.

### **Strong Links to Leadership**

Through this study there were a number of emergent findings that were outside of the main themes (Relevance and Reactivity). One theme that came through very strongly was the alignment to leadership development that emerged through the introduction of the Lean Management System. Primarily this was seen through those people responsible for leading change and managing people. These people found they were reflecting on their leadership style and in many cases changing how they lead and engaged their teams. Examples of these changes included a greater ownership of the change process, distribution of responsibilities and increased professionalism.

The implication of showing the importance of leadership is that not only can the introduction of a Lean Management System benefit in improving the management and sustainability of change in this hospital pharmacy, it can also offer an experience and framework in which leaders develop their behaviours and are challenged to think and act in different ways. The impact of this is likely to be two-fold: improvements in team performance and also improved leadership capabilities.

### **7.3 Personal learning through this Research**

This study has demonstrated that a Lean Management System in combination with enabling work-practices and effective leadership behaviours can have a positive effect on the management and sustainability of change in a New Zealand hospital pharmacy. In addition to this core objective, the study shed light on a number of key learnings for conducting research and for driving change initiatives in this field.

- The introduction of a Lean Management System must be tailored and owned by the people who will be using it every day. It will be less effective if it is imposed on people or copied directly from another team.
- Engaging people, in particular health professionals, in change can be challenging. Involving these people through conducting research is a very effective way to build interest and engage them in the change.
- Researchers should not select the research method based on the environment (and pre-dominant epistemology) that exists in an organisation. The method needs to be appropriate for the research goals and the nature of the subject of research (e.g. social change vs scientific method). Conducting research with a method that is unfamiliar to many people in the organisation is challenging, however it creates an opportunity for people to broaden their thinking and learn about different research methods.
- If a researcher or change agent is challenged by people who want demonstration of the evidence behind change which is not available, then conducting research alongside the change initiative is an effective way to achieve this.

### **7.4 Implications for Policy and Practice**

This research has shed light on a number of findings that may be used to shape how Lean Management Systems are introduced and integrated into healthcare organisations. Many of these findings have been discussed in detail earlier in this thesis, however below is a list of specific implications for policy and practice that organisations, who are considering the development and implementation of a Lean Management System, may want to consider.

- A Lean Management System can be successfully introduced in healthcare organisations, and in this case a hospital pharmacy department, and the Lean

Management System can contribute towards the improvement in the sustainability of change.

- It is important that focus is placed on connecting a Lean Management System across teams as well as mapping to the existing hierarchy of an organisation.
- Lean Management Systems must be owned by each team who is adopting them. A set of common principles and core features are required to align and guide the deployment, but a 'paint by numbers' approach is unlikely to be sustained.
- Significant effort is required to support leaders to develop 'Leader Standard Work' in order to consistently deploy and execute strategy through their teams.
- Lean Management Systems are not something that can be implemented in a matter of months and then left to work. They need maintenance and attention like any other aspect of an organisation, in order to continue to evolve and develop.
- Conducting research can be a very good catalyst to engage staff in change.
- Participatory action research is an effective method upon which to build a body of evidence related to the field of organisational change, whilst delivering results.

### **Implications and Opportunities for Future Research**

Throughout this research there have been many questions raised and opportunities to explore beyond the scope of the study. These opportunities for future research have been outlined throughout the thesis and are drawn together in a summary as follows:

- Organisational network analysis (ONA) has been an emerging field of research (McDowell, Horn & Witkowski, 2017). There is an opportunity to use ONA to consider the implications of mapping a management system to a cross-functional (or social) network as opposed to an existing hierarchical structure. Future research may look to explore the effectiveness of management systems designed around cross-functional networks and compare this to management systems aligned to hierarchical networks.
- The relationship between the development of Lean Management Systems and leadership evolved as a key finding and point of discussion. Further research into understanding any differences in the traction gained with the introduction



of the Lean Management System between leaders with different leadership styles will be valuable, such as a Followership style versus a Distributed style.

- Research could be conducted to explore the relationships between aligned development methodologies such as Improvement Science, Leadership development and Lean Management Systems. Considering how these disciplines and methodologies interact, and depend upon each other, would provide valuable insight for change practitioners and organisations.
- The field of Organisational Identity emerged through the findings in relation to which part of the organisation different members the pharmacy team identified with (Alvesson et al., 2002). Considering the impact of this in the context of an effective Lean Management System is an area for future research.

In addition to future research, there are also implications that emerged for extending or repeating this research in the future.

- The study could be expanded to other hospital departments in New Zealand to understand if there are differences observed in sub-cultures across the organisation and across geographic regions.
- The method of data collection could be reconsidered as the focus groups have limitations, particularly related to some people not contributing. Individual interviews with study participants across all of the pharmacy departments would be suggested in addition to the focus groups.
- Another consideration for extending this research would be through conducting a longitudinal study over four years to see the long-term impact of implementation of the Lean Management System on change. This could be undertaken by producing three-monthly reports based on pre-defined markers for measuring impact on change.

## **7.5 Final Words**

The aim of this research was to address a gap in the literature and the researcher's personal experience and to go some way to explaining the impact a Lean Management System has on the sustainability of change in a healthcare organisation. It is hoped that through addressing this gap and answering the research question, this research can be used to guide change practitioners and future researchers in how they conduct change initiatives in the future.

In this ever-changing world, we must continue to evolve and evaluate how organisations, teams and people engage and interact in change. This research contributes to the change management body of knowledge through sharing both experiential and observational learning.

## References

- Arena M, J., & Uhl-Bien, M. (2016). Complexity leadership theory: Shifting from human capital to social capital. *People and Strategy*, 39(2), 22-27.
- Auckland District Health Board. (2015). *Notes from Pharmacy Leadership Team strategy workshop*. [Supplied].
- Auckland District Health Board. (2017). *Our community*. Retrieved from <http://www.adhb.health.nz/about-us/our-community/>
- Auckland District Health Board. (2016). *Auckland DHB provider clinical services plan - 2016*. [Supplied].
- Auckland District Health Board. (2016). *Auckland DHB strategy to 2020*. Retrieved from <http://www.adhb.health.nz/assets/Documents/About-Us/Planning-documents/Master-ADHB-Strategy-25-August-2016.pdf>
- Barnas, K. (2011). ThedaCare's business performance system: Sustaining continuous daily improvement through hospital management in a lean environment. *The Joint Commission Journal on Quality and Patient Safety*, 37(9), 387-399.
- Barnas, K., & Adams, E. (2014). *Beyond heroes: A Lean Management System for healthcare*. Appleton, WI: ThedaCare Center for Healthcare Value.
- Bevins, F., & De Smet, A. (2013). Making time management the organization's priority, *McKinsey Quarterly*, January 2013
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage Publications.
- Bradley, H. (2015). Participatory action research in pharmacy practice. In Z. Babar, (Ed.), *Pharmacy Practice Research Methods*, (pp. 91-105). Gewerbestrasse, Switzerland: Springer International Publishing.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77 – 101.
- Bryman, A., & Bell, E. (2011). *Business research methods* (3<sup>rd</sup> ed.). New York, NY: Oxford University Press.
- Bryman, A., Collinson, D., Grint, K., Jackson, B., & Uhl-Bien M. (Eds.) (2011). *The Sage handbook of leadership*. London, England: Sage.
- Bunniss, S., & Kelly, D. R. (2010). Research paradigms in medical education research. *Medical Education*, 44, 358–366.
- Butterfield, E. (2015). Implementing medicines optimisation across all settings. *The Pharmaceutical Journal*, 294 (7860), online URI: 20068433. Retrieved from <http://www.pharmaceutical-journal.com/PJ,-2-May-2015,-Vol-294,-No-7860/932.issue>

- Cervone, H., F. (2011) Understanding agile project management methods using scrum, OCLC systems & services. *International Digital Library Perspectives*, 27 (1), 18-22.
- Chevalier, J. M., & Buckles, D. J. (2013) *Participatory action research: Theory and methods for engaged inquiry*. Oxon, England: Routledge.
- Collins, J. C. (2001). *Good to great: Why some companies make the leap ... and others don't*. New York, NY: Harper Business.
- Costello, I. (2015) *Auckland District Health Board Pharmacy strategy*. Auckland District Health Board, Auckland.
- Cowley, M., & Domb, E. (1997). *Beyond strategic vision: Effective corporate action with hoshin planning*. Routledge, London: Butterworth-Heinemann.
- Covey, S. R. (1991). *Principle centered leadership*. New York, NY: Free Press.
- Deming, W. E. (1986). *Out of the crisis*. Cambridge, Massachusetts: Massachusetts Institute of Technology, Center for Advanced Engineering Study.
- Deming, WE. (2000). *The new economics: For industry, government, education*. 2<sup>nd</sup> edition. Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study.
- Dennis, P. (2006). *Getting the right things done*. Cambridge, MA: Lean Enterprise Institute.
- Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Drucker, P. (1993). *The effective executive*. New York, NY: Harper Collins.
- Eriksson, P., & Kovalainen, A. (2016) *Qualitative methods in business research – 2<sup>nd</sup> edition*. London, England: Sage.
- Gibbs, A. (1997). Focus groups. *Social Research Update*. Issue 19, Winter 1997. Retrieved from <http://sru.soc.surrey.ac.uk/SRU19.html>
- Gordon, J. (2015). Five steps to an effective Gemba Walk. *Lean Manufacturing*. Blog post 27.10.2015. Retrieved from <https://theleadershipnetwork.com/article/lean-manufacturing/gemba-walk>
- Hossain, E., Babar, M. A., Paik, H. (2009). Using Scrum in global software development: A systematic literature review, *Proceeding ICGSE '09 Proceedings of the 2009 Fourth IEEE International Conference on Global Software Engineering*. 175-184.
- Huang, H. B. (2010). What is good action research? - Why the resurgent interest? *Action Research*, 8(1), 93–109.
- Institute of Healthcare Excellence (IHI). (2015). Medication reconciliation to prevent adverse drug events. Retrieved from <http://www.ihl.org/topics/adesmedicationreconciliation/Pages/default.aspx>
- Jasti, N. V. K., & Kodali, R. (2015) Lean production: literature review and trends, *International Journal of Production Research*, 53(3), 867-885.

- Jones, D. T., & Mitchell, A. (2006). *Lean thinking for the NHS*. London, England: NHS Confederation.
- Johnson, B. (1992). *Polarity Management: Identifying and managing unsolvable problems*. Amherst, MA: HRD Press.
- Kaplan, R. S., & Norton, D. P. (2001). *The strategy focused organization*. Boston, MA: Harvard Business School Publishing Corporation.
- Kaplan, R. S., & Norton, D. P. (2007), Best of HBR: Using the balanced scorecard as a strategic management system. *Harvard Business Review*; July-August 2007, 75-85.
- Kaplan, R., & Norton, D. (1992). The balanced scorecard: Measures that drive performance, *Harvard Business Review*, Issue: January 1992, HBR Press Massachusetts
- Kiechel, W. (2012) The management century. *Harvard Business Review*. Issue: November 2012: 62-75. HBR Press Massachusetts
- Kotter, J. (2007). Leading Change: Why transformation efforts fail; *Harvard Business Review*, January 2007 Issue, 85(1), 96-103.
- Lancaster, J. (2017). *The work of management*, Lean Enterprise Institute, Cambridge MA.
- Ladkin, D. (2010). *Rethinking leadership: A new look at old leadership questions*. Northampton, MA: Edward Elgar Publishing.
- Lencioni, P. (2007). The three signs of a miserable Job. *Harvard Business Review: Idea Cast*. Retrieved from <https://hbr.org/2007/08/harvard-business-ideacast-58-t>
- Liker, J. K., Hoseus, M. (2008) *Toyota culture: The heart and soul of the Toyota way*. New York, NY: The McGraw-Hill Companies.
- Liker, J. K., Meier, D. (2006) *The Toyota way field book: A practical guide for implementing Toyota's 4Ps*. New York, NY: The McGraw-Hill Companies.
- Lorimer, H. J., Lalli, S. L., & Spina, S. P. (2013). Redesign of the pharmacy practice model at a tertiary care teaching hospital. *Canadian Journal of Hospital Pharmacy*, 66(1), 28–34.
- Mackey, J., & Sisodia, R. (2013). *Conscious capitalism: Liberating the heroic spirit of business*. Boston, Mass.: Harvard Business Review Press.
- Mann, D. (2005) *Creating a lean culture: Tools to sustain lean conversations*. New York, NY: Productivity Press.
- Manzo, L. C., & Brightbill, N. (2007). Toward a participatory ethics. In S. Kindon, R. Pain, & M. Kesby, (Eds.). *Participatory action research approaches and methods: Connecting people, participation and place. Routledge Studies in Human Geography*, 22 (pp. 33-40). London, England: Routledge.
- Marksberry, P., Badurdeen, F., & Gregory, R., & Kreaflle, K. (2010). Management directed kaizen: Toyota's Jishuken process for management development. *Journal of Manufacturing Technology Management*, 21, 670-686.

- Marquet, D. L., (2012) *Turn the ship around! - A true story of building leaders by breaking the rules*. New York, NY: Penguin.
- Massey University. (2015). *Code of ethical conduct for research, teaching and evaluations involving human participants*. Retrieved from <http://www.massey.ac.nz/massey/research/research-ethics/human-ethics/code-ethical-conduct.cfm>
- McDowell, T., Horn, H., Witkowski, D. (2017). *Organizational network analysis. Gain insight, drive smart* [White paper]. UK: Deloitte. Retrieved from <https://www2.deloitte.com/us/en/pages/human-capital/articles/organizational-network-analysis.html>
- McGrath, K. M., Bennett, D. M., Ben-Tovim, D. I., Boyages, S. C., Lyons, N. J., & O'Connell, T. J. (2008). Implementing and sustaining transformational change in health care: lessons learnt about clinical process redesign, *Medical Journal of Australia*, 188 (6), S32-S35.
- McGrath, R. (2014). Management's three eras: A brief history, *Harvard Business Review*, July 30, 2014.
- Montgomery, D., C. (2009). *Introduction to statistical quality control, (6th ed.)*. Hoboken, NJ: Wiley & Sons inc.
- National Institute of Clinical Excellence (NICE). (2015). Medicines optimisation: The safe and effective use of medicines to enable the best possible outcomes. *NICE Guideline NG5*. Retrieved from: [nice.org.uk/guidance/ng5](http://nice.org.uk/guidance/ng5)
- Nickerson, R. S. (1998) Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, 2(2), 175-220.
- Northcutt, N., McCoy, D. (2004) *Interactive quality analysis: A systems method for qualitative research*. Thousand Oaks, CA: Sage.
- Ohno, T. (1978) *Toyota production system: Beyond large-scale production*. New York, NY: Productivity Press.
- Ortlipp, M. (2008). Keeping and using reflective journals in the qualitative research process. *The Qualitative Report*, 13(4), 695-705.
- Pedler, M., Burgoyne, J., Boydell, T. (2010). *A manager's guide to leadership: An action learning approach* (2nd edition). London, England: McGraw-Hill.
- Petrie, N. (2013) *Vertical leadership development: Part 1 – Developing leaders for a complex world* [White paper]. Greensboro, NC: Center for Creative Leadership.
- Petrie, N. (2015) *The how-to of vertical leadership development: Part 2 – 30 experts, 3 conditions, and 15 approaches* [White paper]. Greensboro, NC: Center for Creative Leadership.
- Rogers, E. M. (1995). *Diffusion of innovations*. New York, NY: Free Press.
- Ronte, H., Taylor, K. (2017). *The future awakens: Life sciences and healthcare predictions 2022* [White paper]. London, England: Deloitte Centre for Health Solutions.

- Royal Pharmaceutical Society. (2013). *Medicines optimisation: Helping patients to make the most of medicines: Good practice guidance for healthcare professionals in England*. London, England: Royal Pharmaceutical Society.
- Sanders-Edwards, C. (n.d.). *Back to the future: Developing leaders & managers the way we evolved to learn* [White paper]. Auckland, New Zealand: JumpShift.
- Schein, E. (2004). *Organisational culture and leadership – 3<sup>rd</sup> edition*. Wiley, San Francisco: Jossey-Bass.
- Senge, P. (1990). *The fifth discipline*. New York, NY: Double Day.
- Shook, J, Y. (2008). *Managing to learn: Using the A3 management process*. Cambridge, MA: Lean Enterprise Institute, Inc.
- Sinek, S. (2009). *How great leaders inspire action: Start with why*. Retrieved from: <https://startwithwhy.com/>
- Spear, S., & Bowen, H. K. (1999). Decoding the DNA of the Toyota production system. *Harvard Business Review*. September – October 1999, Boston, MA: Harvard Business School Publishing Corporation.
- Sugimori, Y., Kusunoki, K., Cho, F. & Uchikawa S. (1977). Toyota production system and Kanban system - Materialization of just-in-time and respect-for-human system. *International Journal of Production Research*, 15 (6), 553-564. Retrieved from <http://dx.doi.org/10.1080/00207547708943149>
- Susilawati, A., Tan, J., Bell, D., & Sawar, M. (2013). Develop a framework of performance measurement and improvement system for lean manufacturing activity. *International Journal of Lean Thinking* 4(1), 51-64.
- Tolich, M., & Davidson, C. (1999). *Starting fieldwork: An introduction to qualitative research in New Zealand*. Melbourne, Australia: Oxford University Press.
- Toussaint, J, S., & Berry, L, L., (2013). The promise of lean in health care. *Mayo Clinic Proc.*, 88(1), 74-82. Retrieved from <http://dx.doi.org/10.1016/j.mayocp.2012.07.025>
- Uhl-Bien, M., & Marion, R. (2011) Complexity leadership theory. In Bryman, A., Collinson, D., Grint, K., Jackson, B., & Uhl-Bien M. (Eds.), *The Sage handbook of leadership* (pp. 468-482). London, England: Sage.
- van Wijngaarden, J. D. H., Scholten, G. R. M., & van Wijk, K. P., (2012). Strategic analysis for health care organizations: the suitability of the SWOT-analysis. *International Journal of Health Planning and Management* 27, 34–49. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/hpm.1032/epdf>
- Winstone, T, M. (2012). *Service excellence: Better for patients better for staff*. APAC Forum Poster. Auckland, New Zealand.
- Winstone, T, M. (2014). *Management Operating System: The Auckland DHB way*. Auckland District Health Board. Retrieved from <http://www.adhb.health.nz/health-professionals/videos-and-presentations/>

- Winstone, T. M. (2015). Delivering system wide change through MOS - Our journey. *Asia Pacific Annual Conference for Quality Improvement in Healthcare*. Auckland District Health Board. Retrieved from [www.apacforum.com/](http://www.apacforum.com/)
- Winstone, T. M. (2016). Review of the implementation status of Auckland DHB Management Operating System. *Report to the Auckland DHB Senior Leadership Team*. November 2016. Auckland District Health Board.
- Wolff, B., Knodel, J., & Sittitrai, W. (1993). Focus groups and surveys as complementary research methods: A case example. In D.L. Morgan (Ed.), *Successful focus groups: Advancing the state of the art (pp. 118-136)*. Thousand Oaks, CA: Sage Publications.
- Womack, J. P., Jones, D. T. (1996). *Lean thinking: banish waste and create wealth in your corporation*. New York, NY: Simon & Schuster.
- Womack, J. P., Byrne, A., Fiume, O., Kaplan, G. S., & Toussaint, J. (2005). *Innovation series 2005: Going lean in health care*. Boston, MA: Institute for Healthcare Improvement.
- Zellmer, W, A. (2009). Seeking “better ways” in hospital pharmacy. *American Journal of Health Systems Pharmacy*, 66 (8), 713.



## Appendices

### Appendix A: Researcher Journal Notes

*NB: names and team descriptions have been removed from these journal notes.*

#### November 2015

<i>Date</i>	<i>Activity</i>	<i>Notes – Observations</i>
3/11/2015	Briefing of the pharmacy lead team – MOS Overview	<p>The team seemed very engaged in this workshop. I had previously built a relationship with the Pharmacy lead team (PLT) members through the work to develop and shape their strategy in late 2014-early 2015. This provided a very good base to start from with the team.</p> <p>The session involved a Go-see to a number of areas in the DHB that have MOS underway. This was very beneficial as it was other clinical leaders sharing their view and experience of MOS with the PLT.</p> <p>The PLT asked questions and considered how this would fit into their own service. Many of the PLT had seen examples of MOS in other services, but some hadn't (e.g. retail pharmacy) so the concept was quite new.</p> <p>In a debrief of the go-see the team started to consider how they might like to engage their wider service with MOS development. There was agreement that it needed to be led by PLT, but also have a 'bottom-up' approach from the team.</p> <p>Also as the PLT had already focused on developing their strategic priorities, and were keen to progress with these, the team decided to start with the Strategy Deployment focus first, as opposed to getting the Business as Usual meetings going (which other services had start with).</p> <p>In this initial engagement, there was a sense of enthusiasm from all of the PLT and it was encouraging to have a very engaged group who saw benefit in owning this.</p> <p>The team was also excited to be a part of the research of developing a MOS in their service and thought this was something that would resonate well with many of their teams.</p> <p>The PLT also considered some of the risks with MOS development and the main one was that the department was still going through the development of their new team structure and this process may be unsettling for some people. This could make people unsure as to how a MOS can support them when their structure is not grounded.</p> <p>At the end of the workshop I asked the PLT members to feedback what they were thinking about MOS development. I asked three questions: Why do we need to develop our MOS? How will we do this? What are our next steps?</p> <p>WHY – Clear the fog; Staff know their contribution; Staff feel valued; Not reliant on key people; becomes part of the language / the culture; Be leaders and not just managers; Clarity; Focus; Shared ownership; All on the same page.</p> <p>HOW: Together; Understand how we add value; and how to measure it; Articulate where we want to go to; Share it; Track progress; Build on the good things we do; Consistency; Not static – changing and evolving; Needs to be the way we work; Make it work for you.</p> <p>WHAT (next steps): Make connections with other teams via MOS; Find the 'pharmacy way'; Build it up over time; Continue to progress strategy work first; Informed by Directorate strategy; Complete review of targets; Ensure we engage the team quickly; Develop team level MOS for 1-2 teams.</p> <p>This was a great set of foundations to start working from and guide the process.</p>
5/11/2015	Met with ADHB Research Team	<p>This was a meeting with <i>person 1</i> and <i>person 2</i> from the ADHB research team.</p> <p><i>Person 1</i> was very interested in the research, however admitted was not sure how to support it from the ADHB research office as most of their focus is on Clinical Research.</p> <p><i>Person 1</i> was happy that we work through the Massey University Human Ethics Committee and I would be able to apply to have the research project lodged with the research office.</p>
6/11/2015	Contacted ADHB Maori Health Leader and Maori Research Committee	<p>Following this meeting I contacted <i>person 3</i> about whether there needed to be Maori representation on the project and they referred me back to <i>person 2</i> to advise on this.</p> <p>Given that it was not a project focus on patients, and community of different demographic groups, this was not a major focus, however it was agreed to understand the demographics of the pharmacy team of which two staff members identify themselves as Maori.</p>
6-10/11/2015	Ethics application process	<p>I completed the ethics application with significant input from my supervisors.</p> <p>It was a very good exercise to go through, not only to meet the requirements of the Ethics committee, but also to plan the study and get prepared. The questions forced me to consider things such as considering whether there were any vulnerable staff groups who</p>

		may be impacted by this research and change and it enabled me to put in place mechanisms to manage any risk. The formation of a steering group for the research was a very good outcome who will be able to provide guidance for the study and consider any potential ethical concerns.
10/11/2015	Ethics application submitted	
10/11/2015	Additional Document sent	

## December 2015

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
1/12/15	Ethics application re-submitted	Following the feedback from the Ethics Committee, the ethics application was updated and resubmitted. The key change related to the nature of the study going from a participatory action research (Pre/During/Post) to an evaluation of Pre vs Post. This was due to the fact that the change in the 'during' phase will involve all the of the Pharmacy staff regardless of whether they consent to the other parts of research. This is because this change is being led by the organisation, as opposed to being something that is being done for the study.
8/12/15	Workshop 1 with Pharmacy Lead Team (PLT) – Development of A3 plans	The first workshop went very well. Whilst we didn't get through all of the items on the agenda, we were able to cover the key points and focus on the priorities the PLT had. This involved developing outlines for the A3 plans for each of the priority areas. The team engaged well in this and naturally fell into groups that they felt comfortable with. It was interesting discussing the wider directorate and organisational priorities with the team, as many of them did not necessarily have an understanding of it. The dynamics in the group
16/12/15	Steering Group meeting	First Steering group meeting <ul style="list-style-type: none"> <li>- Setting the Terms of reference</li> <li>- Discussion around ethics</li> <li>- Discussed who would be good to have on steering group from the wider Pharmacy Team</li> </ul>
	Meeting with Pharmacy Senior Management Team	Brief introduction of the management operating system to the Senior Management Team (SMT). This was a wider group that had representation from all areas of pharmacy. The group was generally, quite interested, but it was the first discussion with some of the team on MOS.

## January 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
12/1/16	Meeting with Chief Pharmacist regarding Focus Groups	
20/1/16	Focus Group 1	There was good attendance – However there was no representation from pharmacy techs. Group was initially quiet, but then started to open up. The first question people went off track. They tended to describe their role (what they do) in relation to the wider organisation, as opposed to describing if they felt a sense of alignment. Managed to get back on track and the group came up with some useful insights. Using post-it notes was a very good way of getting people to have their say. This then allowed them to speak up. Grouping into themes was useful and then allowed people to add to it.
21/1/16	Focus Group 2	Again, with the second focus group there was good attendance. By reframing the first question, the group was able to focus more on describing how they felt aligned to what the department and organisation was achieving. The interactions were great and everyone contributed. There was a lot of positive discussion in the group and things that work well today. Similar to the first focus group, there was a view that some of the Clinical Facing teams felt more connected and aligned with the Clinical Services they worked with as opposed to the pharmacy department.

## February 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
3/2/16	Steering Group meeting	Person 4 Joined up for the steering group Good engagement and clear on their role.
4/2/16	Board member visit	A board member visited to get a better understanding of MOS. The board member was very interested and supportive of what they saw and this was reflected back to a senior

		leader who was present. This was positive as it would go a long way to increase their enthusiasm for MOS if it is seen as a good thing from the board.
9/2/16	Workshop 2 with Pharmacy PLT – Review of the A3's and Development of the 180 day plan	This workshop went really well, but didn't get through everything plan. The owners of the different strategies really showed they 'owned' their plans and this was evident in them 'telling the story' to the other PLT members. The 180 day plan was reviewed and a number of new items added. It was agreed to follow-up with each theme 'owner' to check the 180 day plan projects with them to get an updated list.  In general, the team is keen to get things progressing with great enthusiasm and little cynicism obvious.
11/2/16	Pharmacy Team representatives attended the Radiology MOS meeting	Some members of the Pharmacy team observed the radiology MOS meeting. The radiology team was pretty 'relaxed' in their meeting style
12/2/16	Follow-up discussion with Chief Pharmacist on radiology meeting	Feedback on the radiology 180 day plan meeting was that found it was not greatly focused on broader issues and could be connected across wider issue.
17/2/16	Board meeting – Discussion on MOS at board	At the last board meeting, the Chairman suggested that our MOS approach was a good method of connecting Health and Safety (amongst other focuses) from Board to Ward. Many other board members were not entirely aware of what this was so it was suggested to provide an update of MOS at the next Board meeting. It is great that the Chair is promoting this as a good innovation.
19/2/16	Met with Person 5 to review 180 day plan	Good one of one meeting with person 5 to align projects – They get it.
25/2/16	Met with Person 6 and Person 7 to review 180 day plan	Good meeting with Person 6 and Person 7 to align projects. They understood that even though they 'owned' the A3 plan for workforce development, they do not need to do everything and that these initiatives that should sit on here being led by other people (e.g. service redesign in some areas they don't work in).
25/2/16	Focus Group – Pharmacy Technicians	A 3 <sup>rd</sup> focus group was run with the pharmacy technicians as a part of their regular education session. The techs largely were based in the dispensary or supply team in pharmacy (level 6) and had not had as much exposure to the MOS activity in other services. Most of the group participated, however there were a couple of people who listened, but didn't write anything down to contribute or share their views verbally. Those that did contribute 'warmed-up' over time and became very engaged once they knew what the focus of the session was about.  The discussion was more centred around changes that happened in their own departments and the management of that, but also reflected some of the positive elements of how the pharmacy team operates.

## March 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
3/3/16	Presentation to Pharmacy team – 8am	Only one question around rollout. Seemed engaged though Chief Pharmacist was very positive about what this would mean for the service.
3/3/16	Presentation to Pharmacy team – 1pm	The update went well. Two questions asked by seemed to have good level of engagement from the team. This second group had a greater representation from the pharmacy techs and assistants, and they were possibly a bit more reserved.
10/3/16	Daily Meetings workshop	Several of the pharmacy team attended the daily meetings workshop. There was some great enthusiasm from the group and many of them felt they could understand the more tangible aspects of a management operating system after visiting some teams with that are actively using it.
11/3/16	Development of Pharmacy A3	The team is engaged in developing their A3 plans further. I met with Person 8 today and they have started translating their thinking into the A3. The common tendency that I am seeing at the moment is that people are listing milestones as measures as opposed to describing the outcome measures that will be impacted (e.g. safety, timeliness etc...)
17/3/16	Summarising of themes from focus groups	I worked through the common themes from the focus groups today now that the session with the techs had taken place. It was really interesting to see some common threads in particular those that related to individuals feeling more connected with the clinical services that they work with as opposed to the pharmacy team as a whole. This has come through from a number of groups and although there has been a lot of focus of the PLT in developing their purpose, strategy and direction – there is a general feeling that many of the pharmacy workforce do not feel connected to this.

		The current state of meetings may have something to do with this in that they are focused on small section of the department rather than connecting across the whole.
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## April 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
	Next PLT workshop is deferred to 2 <sup>nd</sup> May	The change in leadership responsibilities for Chief Pharmacist and the impact that this has had on the PLT to focus on working as a team and leading the change – delays in getting the PLT MOS up and running.
19/4	Meeting with <i>Person 9</i> and team	Had a quick catch up with <i>Person 9</i> and their team about what MOS could look like for their team. The interesting thing that came out of this discussion was that <i>Person 9</i> wanted to delay starting due to the fact that roles had yet to be formalised in their team. The impact on the restructure of the pharmacy team is impacting the behaviour and readiness of a few members of the team. Some people are waiting for this to settle before getting team together. Is this really necessary? Others are just getting on with it. Should a MOS be able to support in times of change in leadership or roles – or does it need a level of stability to begin with to get things started. Maybe once it is in place for some time, then change might become easier??
29/4	Catch up with <i>Person 8</i> on Improvement Project	When I caught up with <i>Person 8</i> today on their project, we also talked about MOS briefly with their team. They mentioned that due to their limited bandwidth that they had not been able to progress things yet. They have plans for a re-fit of their work area and they want to set up a MOS board, but this is still work in progress.
April - General	General Observations	It is interesting to see how some teams are more proactive in just getting started with MOS, but others are waiting to be told, or have reasons why to delay (e.g. waiting for their role to be formally announced)
April - General	Limited progress	<ol style="list-style-type: none"> <li>1) The work effort around the development of the clinical services plan for ADHB has taken a priority for me over the past few weeks. This has impacted two things:</li> <li>2) Progress on the deployment of MOS within Pharmacy. My capacity to engage and encourage the teams has been less than previously available and therefore those teams that are not 'pulling' for progress, have moved a bit slower than they would have otherwise</li> <li>3) Progress in commencing the writing of introduction and background of the thesis has also be delayed, however thinking is still progressing and new connections being made between the work that I am doing in a number of areas. An example of this is even with the clinical service planning and how this can be disconnected to the teams in the organisation without a clear strategy deployment process.</li> </ol>

## May 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
2 May	Workshop with PLT on Measures	This was the third workshop and the discussion was focussed around Measures for the pharmacy department – in particular PLT. It was a good first brain-dump, but are all the measures are connected to core strategy? Pushed the group to think beyond what we can measure today – to be more thinking about what we should measure to truly understand how we are doing.
17/6	Met with <i>Person 5</i> and <i>Person 10</i> re their MOS for their team	I had a good meeting with <i>Person 5</i> and <i>Person 10</i> . They are progressing well with their board layout and have started weekly meetings. We discussed whether we should separate the focus of med safety and med governance. We decided that for general details with a common purpose they are discussed at the medicines governance meeting. The medication safety group was more focused on specific safety concerns.
	Walk around the Pharmacy area – looking at MOS boards with <i>Person 11</i>	We did a walk around the pharmacy area to consider areas for setting up boards for PLT. The layout of pharmacy makes it difficult for connection / common wall space due to lots of cluttered space and lack of common areas for teams to congregate. Unfortunately, space constraints can also become a reason for delay for some teams – We do need a physical area for MOS boards – how important is this.

## June 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
10/6	Steering Group meeting	Great input for <i>Person 12</i> and <i>Person 4</i> . Expressed that things seem to be delayed somewhat due to capacity of leadership to engage with their teams around direction and change and also changes in Roles. <i>Person 4</i> mentioned that there needed to be some more communication / update to the wider pharmacy team, as the department wide meeting had not taken place. This was something that I needed to follow-up on and in discussion with <i>Person 19</i> it was unlikely for this to happen soon. I will put together a short update on MOS for the wider pharmacy team. The Chief Pharmacist was unable to attend due to other commitments unfortunately.

13/6	PLT MOS meeting	<p>The PLT initial MOS delayed again – due to people not being available – this is now going to be on the 15<sup>th</sup> May</p> <p>Getting time with PLT as a group a real challenge. There seems to be a lot of times that the group plans to meet but then don't because of people away – why???</p>
16/6	Pharmacy Service MOS meeting	<p>The meeting today was great. This was the first meeting where the team used the Issue and Risks board and there was some very good focus. The team were able to distinguish between what should be at the service level MOS versus team level MOS.</p> <p>There was also great ownership of issues within the group and people suggesting various countermeasures. The feedback from the group was this forum gave them a broader understanding of the pharmacy issues and what we are doing to resolve them. The interaction of the team was great and this helped with the dynamic of the meeting feeling that they could take ownership of issues. The first meeting went for about 40mins and the intent is to bring this down to less than 30mins.</p> <p>I started the process by helping the team set some initial principles of what they were focusing on and how to use the MOS methodology.</p>
23/6	Meeting with [ ] team regarding setting up their MOS	<p>I met with <i>Person 9</i> and their direct reports today. The purpose of the meeting was to discuss how they wanted to use daily meetings and components of MOS across their wider team and with the individual teams within the group. Initially there was some resistance from certain members of the team about how this may work for them, but as we discussed different scenarios it became clearer to them that it would benefit managing some of the concerns they have. <i>Person 13</i> was quick to highlight a lot of the challenges they faced in their team, and this was a good opportunity to point out how MOS can support dealing with these issues. We also made the distinction between managing specific issues related to orders, product &amp; patients vs looking at cross team issues.</p> <p>The outcome of the meeting was that we determined there would be value in having a MOS format to support the department and then daily or weekly meetings for individual teams (who already have a meeting in place). For two of the teams we decided that there was not value in daily meetings as both teams are very small (2 or 3 people) and it was felt that issues from these teams could initially be discussed at the departmental meeting.</p> <p>The team left with better clarity of what this could look like and actions to have me come to their next meeting to help with the format as well as visit the team meetings.</p>
27/6	Pharmacy Lead team 180 day plan meeting	<p>The meeting went really well today. It was the second time we have formally run this meeting and the team found it useful. We upped the tempo for the meeting this time (following a brief instruction of how to approach the meeting). This meant that we focused on the information that was important to update and not delve into detail of each projects. For this meeting, I lead the discussion and role modelled how to chair the meeting and update the plan. I asked for feedback at the end of the meeting and everyone seemed pretty happy with the approach and that it was not too fast.</p> <p>We discussed that the next steps were to communicate this plan to the wider pharmacy team, and get this up on their wider 'departmental board'.</p> <p>There was good participation from all the members of the PLT. Each of them had a role in the meeting as they all were the lead for at least one project and others asked questions. <i>Person 19</i> was away for the first ½ of the meeting, but this didn't matter as the team just got on with it and they were able to add to it later.</p> <p>Following the meeting it was time for the Pharmacy lead team meeting and rather than going to a closed off meeting room, <i>Person 19</i> had decided that the PLT stay in their clinical leads area and use the Issues and Risks team to guide the meeting. They see the value in using the framework to guide discussion. The issues and risks were reviewed and there was some good progression in countermeasures. The team are starting to identify more clearly what they bring to this forum, as opposed to raise and discuss in their own team.</p> <p>I suggested that I help chair the next 180 day plan meeting, but the team can then start to run them themselves.</p> <p>We had a discussion about whether to take minutes for the PLT meeting or not as there was a view that we could just capture issues and risks on the whiteboard. However, as the purpose of the PLT meeting involved broader discussion, some of which decisions are made in, it was still worth having this documented in minutes. The white board could be used to capture and display countermeasures.</p>
30/6	Attendance at team [ ] daily meeting	<p>Today I attended the [ ] team meeting led by <i>Person 4</i>. There was reasonable attendance including the team managers and plus 6 staff.</p> <p>The meeting ran very well. The essence of the daily meeting was there and there was a very good dynamic.</p> <p><i>Person 4</i> led the meeting, and there was input from others, however many others didn't contribute. <i>Person 4</i> had been to the daily meetings training and they were has applying a lot of the principles with the exception of making it visual. After the meeting, I had a quick debrief with <i>Person 4</i>, <i>Person 9</i> and <i>Person 13</i> and encourage them to look at a few things.</p> <ol style="list-style-type: none"> <li>1) To start using a visual board to capture their issues and risks</li> <li>2) To consider ways to have others participate – the board may actually help this</li> <li>3) To consider some common focus areas and measure that they may want to use.</li> </ol> <p>The biggest challenges that <i>Person 4</i> said they had was: 1) finding space to put up a board &amp; 2) moving away from paper based notes (which they could keep).</p> <p>The outcome was that they were going to give it a go, as they see the benefits and is prepared to try some things.</p>

## July 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
1/7/16	Sent out communications update to the team	Based on the feedback from <i>Person 4</i> I sent out a brief communication to the broader pharmacy team. It was aimed to be a simple one page update for the service. I got the Pharmacy team support to email the update out on my behalf, as there is no staff newsletter. There has also not a service wide meeting to update everyone.
2/7 – 3/7	Development of digital MOS solutions	Over the weekend I spent time considering further options on the digital MOS product. The more I have looked into this, the more it has become clearer about the importance of the social network that exists between groups and how this dynamic is a key feature of the MOS. The definition and alignment of the Purpose of each group becomes a critical part of achieving relevance for the individuals in the groups. The group then also has the autonomy to make the decisions that help them achieve their purpose. Regardless of whether there is the development of a digital product to support MOS, this has reinforced some of the fundamental principles behind a MOS. Some of these are: <ul style="list-style-type: none"> <li>- Connecting groups in an organisation using a social network linked by individuals</li> <li>- Orienting action and change and delivery to Purpose for the group</li> <li>- Creating focus for a group on what is important to them in achieving their purpose</li> <li>- Behaviours (action orientation, shared ownership, engagement, accountability) supporting this change</li> <li>- Integration of information from different sources / tools into a common place for decision making</li> <li>- Focus energy and discussion only on what is due to be reviewed as opposed to going over the same things again and again</li> <li>- Focus on presenting the Concern, cause, countermeasure – rather than just this issue</li> <li>- Keeping a high cadence for change</li> <li>- Giving team members a sense of ownership in their team(s)</li> </ul> This led me to considering some of the explanatory theories that may help support or explain these further.
5/7/16	Meeting with Pharmacy [ ] team	Attended the first [ ] team meeting today. The team had a good effort and they were able to jointly solve some concerns. The team also discussed what they could influence related to issues that were raised. This prompted some good challenge and discussion by the team. Some of the meeting did seem a bit forced from the team leader (e.g. trying to ask each team member for a positive). I was going to provide feedback on this, but decided to hold off in this instance as it was the first meeting and I want to give them a chance to see how things go. The team are still <u>warming up to a new approach.</u>
6/7/16	Meeting with <i>Person 14</i>	Today I met with <i>Person 14</i> . They have made a good start to daily meetings and they was commenting that their team have already found this valuable for them in terms of understanding some broader focuses and communication. At present, they discuss operational (start-up) matters on a daily basis and then will discuss broader issues and risks once a week. This seems to be working for them. They (like other services) find the lack of space for a visual board a challenge for them. They are considering having it removable so they can take it to a better area for the team to meet where they have visibility of the operations as well. We also discussed some of the measures that <i>Person 14</i> and their team are considering and possibly looking to put some into action in the coming weeks. They had some good ideas about using sampling and spot audits for some, and others would come from data collected retrospectively.
8/7/16	Attending [ ] meeting and debrief	The [ ] team meeting has been running for some time now. It is a weekly meeting (Friday's at 8am) and has been led by the manager, but more recently the team leaders. The team currently use the forum as an information update session. There was little interaction by the wider team, apart from discussion of events. The focus seemed to be very much on conveying information. There was a couple of issues that were raised by the team leader who then outlined the action that had to be taken by all. We had a debrief with the manager and team leaders afterwards to discuss the current meetings and opportunities for developing it further through MOS. The manager felt unsure about using a visual display as they felt it may be too impersonal for many of the staff. They said they were influenced somewhat by their daughter who has been studying psychology and whom they discussed this with. It was great that they were having this discussion at home with their family as it shows they has taken an interest in this broader that just something to do at work. We discussed how visual management could be used without making it too impersonal and discussed the focus of MOS being more on process and the concerns that come from issues and risks as opposed to trying to single out individuals. There was an agreement that having a visual board would be useful to get the team to start to contribute further. The team leader was keen to move to a daily meeting (huddle) for the team. When we discussed this, the intent they wanted was for more of a 'start-up' meeting to discuss the

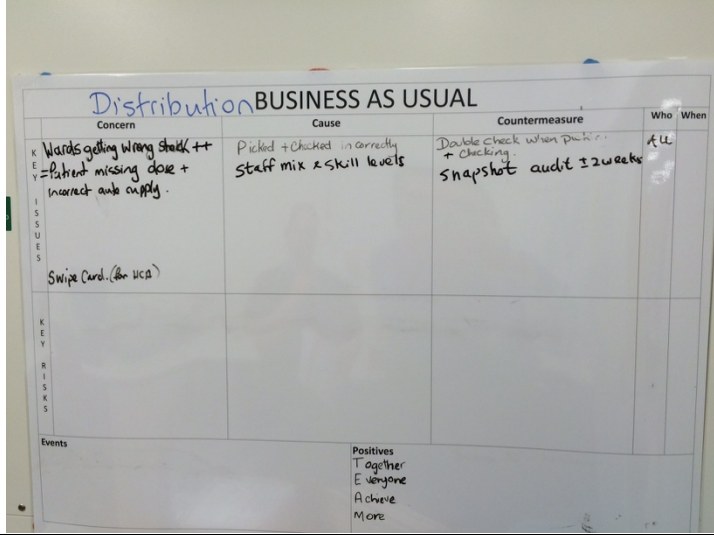
		<p>operational plan for the day. We agreed that this could happen but be very short and sharp, and then once a week have a slightly longer meeting that the issues and risks were discussed.</p> <p>The team also liked the idea of having specific focuses listed on the board as targets that the team could place emphasis on.</p> <p>It is possible that much of this willingness to change was from a dissatisfaction of the current process, but also that the team leader in particular had seen daily meetings working well in other areas and saw the value in them.</p>
11/7/16	Pharmacy MOS meeting	<p>I attended the Pharmacy service meeting. I ended up scribing the meeting to help keep some focus, but the team seem to be getting the grasp of it now. <i>Person 19</i> is still taking the lead on discussions, but others are starting to consider much more what they should raise and what forum they should do this in. It is clear that some people are also questioning whether other forums such as the 6-weekly SMT meeting (where issues had been discussed in retrospect) are still required. Either this forum is not required or it could be refocused on the new purpose of that group (if there is one).</p> <p>At the end of the meeting <i>Person 19</i> asked the team how they were going in developing their MOS for each area and what they thought. Most areas have commenced departmental (and in some cases daily) meetings. There was very positive feedback from the team as to how this was going for them and they were already starting to see more engagement in proactively discussion action and direction.</p> <p>Another great progression for the team is that they are now identifying what is discussed and focused on at different levels of their management structure. I.e. they determine if something is appropriate for discussion / action at PLT vs their own teams. This helps focus the conversation and action of the group also to not micro manage what is going on in each team. As teams are getting more confident with this discussion they are finding more and more operational matters can be resolved at team level and the PLT discussion is becoming focused on the bigger cross department issues and more strategic change. The group will still inform PLT of any key issues or changes in their teams but this does not become a focus of conversation or have action sitting with the PLT to resolve.</p> <p>Seeing this is really encouraging as it means that teams are becoming more autonomous as the confidence in management practices of the PLT evolves.</p>
12/7/16	Focus on MOS by SLT / prioritisation	<p>One thing that has been concerning me of late is that a number of the organisational steering group meetings for MOS have been cancelled (or poorly attended lately). I have pushed the exec sponsor for their thoughts on this, and feedback is that it is progressing well, so there are other priority areas that need attention. On one hand this is good, but on the other hand this means that there is a lack of awareness and involvement with key senior stakeholders. The recent strategic implementation plan for MOS has been developed and circulated for review, but there has been no feedback from steering group members.</p> <p>More recently in a senior leadership team prioritisation meeting, MOS was discussed and there was suggestion that this is no longer a programme as it is BaU. Whilst this may be the case for certain teams / directorates, it is not consistent across all areas. For example, many services do not have strategy deployment methods in place (only daily / weekly management) however they feel that they are already 'doing MOS'.</p> <p>I have flagged with <i>Person 20</i> that MOS needs further focus and governance to be truly embedded.</p>
19/7/16	Setting up Strategy Board	<p>I caught up with <i>person 11</i> today to discuss the layout of the visual board for the strategic side of the pharmacy Management Operating System. Finally, the board has been put up, but not without a lot of push back on the location. There was concern that it would create a lot of people to be 'milling around' in an operation area. This concern has been addressed by briefing the team leaders on how and when to take people to see the strategic summaries and 180 day plan. Things are now progressing!</p>
20/7/16	Meeting with <i>Person 15</i>	<p>They have now started using the Issues and Risks board in Dispensary (last Friday). The team leader was concerned that they were only putting up things that staff should already know – i.e. just communicating.</p> <p>We had a good discussion that maybe this was an opportunity for them to reposition how they engage with the team. They said that they has typically told (instructed) them [the team] to act on an issue, and we discussed how they could use the concern cause countermeasure approach to engage the team in understand the cause and come up with the countermeasures they could own.</p> <p>They are now going to try this and see how it goes and get feedback from the team.</p>
21/7/16	Supervisor meeting  - pace of various teams developing their MOS	<p>At today's supervisor meeting we discussed a number of points that are being observed through the study, so I thought I would capture some of them in the journal as a record.</p> <p>We discussed how it is interesting that some teams are lagging in developing their MOS practices and need to be pushed along (stepped through the process), whereas others (e.g. ACH Retail pharmacy) are just getting on and doing it themselves. All of the clinical leads understand the concept of MOS now and area engaging really well at the PLT level, but some are slower of the mark to get going with their own teams that others.</p> <p>In reflecting on this, there are some people who have a natural inclination to this and it fits their way of management whereas others are needing to reflect on their own style and see how the elements of MOS fits into what works for them. I have discussed with the teams that it is really important that they adopt MOS characteristics in their own way and it is natural to them (authentic) otherwise it will seem forced to their teams.</p>

		Other people have had a lot of other commitments and have not put the time to consider this further and develop their MOS with their team. It is interesting that these are the areas that actually may get the most out of a MOS approach with their teams to encourage more autonomy and ownership across the team, rather than just with the team leader.
21/7/16	Supervisor meeting - Clinical Pharmacy discussion	Clinical pharmacy is one area that is taking a while to get started. MOS is something that many of the clinical pharmacists are familiar as most attend the daily meetings on the wards. The feedback in pre-study focus groups was that many of the pharmacists identified more with the purpose of the clinical areas they work in rather than the pharmacy department, so this would possibly explain why getting the clinical pharmacy team MOS is not as much of a priority? Maybe it would help them work together and be aligned as a team if they have a clearer understanding of their common purpose.
21/7/16	Supervisor meeting - Social Networks	This could be further explained by the fact that the groups that they work with are more influenced through the social networks they are a part of in the organisation. This influences the identity of groups and their members and what they focus on. The diagram below demonstrates an example of the social network structure that potentially exists with the pharmacy teams and the role of clinical pharmacists (see diagram below).. The large circles are the different groups where the small circles are the individuals. Individuals are connected (or members of) various groups. The connections to these groups may be stronger for some groups than others and this is because the individuals have a stronger identification with the purpose of that group. Each of these groups (with their own purpose) can have their own MOS to support the management of this group towards the purpose. How well formed this MOS is will depend on 1) the value members place on their common purpose, 2) the clarity and alignment of this purpose, 3) the processes that support delivery against the purpose, 4) the behaviours and accountabilities of the individual group members.
28/7/16	Conversation with team leader for [ ] team	I had a brief conversation for the Team leader for [ ] team and they are keen to get their team engaged in starting their team MOS which is great. I didn't want to push them too much and was waiting for the Pull, so I am glad it has finally come.

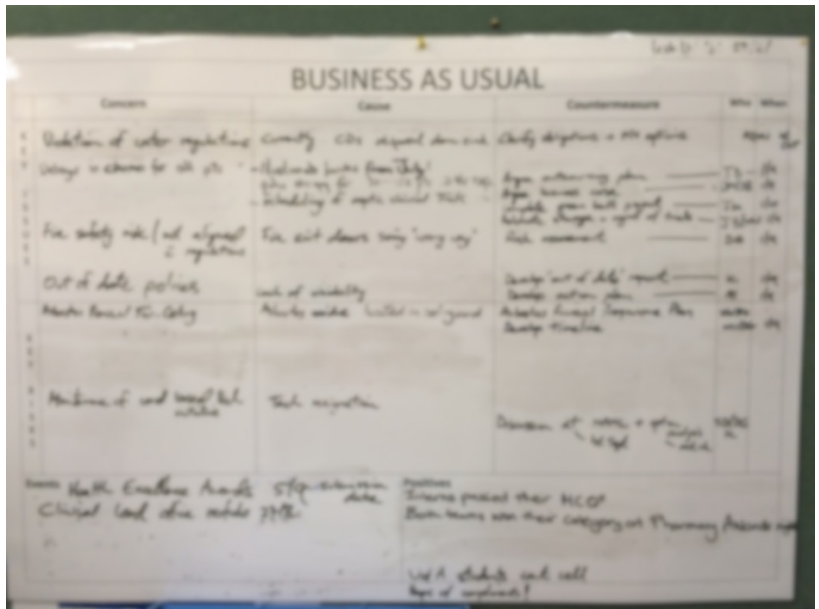
## August 2016

Date	Activity	Notes
1/8/16	Meeting with the [ ] team - attendance to their weekly meeting	The [ ] team met today to have their meeting and they also took the opportunity to discuss how they are using MOS in each of their. It was great to sit in on this and hear how things were going for them. It was clear that some of the team leaders felt they were trying to make it work in a prescribed way and were looking to be told what to do. I discussed with them that they can adopt their own style and use the MOS framework to support them in this. There was some discussion about the fact that some people in the teams were writing concerns directly up on the issues and risks board and how this made it difficult in the meetings. What came out of this was the team leaders felt that they were losing control over what was captured if anyone could do this and it ended up being cluttered (with things that maybe shouldn't be on there?). We discussed that this was potentially a good thing that teams were wanting to engage and we didn't want to stop this, however it should lead to a discussion in the meeting as to whether this is a shared issue or not and can it be dealt with directly. I encouraged the team leaders to consider how they would like to approach this and in their own ways. One of them thought of the idea to keep another small whiteboard where people can write up any new ideas or issues to be discussed and then as a team they can decide if these should go up on the issues and risks board and agree on the concern, cause, countermeasure and who will own this. It was great to see this thinking come out from the team.



		<p>Another effect that was observed is that some people were putting up a question on the issues and risks board rather than having a conversation with the team leader directly. I encouraged the team to talk about this at their next meeting and keep the communication channels open. On reflection, it is really interesting that there is a sense of losing control over how issues are managed and what is managed. You can see how this has come through the lines of management hierarchy in the past and is what people have been used to (i.e. telling their teams what to do as opposed to engaging them in the discussion around the cause and countermeasure). This change is hard for the team leaders to go through as it forces them to reflect on their own style and offer their team more control.</p> <p>It was interesting that the manager of team is also trying to engage the team in developing their own practices; however, this may be coming across as telling them that they need to do it, because it is to be done. I will look to have a follow-up conversation on this.</p>
1/8/16	Corridor conversation with [ ] manager	<p>I bumped into the [ ] manager today and they mentioned that they have started their team meetings using MOS but want a bit to reflect on it, as they are not sure they are getting it 'right'. There were some challenges in the team attending the meeting at 9am as it can be a busy time for the department / store so some of the meetings have not been happening. I offered to come and observe a meeting and discuss how it is going with the team, so we will set up a time for this.</p>
4/8/16	[ ] team meeting / discussion	<p>The [ ] team invited me to attend their daily meeting and discuss progress with the team. The team had kicked off meetings a few months back, however things had started to fizzle out over recent weeks.</p> <p>The team described some of the reasons for this being: The same things were being discussed each week, the team felt that they had to be available for the shop front and the meetings took too long.</p> <p>We discussed a number of these concerns and the team came up with some options to resolve them, and I was able to make some suggestions from other areas.</p> <p>The team were willing to look at how they could improve their meetings and make it more valuable for them all. They said they did see the value in understanding what is happening across the wider pharmacy department.</p> <p>An interesting point that was raised was about things that seemed out of their control and that their Team Leader couldn't answer fully. An example of this was potential automation in the retail pharmacy and the impact of this on staff. I suggested this was a good opportunity to ask the owner of this strategy (Automation A3) to come and meet with the team to share the strategy.</p>
5/8/16	Steering group meeting	<p>The steering group reviewed progress of the research and the change programme. The feedback from the Pharmacy team members of the SG was positive and reflected the changes taking place.</p> <p>The steering group saw progress of the Issues and Risks Board for some of the teams.</p> 
15/8/16	Meeting with [ ] team	<p>I met with the [ ] manager and the supervisor to discuss development of MOS for their team. They were very interested in how MOS could help them both in looking at resolving short term issues, but also some of the longer-term change required. I was planning to observe their currently weekly meeting, however due to short staffing they had to cancel the meeting to keep up with production demand.</p> <p>The team were very keen to improve the value they have out of their all of team meeting (that currently takes place on a weekly basis). At the same time the manager wants to start to develop their strategy so that it can be communicated to the team and involve the team. As a next step, I plan to get to their next team meeting.</p>
18/8/16	Discussion with [ ] Team Leader	<p>The [ ] team leader and I met today and discussed how the issues and risks board is going for them. They are meeting weekly, but using the board fortnightly. They said this works for their team and they have become really engaged and seem to be happy with how the process works for them. Some key observations were that they were keeping a track of about 5 different measures on a monthly basis and using this to prompt discussion. An opportunity</p>

		<p>for them was to look to use coloured dots to indicate the status of projects at a glance and therefore where / if action is required.</p> <p>I am looking to attend their next meeting in a fortnight.</p>
22/8/16	[ ] Team	<p>The [ ] team work across other teams within pharmacy and provide a view of the development in these areas. There are currently three members of the team, soon to be one more, with all of them having other clinical/operational responsibilities on a day-to-day basis. The team has a well-developed A3 strategy that articulates the direction of change required for education training and research, however they were not sure about how they use other elements of MOS to manage day-to-day issues and the projects that they are supporting.</p> <p>We discussed that the more widely approach of Key Performance Targets and Business as Usual board may not work as well for them and they may want to adopt more of a programme level MOS. This would summarise the key projects that they have in progress at present and they can raise any concerns, causes, countermeasures associated with them. The team liked this approach and format, so we started to use a laminate board to mock up what this might look like.</p> <p>One point that we discussed was how to show the 'next steps' on a project on their board. The team felt that this was something that was valuable for them. I discussed that there was a difference between using a project plan (outlining next steps) and their board, however they were still keen to include this. One way of achieving this was relating the next steps back to the concerns, and causes (i.e. they are a countermeasure) but this may be applicable only in some circumstances.</p> <p>In the principle of being flexible with the MOS so it can provide value for them, they could possibly add a section to their board to visually show what the next steps on a project are.</p>
22/8/16	PLT 180 day plan meeting	<p>The 180 day plan review went well today and the team fed back that they got value from it. A number of projects were closed and others provided brief updates. The discussion went longer than other times (60mins as opposed to 30mins) however the team were happy with spending the time on this.</p> <p>This process is really starting to bed in with the team.</p> <p>I really encouraged the PLT to start to communicate and share the 180 day plan and the A3 plans with their teams so people and understand the direction of the wider pharmacy.</p> <p>A comment was raised about how much the team takes on in terms of projects and whether there needs to be a level of prioritisation. We discussed this, and it was felt that most of the items on the plan were on track and were progressing. This indicated that either the number of projects was manageable or else people had to work outside their standard hours to keep on track. One individual felt that they possibly had too many projects on the go, so it was agreed that they could have a prioritisation discussion with the Chief Pharmacist.</p>
24/8/16	Meeting with [ ] team leads	<p>I met briefly with the [ ] team leaders and discussed how their MOS is going and how they can develop this further. The team had now had two (fortnightly) meetings where they had applied the MOS elements and principles. The feedback was that this worked well for them and felt it was helpful to involve their teams more. There was enthusiasm to develop this further and get more coaching on running their meetings.</p> <p>I suggested that some of the team leads and supervisors attend the next round of daily meetings training.</p>
25/8/16	Attending the [ ] all staff meeting	<p>I was a 'fly on the wall' in the [ ] meeting today. The meeting is held weekly (if/when they can). I observed the meeting of about 30 staff and then had some time with the [ ] manager and senior team leader afterwards. My main feedback was how they create more value out of the time with all 30 people there. By having specific focus areas this can help and also provide an opportunity for the staff to contribute further. There is also an opportunity to make the meeting visual particularly to share with others who cannot be there at that time.</p>
29/8/16	Setting up the strategy board in L6 Pharmacy	<p>Today <i>Person 11</i> and I updated the board in the Level 6 pharmacy with the latest 180 plan and A3 plans. This is part of the method to support strategy development across the wider pharmacy. See photo attached.</p>



Blurred for confidentiality

31/8/16	[ ] team meeting	<p>One challenge is space on walls, particularly as this is all working space as well.</p> <p>The [ ] team has been developing their MOS for a few months now and are making good progress. I was invited to the team meeting to observe and provide feedback. The interaction at the meeting was good with all team members taking part in the discussion. The team highlighted that this fortnightly meeting was their only time to discuss some issues as a team, so they went into some levels of detail in the meeting. In other areas where teams meet more regularly they can be more focused on the discussion and focus on countermeasures. My advice was that it needs to work for them and if they felt everyone was involved in the conversation then they could go into the detail, but it was only a couple of the team they may want to make a countermeasure to take this offline.</p>
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## September 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
8/9/2016	Reflecting and Refining daily meetings	The reflecting and refining daily meetings workshop is the second of the workshop series that is run to help team leaders develop how they run their meetings. There was a number of pharmacy staff who attended this session along with other staff groups. It gave the teams a chance to reflect on what they were doing in their work areas, but also observe what some other areas were doing to learn from. Each of the pharmacy team took away some actions to develop on further. It was interesting to observe that some of the team leaders were still struggling with the concept of engaging their team in 'owning' the issues and solutions (using CCC methodology).
15/9/2016	Pharmacy Scorecard Development	The scorecard has been one of the later focuses in the Pharmacy MOS development. In other areas, the teams have focused on this earlier, but it was decided to leave this to later in pharmacy until they knew what their key areas of focus were. Even with this it was difficult for the team to start to decide what it was that they needed to measure across the service.
29/9/16	Meeting with <i>Person 8</i>	<i>Person 8</i> and I caught up today and discussed how things were going. Whilst there had been a lot of focus at PLT level for MOS, the clinical pharmacy team had been a bit slower to get things going, but now were underway. One reflection with <i>Person 8</i> was about the current perception across the organisation around MOS, and how many people feel they have completed MOS as soon as they have a whiteboard up on the wall and some more structured meetings taking place. There was not the same level of focus towards development and deployment of strategy which is another key component. Part of this is that it may not be as tangible (it is more abstract thinking), but also it is harder and it takes dedicated time.

## October 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
4/10/16	Pharmacy Scorecard Review	Four of us (3 PLT members and I) met again to review the scorecard and refined a few measures. It is slow progress as there is a lot of the team to consider and get feedback on, and many measures there is a lack of data for.
7/10/16	[ ] Meeting	The [ ] team are making progress with their departmental level MOS, but are struggling somewhat with connecting their teams together. We discussed the team taking a step back and reflecting on their purpose and this may assist them in determining their focus areas for measures. I think the team members are relatively clear about what the purpose is for their own functions, as a team they are not entirely sure of a collective agreed purpose to focus their discussions on.
12/10/16	[ ] team MOS meeting	I went to observe the [ ] team MOS meetings today. They have been running this format for about a month now, so it is still bedding in. It was a pretty large group which made interaction around issues and risks challenging, so the discussion was largely led by the person facilitating and their manager. There was some more interaction through points raised at the end by other staff members who felt comfortable to bring them up. One highlight was that a member of the dispensary team came along and shared an update on a countermeasure that they had been working on, thus connecting the departments together.
13/10/16	Setting Up Establishing Daily Meetings workshop	Some for the clinical team leaders attended the setting up and establishing daily meetings workshop. Interestingly when introducing themselves a couple of them stated they were 'told to come', so it took a bit to get them on board. They all warmed up though and by the end of it were making a plan that they could implement to take actions to get their sub-level teams MOS up and running.
28/10/16	MOS Steering group meeting	This meeting was cancelled yet again. It is clear that MOS is not a priority for many senior leaders at present which makes the focus on this challenging. In reflecting on why it is not a focus, my thoughts are that there is a view that we have got MOS working in the most part, and that it is now Business as Usual (BaU) – however as measured on a maturity scale we have a long way to go still to achieve this as an organisation.

## November 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
7/11/16	Observing [ ] team meeting	<i>Person 16</i> invited me along to the [ ] team meeting to meet with the team and discuss how the development of their MOS was going. I found it very interesting to observe as the team did not really stop to come together and meet. Whenever a customer came into the pharmacy, two or three of the team would then start to attend to them (as opposed to one delegated person). Also, the team seemed to carry on with other tasks whilst the meeting progressed (including <i>Person 16</i> who was leading the meeting). This meant that the meeting was very disjointed and didn't flow. It also took a very long time, as it stopped and started about three times over the space of 30mins. <i>Person 16</i> mentioned that sometimes the meeting can go on for an hour in 'fits and starts'. I got a brief chance to ask for feedback on how their MOS is going and they felt it was OK, but not great as the team didn't engage so much in the conversation. The behaviour of doing other things at the same time would explain this to

		<p>some degree. Also, the team felt they didn't really discuss broader strategy, more-so just what was happening in their team.</p> <p>The stop-start format made it very difficult to keep any focus and the meeting really jumped around all over the place. In addition to this <i>Person 16's</i> style was very gentle and therefore they didn't keep things to task and ask people to focus.</p> <p>I suggested to <i>Person 16</i> that maybe they could try and have a very focused 10min meeting at 8.20am (before the doors open). They weren't sure about this as many of the staff start work at 8.30am, so it would be asking them to come in early.</p>
14/11/16	PLT MOS meeting	<p>I dropped in on the PLT MOS. They are going well, however find that they get into a lot of problem solving still and therefore the meetings tend to run on. It is however one of the only times they get to have this level of discussion, so they seem to value the time. Actions are getting knocked off and news ones are being created, so there is progress. They are starting to fall into the trap of keeping some countermeasures up for a long time now and rolling the date over when the due date passes. This is a common trait and can often lead to stagnation of progress.</p>
15/11/16	SLT meeting re MOS	<p>There has been a lot of politics at the organisational level recently regarding MOS. Where there is a constraint on discretionary project resource; some senior managers have challenged whether we need to continue to provide resourcing support for MOS – stating that it is 'Business as Usual' now. This perception is shared by a few senior managers who are keen to redeploy resource, but it is not shared across the executive team who think there is a lot still to put in place.</p> <p>A challenge with a deployment of a change like MOS is that when a group makes a step change (even if it is the first of many) they think 'this is better than before – we must be done'. Teams don't necessarily appreciate there is a broader journey and if you only get to step 1, there is a risk of slipping back to old methods and the gains are not sustained.</p> <p>To help demonstrate this, a summary of the development of MOS was provided along an assessment of where every team across the organisation is currently at.</p> <p>This provided some interesting insights in that only a very small group (5%) are independently improving their MOS on their own, 40% have made a change that is likely to stay the same if they are not supported and 40% are at risk of slipping back if support was pulled away.</p> <p>This was presented to the senior managers; however, the time in the meeting was cut to 5mins, which didn't allow for a proper review and discussion. As a result, it was not understood and there was a real push to only focus on the operational aspects of MOS (particularly at the front line) and not focus on deployment of strategy.</p>
18/11/16	Review with <i>Person 17</i>	<p>As a part of the reflect and refine follow up, I met with <i>Person 17</i> to go through their Issues and Risks board. They are making good progress and are currently updating their focus areas and measures.</p>
23/11/16	Focus Group 1	<p>Today was the first of the Post-phase focus groups. Whilst there were only three participants, there was some very good discussion. Having a smaller group allowed for more discussion rather than been dominated by a few people.</p> <p>Two of the group had not taken part in the Pre-phase focus groups. This made the discussion interesting in that they were feeding back from one point of reference. Initially when discussing the topic of relevance in particular, the group felt that there were disconnects between what the PLT were focusing on and what was happening at the front line.</p> <p>As we dug into this further, it was evident that the group were reflecting back over a long period of time (i.e. 2-3 years) and when specifically talking about more recent times they said there has been some improvement.</p> <p>However, a key point in the discussion was that whilst MOS can provide the framework, it still relies on the people, leadership, culture and effective communication to connect the team together. Often this was still missing in some areas, and as a result the MOS was not as effective as it had potential for. It was evident that whilst we had developed A3 plans, 180 day plans etc... these were not being discussed broadly with the teams. Some of the group were aware of these plans and had gone seeking them by themselves and others were not aware they existed.</p> <p>This raises the point about how much coaching is required around leadership and communication in parallel to MOS development, as if this is not happening as a priority, or senior team members are not sure how to do this, then people are not connected.</p> <p>A number of times there was suggestion that having A3s for some of the focus areas would be great, where they do actually exist but people have not seen them.</p> <p>There was also a lot of discussion about the front-line teams feeling that they were not involved in developing strategy, more-so they were told what it was and possibly asked for feedback. Therefore, they felt that the strategy had already been determined before they had input and therefore it was more of a token gesture to seek their input.</p> <p>In relation to the team based MOS, particularly the meetings and use of visual boards, the feedback was very positive on the impact that this has had. In particular it meant that the team were more up to speed as to what was going on and had the opportunity to contribute. They also like the visual aspect and the fact that there was ownership for action and a timeframe for doing things. The group felt that this helped in getting things done and people being accountable.</p> <p>It was a good first focus group and the size of it allowed exploring and discussing certain areas that may not have been possible with a larger group.</p>

25/11/12	Focus Group 2 – PLT	The second focus group was with four members of the PLT. It was interesting to hear the difference in the feedback and reflections from PLT vs that from the first focus group. In general, PLT felt that MOS had been very beneficial, however there was still a lot to develop. Both in how they worked together as a team, but also how they connected with their teams. The team in general felt MOS has helped them become clearer about strategy and what to focus on. They felt they were more effective at focusing on issues as a team and people putting their hands up to resolve them. The discussion went well and the group all contributed well.
30/11/12	Focus Group 3	In the third focus group, it was much like the first group. It was the largest of the three so far and this changed the dynamic to some degree. Some people (from Pharmacy Tech roles) were very quiet and didn't speak up too much prompted to. There were a couple of people who had little or no visibility of MOS which was interesting, or they found that it wasn't connecting with their teams.

## December 2016

<i>Date</i>	<i>Activity</i>	<i>Notes</i>
8/12/16	Focus Group 4 – Pharmacy Techs	The last of the focus groups was with the Pharmacy Technicians. There was a relatively small group of attendees and they were not that forth-coming. Some didn't actually speak up at all, even when given the opportunity to talk independently. Of what did come back it was clear that the group had concerns over broader change in pharmacy – not specifically related to MOS. The session was relatively short given the lack of discussion, but still valuable to get the perspective of the Pharmacy Technicians.
12/12/16	PLT MOS Meeting	The PLT meeting took place, with a smaller group this time. <i>Person 8</i> took the lead in asking if anyone else wanted to facilitate the session, and <i>Person 18</i> put their hand up; and <i>Person 8</i> offered to scribe. It was interesting to observe as <i>Person 18</i> initially kicked off the meeting, and <i>Person 8</i> was scribing, but over time <i>Person 8</i> ended up taking the lead for the meeting and before they knew it they were facilitating it. I don't think they were aware that this had happened, but I am sure that <i>Person 18</i> would have been very aware of this. It is something to consider in the roles within MOS to ensure that people don't 'default' to past positions and let others feel they can contribute.
13/12/16	Interview 1 – <i>Person 19</i>	The first of the leader interviews went well today. I kept it focused and allowed <i>Person 19</i> to share their thoughts about where we are at today, the impact it has made to the team, but also what they would do differently or suggest to others. Their comments mirrored some of the themes that had come from the focus groups which was good to see.

## Appendix B: 180 day plan

An example of a template for a 180 day plan used by Auckland DHB services to plan and prioritise projects through their Management Operating System is shown below.

Service Name - 180 Day Plan		AUCKLAND DISTRICT HEALTH BOARD Kaitiaki Take Kōwhiri						Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17
Date: mmmm yyyy		STATUS	LEAD												
<b>Priority 1</b>															
Abc...		✓	✓	✓	✓	✓	✓								
Abc...															
Abc...															
<b>Priority 2</b>															
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<b>Priority 3</b>															
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<b>Priority 5</b>															
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<b>Priority 6</b>															
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Patient Safety

Quality Care

Economic Sustainability

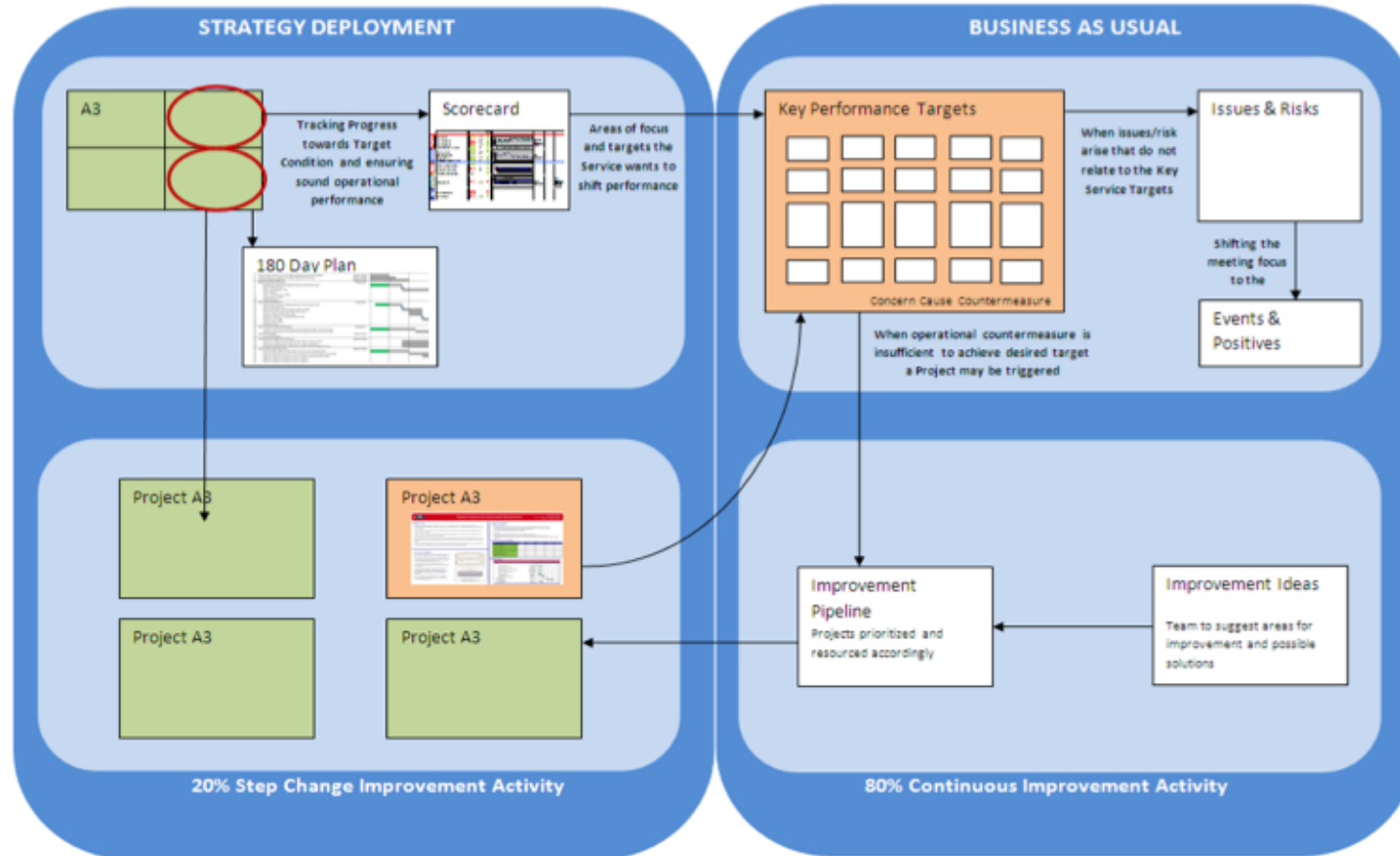
Engaged Workforce

Improved Health Status

Health & Safety

## Appendix C: Auckland DHB – Components of the Management Operating System

# Auckland DHB Management Operating System





## Appendix D: Principles behind the Management Operating System

Below are the core principles that underpin Auckland DHB's Management Operating System:

**Status at a Glance** – we want everyone in the service to see our performance easily.

**Action** – by identifying a 'Concern, Cause, Countermeasure' way of thinking.

**Discipline** – team are to prepare, participate and follow through on actions.

**Alignment** – to keep our focus aligned with other services across ADHB overall.

**Purpose** – we focus on important issues both within the service and ADHB.

**Ongoing review and improvement** – making this work for us!

Management Operating System Overview (Winstone, 2015)



## Appendix F: Plan for the Pre-phase focus groups



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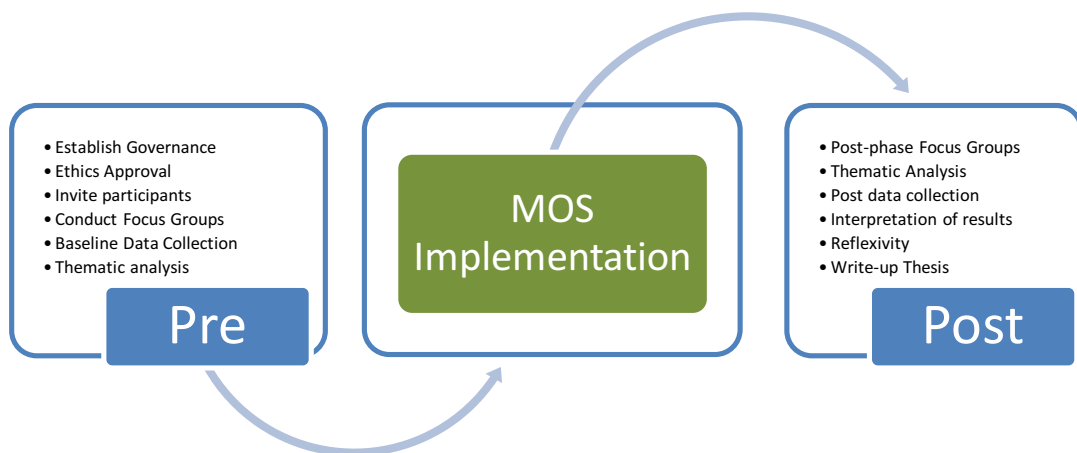
School of Management  
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Auckland 0745  
New Zealand

### Delivering and Sustaining Change with a Management Operating System – The Journey towards Medicines Optimisation

#### FOCUS GROUP OVERVIEW

Research is to be conducted within the pharmacy department at Auckland District Health Board to understand the impact of its management operating system (MOS). The research question that is being explored is: “How does the implementation of a management operating system impact the delivery and sustainability of change in a pharmacy department of New Zealand public healthcare organisation”?

The research will be implemented in two phases, as outlined below before and after the management operating system is implemented within Pharmacy.



A key part of the Pre-phase of the research involves working with Participants to understand the current state of how they work within their teams given the current management system and the impact this has on them personally and as a collective group.

To determine the current state a series of focus groups are to be conducted with staff that have volunteered to be a part of the study and provided consent.

The structure of the focus groups will be as outlined below:

- Four focus groups of 6-7 people in each group
- Every pharmacy staff member the opportunity to express interest to participate and then a sample of participants will be selected using stratified sampling. This will consider their team, tenure and possibly location. Sampling will take place until the 4 groups are filled. If there are not enough participants to fill each group, then the groups may be smaller.
- Once the groups are full, additional participants will be advised that the study groups are full, but they will be notified should a person be unable to attend.
- The focus groups will be facilitated using group discussion with some prompting questions.
- The questions will focus in particular around the main themes of Relevance of their work to the wider organisation, and Reactive behaviours that they experience based on the current management systems.
- These themes will be summarised into an affinity diagram outlining these challenges.
- The discussion will further explore the impact of these challenges to see what themes emerge.
- It is planned to use 'post it' notes as a method of people expressing their own written thoughts individually, before sharing this with the groups and opening up for discussion.
- All outputs from the session will be written up and communicated back to those who took part for any feedback.
- The focus group sessions may be recorded as well to ensure all comments are captured.
- It is intended the focus groups will take one hour each.
- It is not intended to provide any incentive to participants; however, they will be thanked for their contribution.
- Feedback from the focus group session will be written up and distributed to the participants.

During the focus groups the following questions will be posed:

### ***Relevance***

- How do you determine what you should focus on in your work?
- What challenges do you face in setting priority?
- How do you know if and what you are working on relates to the wider Pharmacy goals?
- How do you know if and what you are working on relates to the wider Organisational goals?

Draw out key themes from above questions:

Explore impact of these using the following questions:

- How do these themes (*replace with actual*) make you feel about your work and what you do?

### ***Reactivity***

- How prepared do you feel you are for changes that affect you and your team(s)?
- What are some challenges you face in managing change?
- What words would you use to describe how change is planned or managed within your team and the pharmacy department?

Draw out key themes from above questions:

Explore impact of these using the following questions:

- How do these themes make you feel about your work and what you do?

The outcomes of the four focus groups will be consolidated into common overall themes.

*A full overview of the proposed study can be obtained in the Research Proposal.*

### **Focus Group Schedule**

<b>Activity</b>	<b>Date</b>
Invites to participate sent out	06/1/16
Participants selected – <i>Assigned to a Focus Group</i>	13/1/16
Focus Group 1 ( <i>1 hour</i> )	18/1/16 – 11am
Focus Group 2 ( <i>1 hour</i> )	20/1/16 – 2pm
Focus Group 3 ( <i>1 hour</i> )	21/1/16 – 12pm
Focus Group 4 ( <i>1 hour</i> )	22/1/16 – 10am
Feedback outputs to Participants	5/2/16

<<Contact Details removed for privacy>>

## Appendix G: Study Information Sheet

This information sheet was used for the Focus Groups and Interviews conducted during the study.



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### Delivering and Sustaining Change with a Management Operating System – The Journey towards Medicines Optimisation

#### INFORMATION SHEET

##### **Researcher Introduction**

My name is Tim Winstone and I am conducting research leading to a thesis as part of a Masters in Business Studies. The study is exploring the sustainability of change through the establishment of a Management Operating System (MOS). I am employed by Auckland District Health Board (Auckland DHB) and am based at the Auckland City Hospital in Grafton. My role at Auckland DHB is Programme Director – Performance Improvement and I am responsible for the Child Health and Clinical Support Services Portfolios. I am also the Programme Manager for Auckland DHB's Management Operating System programme.

##### **Project Description and Invitation**

Auckland DHB has been developing its MOS over the past three years to improve the alignment and delivery of strategy and improve decision making related to operational performance. Significant progress has been made working with teams, services and directorates to establish their MOS and there have been clear anecdotal benefits as a result of this.

The purpose of this research is to formally evaluate the impact of developing and implementing a MOS within a service at Auckland DHB (the change). In particular we would like to understand the impact the MOS has on the delivery and sustainability of change and how it influences the effectiveness of those working within the service, and in what ways. The study will explore the way that a service is managed prior to the change (Pre-phase), and then explore the environment after the change (Post-phase) and evaluate the impact of the change.

The Auckland DHB pharmacy department has been selected as the study subject group as it has not yet implemented the elements of the MOS. The department is planning to develop their MOS as a part of their strategy and have offered to be the case site for this research. As the researcher, I have had previous engagement with the pharmacy team. It is not a requirement that all staff members within the pharmacy department participate in the study, however those that are interested are invited to share their current experiences and reflect on the process post the change.

##### **Participant Identification and Recruitment**

To ensure that the information obtained will contribute to the aims of the study, I would like to speak to staff members who meet the following criteria:

- Are a member of pharmacy department at Auckland DHB.
- Have been in the department for more than six months (to ensure they have an understanding of the current state of the department).
- Are happy to participate in focus group discussions related to this research.

I would appreciate the opportunity to engage with approximately 30 staff members from the pharmacy department. I would like to interview staff from a range positions, and with experience ranging from trainees through to those with over 10 years' experience within the department. Please be aware that,

if I am fortunate enough to receive too many responses, I may be required to select volunteers based on the range of perspectives sought for the study.

Those participants taking part in the Pre-phase focus groups will not necessarily take part in the Post-phase focus groups. It may be a different group of staff participating in each phase.

### **Project Procedures**

You are being invited to participate in this study because you are a staff member in the pharmacy department. If you agree to take part in this study you will be asked to discuss your experience of working in the pharmacy department in relation to how issues are raised and resolved, performance is managed and maintained and change and direction are communicated and actioned. Discussions will be conducted in the form of focus groups made up of no less than four staff members at a time. The focus groups will be led with open ended questions which will allow you and other staff members to share your experiences. From this, themes will start to emerge and further discussion may take place around these themes. This is in-line with the exploratory nature of this research. The focus group sessions will take approximately one hour and will be recorded with written notes and a digital recorder. If desired you will be able to review any content that comes from the sessions. The focus groups will be held at Auckland City Hospital during work hours and the sessions will take approximately one hour. Separate focus group will be held for both the Pre and Post-phases.

### **Data Management**

The information obtained from the focus group interviews will be used to inform the results of the master's degree project. Due to the nature of the research there may be specific information that could potentially identify individuals by their role however anything that identifies individuals will be removed from any research publications. The data obtained will be transcribed by me, as the primary researcher. Please be aware that, while every care will be taken to protect your identity and for your details to be confidential, anonymity cannot be guaranteed.

At the focus group session, you will be presented with an opportunity to provide your details should you wish a summary of the project findings to be sent to you upon completion of the research.

### **Participant's Rights**

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study prior to – or at any time during – the focus group;
- ask for the digital recorder to be turned off at any time during the focus group;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded.

### **Project Contacts**

If you would like to accept this invitation to participate, please contact me on the details provided below. If you have any questions regarding this project, please contact me or the project supervisors.

<<Contact Details Removed for Privacy>>>

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 4000015204. If you have any concerns about the conduct of this research that you wish to raise with someone other than the researchers, please contact <<NAME>> (Research Ethics)

<<Contact Details removed for privacy>>

## Appendix H: Pre-phase focus group Participant Consent Form



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### PARTICIPANT CONSENT FORM

**Project title:** Delivering and Sustaining Change with a Management Operating System  
– The Journey towards Medicines Optimisation

**Researcher Names:** Tim Winstone (Student researcher), Dr Margot Edwards  
(Supervisor), Dr Shane Scahill (Supervisor)

- I have read the Participant Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.
- I understand the nature of the research and why I have been asked to participate in the study.
- I agree to the interview being sound recorded.
- I understand the recording of the interview can be stopped at any time on request by me.
- I understand that my participation is completely voluntary.
- I understand that I may request a summary of the results from this project to be emailed to me.

**Signature:** ..... **Date:** .....

**Full Name - printed** .....

**Email:** .....

<<Contact Details removed for privacy>>



## Appendix I: Focus Group Questions

The following questions were posed to the participants of focus groups:

Relevance:

- How well do you understand the overall department and organisational priorities?
- How do you feel these relate to what you do?

Additional prompting questions included:

- How do you determine what to focus on in your work?
- How do you know if what you are working on relates to wider departmental goals?
- How do you know if what you are working on relates to wider organisational goals?
- What challenges do you face when it comes to setting priority / making decisions?

Reactivity:

- How prepared do you feel you are for requests or changes that affect you and your team(s)?

Additional prompting questions included:

- What words would you use to describe how change is planned or managed within your team and the pharmacy department?
- What are some challenges you face in managing change?

## Appendix J: Plan for the Post-phase focus groups



MASSEY UNIVERSITY

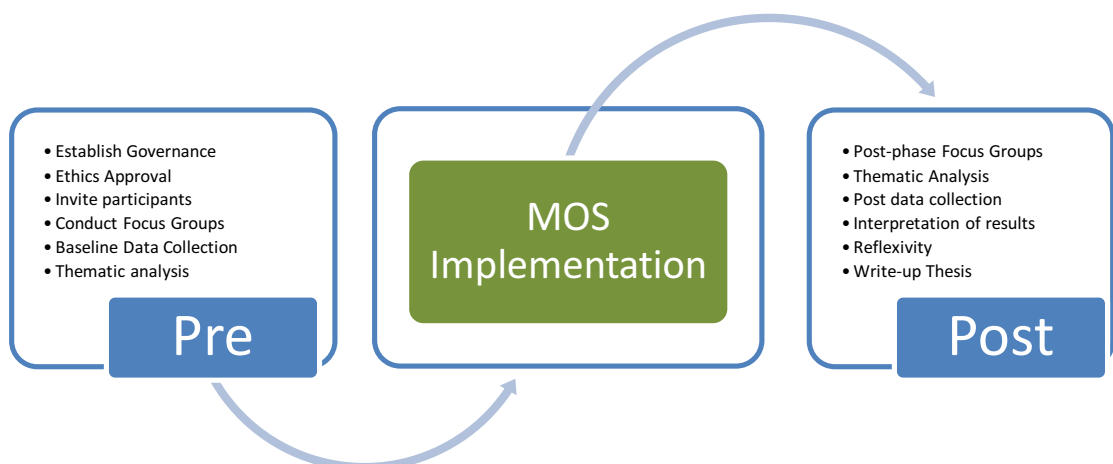
School of Management  
Private Bag 102904  
Auckland 0745  
New Zealand

### Delivering and Sustaining Change with a Management Operating System – The Journey towards Medicines Optimisation

#### FOCUS GROUP OVERVIEW

Research is being conducted within the pharmacy department at Auckland District Health Board to understand the impact of its management operating system (MOS). The research question that is being explored is: “How does the implementation of a management operating system impact the delivery and sustainability of change in a pharmacy department of New Zealand public healthcare organisation”?

The research will be implemented in two phases, as outlined below before and after the management operating system is implemented within Pharmacy.



Pre-phase focus groups were conducted in January and February 2016 and themes were developed reflecting the current management system and the impact on them personally and as a collective group. (*Refer to the plan for the Pre-phase Focus groups*).

Following the focus groups there has been a period of eight months where the department has put focus on developing their management operating system. Now

that this is established across the service and within many of the teams, a series of Post-phase focus groups are to be conducted with staff that have volunteered to be a part of the study and provided consent.

The structure of the Post-phase focus groups will be as outlined below:

- Four focus groups of 6-7 people in each group
- Every pharmacy staff member the opportunity to express interest to participate and then a sample of participants will be selected using stratified sampling. This will consider their team, tenure and possibly location. Sampling will take place until the 4 groups are filled. If there are not enough participants to fill each group, then the groups may be smaller.
- Once the groups are full, additional participants will be advised that the study groups are full, but they will be notified should a person be unable to attend.
- The focus groups will be facilitated using group discussion with some prompting questions.
- The questions will focus in particular around the main themes of Relevance of their work to the wider organisation, and Reactive behaviours that they experience based on the current management systems.
- These themes will be summarised into an affinity diagram outlining these challenges.
- The discussion will further explore the impact of these challenges to see what themes emerge.
- It is planned to use 'post it notes' as a method of people expressing their own written thoughts individually, before sharing this with the groups and opening up for discussion.
- All outputs from the session will be written up and communicated back to those who took part for any feedback.
- The focus group sessions may be recorded as well to ensure all comments are captured.
- It is intended the focus groups will take one hour each.
- It is not intended to provide any incentive to participants; however, they will be thanked for their contribution.
- Feedback from the focus group session will be written up and distributed to the participants.

### **Focus group discussion**

***Opening Statement:*** I would like to get your thoughts on how the development of MOS has worked for you and the change it has made. This might be positive, negative or indifferent, provide examples and how could you do things differently.

During the focus groups the following questions will be posed:

#### ***Relevance***

- How do you determine what you should focus on in your work?
- What challenges do you face in setting priority?
- How does your work you know if and what you are working on relate to the wider Pharmacy goals?
- How do you know if and what you are working on relates to the wider Organisational goals?

I would like to know what you think has changed since in terms of the Relevance of your work since we developed the MOS in Pharmacy?

- How has it worked for you or your team?
- Share examples...

Explore impact of these using the following questions:

- Communications
- Alignment
- Focus
- Having your say / input into what's happening in the team
- Why do you think this changed?

**Reactivity**

- How prepared do you feel you are for changes that affect you and your team(s)?
- What are some challenges you face in managing change?
- What words would you use to describe how change is planned or managed within your team and the pharmacy department?

What do you think has changed in terms of how you or your team manage daily issues since we developed the MOS in Pharmacy?

- How has it worked for you?
- Share examples...

How prepared for future change has this made for you  
Do you know how to get involved in change?

The outcomes of the four focus groups will be consolidated into common overall themes.

*A full overview of the proposed study can be obtained in the Research Proposal.*

**Proposed Focus Group Schedule**

<b>Activity</b>	<b>Date</b>
Invites to participate sent out	Week of 14/10
Participants selected – <i>Assigned to a Focus Group</i>	Week of 28/10
Focus Group 1 <i>(1 hour)</i>	Week of 04/11
Focus Group 2 <i>(1 hour)</i>	Week of 04/11
Focus Group 3 <i>(1 hour)</i>	Week of 11/11
Focus Group 4 <i>(1 hour)</i>	Week of 11/11
Feedback outputs to Participants	Week of 1/12

<<Contact Details removed for privacy>>

## Appendix K: Post-phase focus group and interview Participant Consent Form



Massey University  
School of Management  
Business School  
Private Bag 102904  
North Shore Mail Centre  
Auckland, New Zealand

### POST-PHASE - PARTICIPANT CONSENT FORM

**Project title:** Delivering and Sustaining Change with a Management Operating System – The Journey towards Medicines Optimisation

**Researcher Names:** Tim Winstone (Student researcher), Dr Margot Edwards (Supervisor), Dr Shane Scahill (Supervisor)

- I have read the Participant Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.
- I understand the nature of the research and why I have been asked to participate in the study.
- I agree to the interview being sound recorded.
- I understand the recording of the interview can be stopped at any time on request by me.
- I understand that my participation is completely voluntary.
- I understand that I may request a summary of the results from this project to be emailed to me.

**Signature:** ..... **Date:** .....

**Full Name printed** - .....

**Email:** .....

<<Contact Details removed for privacy>>

## Appendix L: Post-phase Data Capture sheet

### Notes from Pharmacy Focus Group - <<Enter Group Number>>

Date: <<Date and time>>

<<Location>>

<<Number of>> Participants

---

#### Relevance

This section of the discussion focusses on how the participants felt what they did was relevant to the overall Pharmacy and Organisational goals.

To be able to capture individual thoughts, participants were asked to write down their thoughts firsts on 'post-it' notes and this led onto the group discussion.

Different coloured 'post-it' notes were used by the different groups involved.

- Supply / Dispensary: Pink
- Clinical Pharmacy: Pale Yellow
- Medicines Management: Dark Yellow
- Medicines Safety: Blue
- Team Leaders: Orange

#### How do you describe the Relevance of what you do to the overall department priorities?

Medicines Management

- 

Medicines Safety

- 

Team Leaders

- 

Clinical Pharmacy

- 

Supply / Dispensary

- 

#### How the team are currently connected with Pharmacy and Organisational Priorities

- 

#### What is missing or challenging?

- 

#### Reactivity

This section of the discussion focusses on how the participants felt they were prepared for change through their management system and how reactive they were to change.

To be able to capture individual thoughts, participants were asked to write down their thoughts firsts on 'post-it' notes and this led onto the group discussion.

Different coloured 'post-it' notes were used by the different groups involved.

- Supply / Dispensary: Pink (P)
- Clinical Pharmacy: Pale Yellow (PY)
- Medicines Management: Dark Yellow (DY)
- Medicines Safety: Blue (B)
- Team Leaders: Orange (O)

<<Group responses based on themes and use the 'post-it' note colour to reflect the staff group>>

Impact of Reactivity

What is the impact when you are doing the things which mean you **are** reactive?

- 

What is the impact when you are doing the things which mean you **are not** reactive?

-

## Appendix M: Steering Group Terms of Reference and Agenda

### Management Operating System Research in Pharmacy Steering Group



Meeting Description				
Purpose	<ul style="list-style-type: none"> <li>To review progress of the Research Project investigating the impact of implementing Management Operating System in the Pharmacy Department</li> <li>To ensure that the research is conducted in an ethical manner and that any concerns from staff are considered</li> <li>To ensure that key stakeholders are represented through the research</li> <li>To provide support to the researcher and supervisors to be able to conduct the research in accordance with the research proposal</li> <li>To ensure that the research does not interfere with the running of the Pharmacy Department and any Clinical Care</li> <li>To ensure that the lead researcher and supervisors do not influence the research to promote their own agenda.</li> </ul>			
Membership	Pharmacy Lead Member – ADHB (Chair), Executive Leader – ADHB, Pharmacy Team representative lead team – ADHB, Pharmacy Team representative staff member – ADHB, Lead Researcher – ADHB / MU, Supervisor(s) - MU			
Meeting Date/Time	Bi-Monthly (1 hour)			
Location	Auckland City Hospital, Grafton, Auckland			
Proposed Meeting Outline				
Inputs & Suppliers	<ul style="list-style-type: none"> <li>Research Proposal</li> <li>Minutes and actions from Prior meetings</li> <li>Research Programme status report</li> </ul>			
Process (Agenda)	<b>What</b>	<b>Who</b>	<b>Time</b>	<b>Expected Outcome(s)</b>
	Review actions from last meeting	Chair		<ul style="list-style-type: none"> <li>Status of actions updated (comments provided)</li> </ul>
	Update on Research Progress	Research		<ul style="list-style-type: none"> <li>Group is aware of progress and plans</li> </ul>
	Ethical Considerations	All		<ul style="list-style-type: none"> <li>Group consider any new ethical matters relating to the research</li> </ul>
	Issues / Risks <ul style="list-style-type: none"> <li>Positives</li> </ul>	All		<ul style="list-style-type: none"> <li>Group aware of issues and suggested countermeasures</li> <li>Steering group aware of positive impacts related to the research</li> </ul>
	Other Business <ul style="list-style-type: none"> <li></li> </ul>	All		<ul style="list-style-type: none"> <li>The membership of the steering group is considered and any changes (if required) agreed</li> </ul>
Outputs & Customers	<ul style="list-style-type: none"> <li>Plan forward clear and agreed</li> <li>Actions agreed with ownership</li> </ul>			
Meeting Scope				
IS	A forum focused on the progress of the Management Operating System Research in Pharmacy			
IS NOT	A forum to discuss Operational Issues A forum to discuss the details of the MOS deployment A problem solving session			
Meeting Roles				
Chair	Pharmacy Lead Member	ADHB Executive		

## Appendix N: Steering Group Minutes Template

### MINUTES - Management Operating System Steering Group



Meeting Description				
Purpose	<ul style="list-style-type: none"> <li>To review progress of the Research Project investigating the impact of implementing Management Operating System in the Pharmacy Department</li> <li>To ensure that the research is conducted in an ethical manner and that any concerns from staff are considered</li> <li>To ensure that key stakeholders are represented through the research</li> <li>To provide support to the researcher and supervisors to be able to conduct the research in accordance with the research proposal</li> <li>To ensure that the research does not interfere with the running of the Pharmacy Department and any Clinical Care</li> <li>To ensure that the lead researcher and supervisors do not influence the research to promote their own agenda.</li> </ul>			
Attendees				
Apologies / Absent				
Date/Time				
Location				
Actions				
	Discussion	Action	Who	When

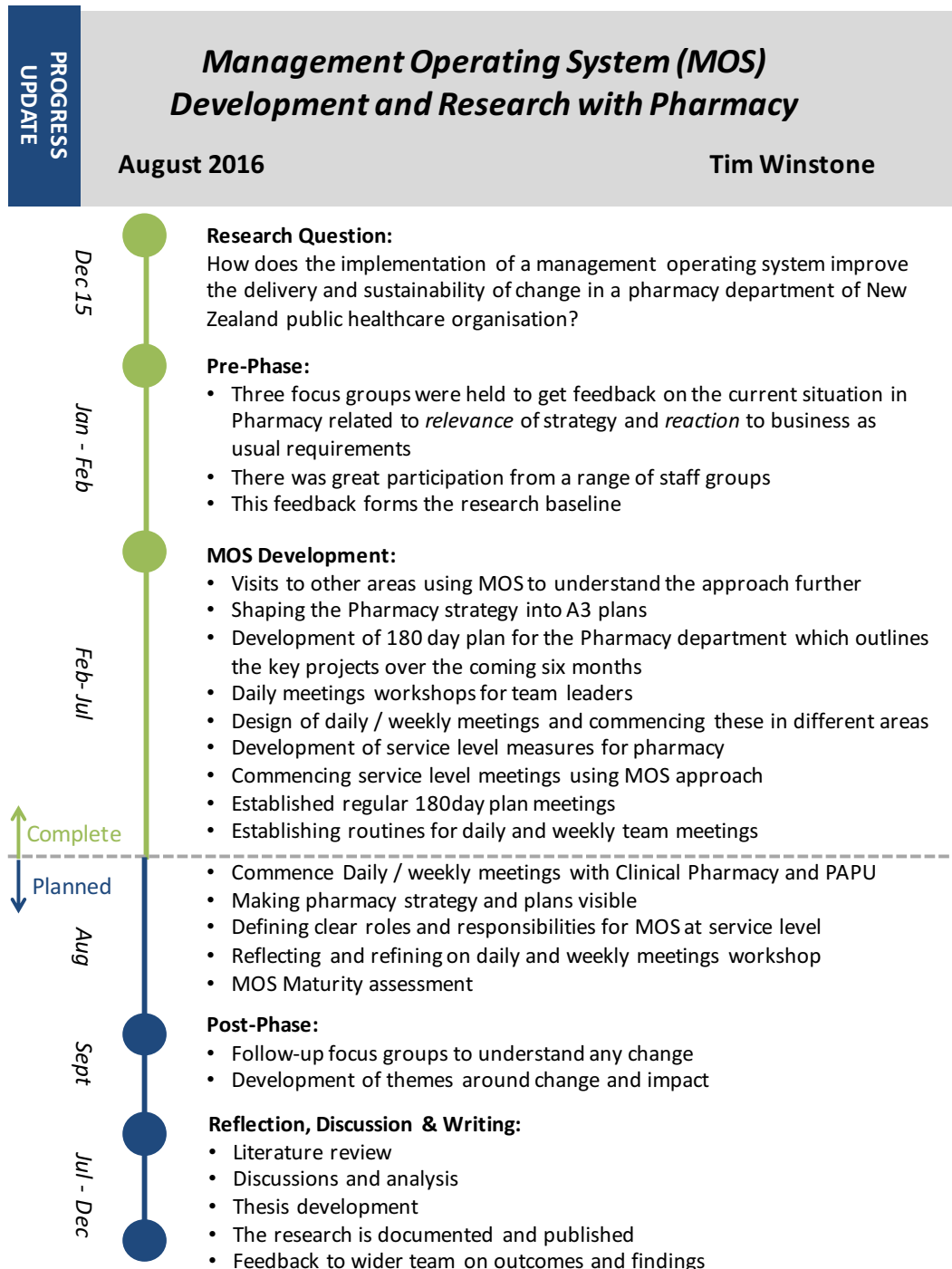
Next Meeting: DATE

I





## Appendix O: Example of Communication to Pharmacy Team

Regular communication updates were provided to keep stakeholders engaged in the research progress. An example of one such communication update is provided below:



# Appendix P: APAC Forum Poster: 2012 Service Excellence





## Service Excellence – better for patients better for staff

### 1. Background

Auckland District Health Board (ADHB) delivers a range of health services locally, regionally and nationally. Each year the demand on these services grows at a challenging rate. If this demand is unmet, we will be unable to deliver the quality of care our patients expect. This will impact on the health of our community and increase frustration and stress for our staff. Service Excellence is one of ADHB's approaches to meet these demands. It provides an opportunity to continue to provide high quality healthcare into the future.

The Service Excellence programme provides a structured pathway as shown in the 'wheel'. The programme is owned and led by the service, involves all staff and builds on what the service already does well.

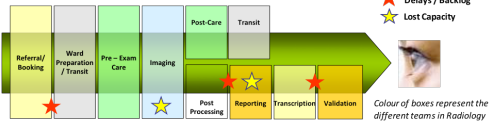
The programme focuses on the patient pathway. It defines and implements the activities that are most important to patients. The aim is to remove waste and inefficiency to make our services better for patients and better for staff.

ADHB has engaged with six services through Service Excellence. One of these services is Radiology – this is their story...

### 2. Evaluate

The first step was to find out what referring specialties, staff and patients thought about the radiology services. The findings from this, supported by analysis of performance across the patient pathway created the case for change.

#### Diagnostic Radiology - The patient pathway



The feedback and analysis highlighted the following key issues:

- There was poor flow through Imaging due to hospital patients often being late to appointments and experiencing delays which impacted patient safety and experience
- There was a high number of patients who did not arrive to outpatient appointments
- There were significant delays in reporting due to variability in staffing and interruptions which led to reports not being available for diagnosis
- There was no visibility and planning of Radiologist reporting capacity versus demand
- There was a lack of planning of the "end to end" process; teams operated independently

### 3. Stabilise, Standardise and Improve

The service identified the goals they wanted to achieve and used a number of methods to communicate these across the service.

Key work streams were identified to focus improvement efforts. These were across the radiology service including imaging, reporting and establishing operational planning. As there were many dependencies between the work streams an overall plan was required, this is outlined in the diagram below.

	STABILISE / STANDARDISE	IMPROVE	RESULTS
<b>IMAGING</b>	<ul style="list-style-type: none"> <li>Improve Patient Flow to/from Radiology</li> <li>Reduce variability of Imaging Throughput</li> </ul>	<ul style="list-style-type: none"> <li>Improve Patient Flow through Imaging</li> <li>Optimisation of Resources and Manpower</li> <li>Reduction of Inappropriate Orders</li> <li>Reduction of DNCR</li> </ul>	<ul style="list-style-type: none"> <li>Reduce Waitlist</li> <li>Increase Productivity</li> </ul>
<b>PLANNING</b>	<ul style="list-style-type: none"> <li>Determine Basic Capacity Planning</li> <li>Determine Basic Capacity Planning</li> <li>Develop and Communicate Operational Planning</li> </ul>	<ul style="list-style-type: none"> <li>Develop and Communicate Operational Planning</li> <li>Manage projected capacity to meet demand (and vice-versa)</li> </ul>	<ul style="list-style-type: none"> <li>Deliver on What is promised</li> <li>Satisfied Customers</li> </ul>
<b>REPORTING</b>	<ul style="list-style-type: none"> <li>Reduce variability in Report turnaround</li> <li>Unknown Reported Capacity</li> <li>Recalculation of Radiologists</li> </ul>	<ul style="list-style-type: none"> <li>With Agreement to complete outstanding work capability</li> <li>Reduce Interruptions</li> <li>Increase Reporting Capacity</li> </ul>	<ul style="list-style-type: none"> <li>Reduce Report Turnaround Time</li> <li>Reduce Unreported Cases</li> <li>Reduced Frustration of Team</li> </ul>

### 4. Define the Future

As well as improving the performance of the service for patients today, a focus was placed on looking ahead to form a plan for the coming years.

A series of workshops were held involving representatives across the Radiology Team to develop this plan and align it to ADHB's Key Result Areas (Patient Safety, Quality Care, Improved Health Status, Economic Sustainability, Engaged Workforce).

Communication sessions regularly take place within Radiology to deploy the strategy and update on progress against the objectives.

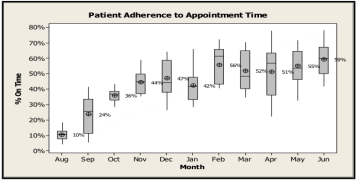
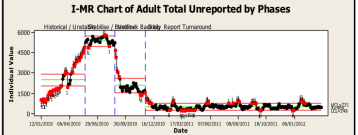
### 5. Sustain and Continue to Improve

A key aspect of the Service Excellence approach is to ensure that the service embeds the change and has the capability and tools for continuous improvement. In Radiology this included:

- Developing a service scorecard to measure performance against the goals
- Training staff in Lean Six-Sigma improvement approach. This involves nine days formal training and the support of a mentor whilst staff lead a project.
- Developing a Management Operating System. This is to connect operational performance, improvement activity and long term strategic change and ensure alignment to the ADHB's goals.

### 6. Results in Radiology

- Inpatients arriving to appointments on time improved from 10% to >55%
- 50% reduction of GP referred patients who did not arrive for Ultrasound
- Reduction in the Ultrasound wait time from nine months to less than one week
- Time for radiology report turnaround improved by 300%
- Unreported radiology exams reduced from 6000 to 500 and sustained

### 7. Results through Service Excellence across ADHB

Service Excellence has been deployed across six services at ADHB. These are just some of the results that the Service Excellence approach has enabled in the past two years.

**General Medicine:**

- 25% increase in the number of patients with neck of femur fractures who go to theatre within 24 hours
- 25% more patients are discharged at the weekend from the inpatient ward

**Orthopaedics:**

- 18.5% increase in the number of patients with neck of femur fractures who go to theatre within 24 hours
- Average orthopaedic patient length of stay (wards 75 & 77) reduced by more than two days

**Cardiac Surgery:**

- 18.5% increase of bypass surgery carried out internally since 2009/10
- 45% reduction in patients waiting longer than their target time frame since Jan 2012

**Adult Emergency Department:**

- 12% increase in the proportion of patients referred by Emergency Medicine to Inpatient Specialities within three hours of admission (Nov 10 – Sep 11)
- Patient Satisfaction improved by 3%

**General Surgery:**


- The time patients wait for acute surgery has reduced from an average of 40 to 27 hours
- Patients access elective surgery on average 31 days sooner

### 8. Message for Others


The Service Excellence approach provides a structured approach to bring all the elements of successful change management together. The key to success has been to have clinical leadership and buy in alongside the expertise of Improvement Specialists. Using this approach shows that step change is possible.

**Contact: Tim Winstone**  
[twinstone@adhb.govt.nz](mailto:twinstone@adhb.govt.nz)


**Our key result areas:**




patient safety




better quality care



improved health status



economic sustainability



engaged workforce