Integration and the Performance of Large-scale Health Enterprises: Field Studies of Psychological Health Delivery Systems in the U.S. Military

by

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Abstract

Large-scale health enterprises comprise multiple organizations that provide programs and services for patients. Despite the interconnectedness of these systems there is a lack of empirical research documenting how these organizations work collectively – or *integrate* – and how this integration impacts enterprise performance measured through quality, efficiency, and access. In the case of psychological healthcare, patients often require a number of services that span multiple departments and programs within an enterprise, increasing the complexity of maintaining a continuum of care for these patients. This paper, which is part of a larger effort to examine psychological healthcare in the U.S. Military Health System, presents a series of qualitative observations and analyses of the integration of psychological health-related organizations at two large health enterprises within the military. These qualitative inquiries take a multilevel approach for examining integration within these enterprises and address the following areas of interest: 1) the mechanisms for integration; 2) the objects of integration; 3) the dimensions of integration; 4) the contextual factors that influence integration; and 5) the impacts of integration on enterprise performance. Using semi-structured interviews, qualitative data was collected and then examined using content analysis to identify the most frequent themes for each area of interest. This data was used to validate and refine a comprehensive framework for integration that was developed to pull together multiple, distinct strands of the integration literature. This data was also used to demonstrate the relationship between different dimensions of enterprise performance and to identify areas where, in the process of optimizing enterprise performance, there is a trade-off between these dimensions. The preliminary, qualitative results of this research are intended to provide a conceptual foundation and framework for future analytic studies.

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My time at MIT working on this thesis has been an incredible, transformative experience. Two years ago while studying aerospace engineering at Georgia Tech, little would I have guessed that I would be doing advanced research on how the military delivers psychological health care. It has been a long, sometimes painful process, to dive into an entirely new field, but the experience has been both professionally and personally rewarding. Through my research, I have acquired a new set of skills that I have no doubt will serve me well in my future endeavors. The experience has also taught me that there aren't things that we don't know – just things that we haven't learned yet. This simple, yet powerful state of mind is worth just as much as, if not more than, any lesson that I learned in a classroom.

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Chapter 1

Introduction

Motivation

This thesis is particularly motivated by several gaps that exists in the literature on how organizations within health care enterprises work collectively – or *integrate* – to coordinate care and how this integration impacts enterprise performance. This issue is an increasingly important one as health care enterprises handle a growing number of cases requiring complex treatments that must be coordinated across multiple care services (Bodenheimer, 2008; Nolte & McKee, 2008) with enterprise performance being a result of these collective efforts (Provan, Fish & Sydow, 2007). The pressure from this has spawned new movements in health care such as Accountable Care Organizations (ACOs) and the Patient Centered Medical Home (PCMH) which attempt to provide the structure and incentives to better coordinate care. A better understanding of integration and its relationship to enterprise performance is crucial if these efforts are to achieve their stated goals.

There are three primary gaps that were identified in the literature: the lack of a unifying theory and explanation for different forms of integration (Barringer & Harrison, 2000), the limited consideration of the cross-functional dynamics of integration (e.g., Gittell, Seidner & Wimbush, 2010), and the limited consideration of the relationship between integration and enterprise performance

(Provan, Fish, & Sydow, 2007). With regards to the multiple theories of integration, the literature is broad and fragmented with respect to how organizations within a health care enterprise integrate (Glover, Naveh & Carroll, 2012; Singer et al., 2011; Nolte & McKee, 2008; Axelsson & Axelsson, 2006; Oliver, 1990). In an effort to clarify underlying concepts and boundaries several attempts have been made to identify the key characteristics that distinguish different forms of integration. This resulted in several different theories and approaches, but there is still not a single, comprehensive framework that shows the relationship among the all of the various forms of integration.

Cross-functional dynamics refers to the interactions between the various functions of an enterprise such as strategic planning, financial management, human resources, information management, and service delivery. For this thesis, cross-functional dynamics refers to the impact of integration among one set of functions upon the other enterprise functions. Singer et al. (2011) categorize integrative efforts into two groups: those that result in integrated delivery systems (i.e., integrated support functions) and those that result in integrated patient care. The importance of this distinction lies in the authors' observation that integrated delivery systems do not necessarily result in integrated patient care. While Singer et al. (2011) highlight the significance of cross-functional dynamics their research describes this topic as an area for future research; furthermore, limited consideration is given to this issue in other empirical studies (e.g., Gittell, Seidner & Wimbush, 2010).

With regards to enterprise performance, there has been limited consideration of the relationship between integration and enterprise performance (Provan, Fish, & Sydow, 2007). Many integration studies, especially the earlier ones, focus on the determinants of integration (e.g., Oliver, 1990) and the different forms integration can take (e.g., Alexander, 1993). Although the relationship has been considered, there has been a lack of clarity as to the type of integration that was having a particular impact on performance because the term "integration" or "coordination" has been used in a general sense. Also, studies often fail to take into account multiple dimensions of performance (Provan,

Fish, & Sydow, 2007), thus failing to highlight the potential tradeoffs in trying to improve a particular performance dimension over other dimensions. A comprehensive framework connecting the different forms of integration is needed in combination with the simultaneous consideration of all three enterprise performance dimensions – quality, efficiency, and access.

The implications of these deficiencies in the literature have real-world consequences. Psychological and behavioral health issues have emerged as a serious problem in the United States Military due to the enduring nature of the recent conflicts in both Operation Enduring Freedom (OIF: Afghanistan) and Operation Iraqi Freedom (OEF: Iraq) including extended deployments and prolonged exposure to combat stress (Institute of Medicine, 2010). In particular, post-traumatic stress disorder (PTSD) has been described as one of the signature wounds emerging from OEF/OIF (Tanielian and Jaycox 2008). The complexity of these issues requires a service member to seek multiple types of services from a number of different organizations spanning different functional components of the military enterprise. As an example, the Army Medical Command, Installation Command, and Forces Command all offer different types of services that a service member may need in dealing with their psychological and behavioral health issues. Understanding the impact of different types of integration on the various dimensions of enterprise performance is important to the military as it tries to continue providing quality care while increasing access and dealing with ever tightening budgets.

To address the three gaps in the literature discussed in this section this research takes a theory-building approach (Eisenhardt, 1989). A review and synthesis of the literature is used to create a framework connecting the various conceptions of integration to each other and to the three dimensions of enterprise performance. Two field studies on the delivery of behavioral and psychological care services in the United States Military are used to assess the validity of this framework. Data from these field studies is also used to build a set of testable propositions concerning the cross-functional dynamics of various forms of integration and the relationship between these forms of integration and the various

dimensions of enterprise performance. In line with Eisenhardt (1989), this theory building approach is seen as appropriate because this work is an early endeavor into these particular research topics. This research, which utilizes primarily qualitative data, can then serve as a building block for future research which leverages quantitative data.

Research Purpose, Key Questions and Objectives

There are three primary purposes to this thesis:

1. Develop a framework to connect the various conceptions of integration to each other and to the various dimensions of enterprise performance
2. Understand the mechanisms used to accomplish integrative activities from the perspective of the framework developed
3. Understand the relationship of the different types of integration to each other and to the various dimensions of enterprise performance

The key questions are:

1. What are the different types of providers and professionals that comprise an organization?
2. Who is involved in care/service delivery decisions?
3. What are the internal mechanisms for integration (i.e., mechanisms within an organization)?
4. What are the external mechanisms for integration (i.e., mechanisms between organization)?
5. What is the impact of internal integration on enterprise quality, access, and efficiency?
6. What is the impact of external integration on enterprise quality, access, and efficiency?

The objectives are to:

1. Define a comprehensive list of integrative practices for health care enterprises categorized based on the framework developed
2. Use field study data to build a set of testable propositions

Research Design and Limitations

The research design was based on the development of a framework of health care enterprises that illustrated the relationships between the various dimensions of integration and performance. This framework was used to guide the quantitative analysis of field study data from two large-scale health entities within the U.S. Military Health System. The data utilized within this thesis is primarily qualitative and is meant to support the development of integration related theory that can be tested in future research.

This section provides a brief background as to how the model was developed. Chapter 2 provides a more detailed description.

The first step in developing this framework was to understand the various categorizations of integration that have been presented in the literature. Two notable categories that had recently been developed provided the foundation – *objects* of integration (Singer et al., 2011) and *dimensions* of integration (Glover, Naveh & Carroll, 2012). Singer et al. (2011) observe that one of the ambiguities in discussions about integration is that different conceptions of integration are compared to one another despite having different focal *objects*. The term *object* refers to the enterprise or organizational component that is the focus of integrative efforts. Based on this concept, integration mechanisms can be categorized in three primary ways: those that serve to integrate whole organizations, those that serve to integrate organizational activities (i.e., support functions), and those that serve to integrate the service delivery itself.

Glover, Naveh & Carroll (2012) take a different approach to distinguishing different types of integration. In their work, the authors present three *dimensions* of integration that have emerged out of different lines of research: centralization, coordination (formal), and cooperation (informal). The concept of *centralization* focuses on the concentration of decision making power (Aiken & Hage, 1968) and influence (Provan & Milward, 1995) in a single entity. The concept of *coordination* refers to the

formalization of particular ways of conducting tasks that are divided across organizational boundaries (Argote & Ingram, 2000). The concept of *cooperation* refers to the tendency to communicate across organizational boundaries without formal requirements. These three dimensions are meant to distinguish three different mechanisms or methods of integration.

In developing a single framework, there are similarities between these two concepts – *objects* and *dimensions* – that facilitate their combination, and their combination provides a more nuanced view of the system. The dimension of centralization is primarily related to inter-organizational integration. Coordination and cooperation can be two different means of integrating intra- and inter-organizational activities. Coordination can also be a means of integrating service delivery activities (i.e., activities that directly involve the patient). Table 1 presents an overview of these similarities. The combination of these different lines of thought can be seen in Figure 1 which presents our preliminary research model. A more detailed discussion of the research approach and methodology is presented in Chapter 3.

The second step in developing this framework was to illustrate the cross-level dynamics (i.e., organizations, organizational activities, and service delivery activities) between the various dimensions of integration – centralization, coordination, and cooperation. The emphasis was placed on the coordination of service delivery activities because, as per Shortell et al. (1996), service delivery activities are where value is created not only for the patient, but also for the community and the payer. Singer et al. (2011) also point out that the integration of service delivery activities is implicitly the goal of many integration efforts. For these reasons the relational arrows in Figure 1 point towards integrated patient care instead of towards, or being bi-directional with, the components comprising an integrated delivery system. Separate arrows are drawn for each of these components of integration in order to highlight the individual impact they can have on the coordination of service delivery activities.

Table 1: Comparison of *objects* and *dimensions* of integration

Object of Integration Singer et al. (2011)	**Focus of Integrative Effort**	**Dimension of Integration** Glover, Naveh & Carroll (2012)
Organization	Structure, control, authority	Centralization
Organizational Activities	Performance metrics, processes, routines, relationships	Aspects of Coordination and Cooperation
Service Delivery Activities	Provider-to-provider and patient-to-provider interaction	Coordination

Finally, the framework presented in Figure 1 contains the three primary aspects of performance for health care enterprises – quality, access, and efficiency – in order to highlight the importance of their simultaneous consideration. Without this, it can be difficult, or impossible, to understand the potential tradeoffs in trying to improve upon one particular dimension of enterprise performance over the other dimensions.

The result is a single framework, spanning multiple characteristics of integration and multiple enterprise levels, that shows the relationship between the various, often separately discussed, components of integration and illuminates the multi-level dynamics that can enable or hinder the achievement of integrated patient care. The holistic nature of this framework also lends itself well to analyzing the relationship between the three dimensions of performance for health care enterprises – quality, access, and efficiency – and the integration of their operations.

While this model provides a logical framework for understanding the impact of integration on enterprise performance, one limitation of this model is that many of the inputs are complex, thus making it difficult to measure cause and effect in a quantitative way. Additionally, the metrics used for enterprise performance – quality, access, and efficiency – are, in many cases, difficult to measure or are simply unavailable. Further, since the data collection for this thesis is primarily qualitative, the most this model will be able to achieve is to correlate the relationship between integration and performance. Testing for causality will need to be the focus of future efforts.

Other limitations of the research design relate to the research methodology. First, due to various restrictions, data was only collected for two sites and we only had access to a limited number of respondents at each site. Future research should expand data collection to more sites and more organizations at each site. The data sample for this thesis also focuses entirely on the U.S. Military Health System. Because of the unique relationship between service members and the military (i.e., they can be ordered to seek care) some of the outcomes may not be generalizable to the civilian health care system. However, since we examined sites that were primarily medical campuses, and not power projection installations, we would expect this to make the observations more comparable to the civilian sector. Regardless, future research should apply this approach to a study of civilian health care enterprises.

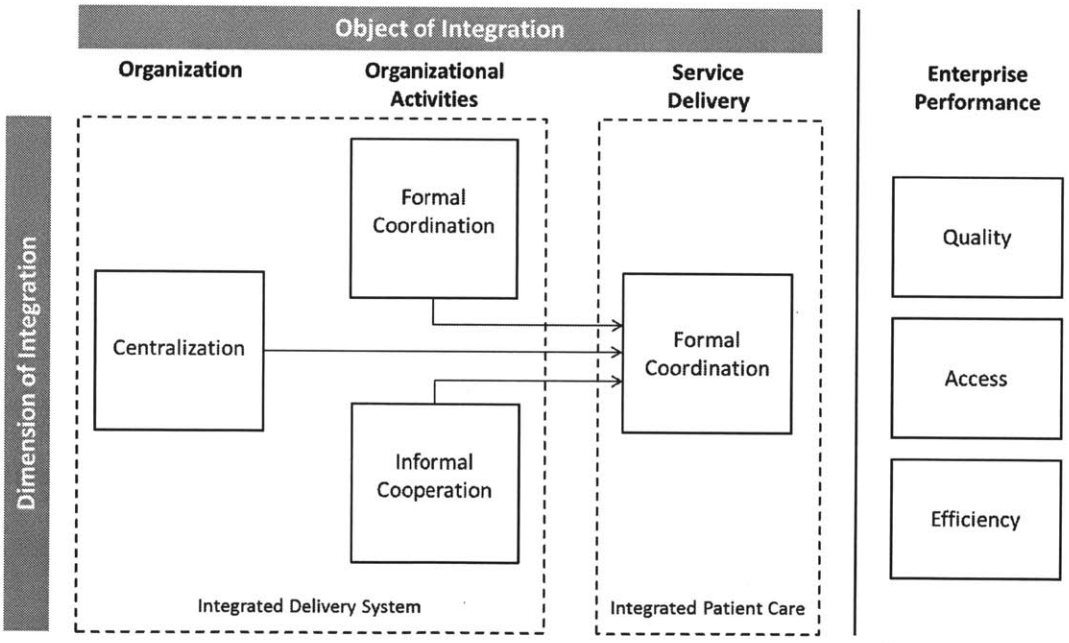

Figure 1: Comprehensive framework for considering integration and enterprise performance

Contributions

As coordinated care becomes an increasingly important goal to the health care community, this thesis aims to fill the gaps in the integration literature identified earlier in this chapter. Specifically, this thesis aims to contribute to a better understanding of the cross-functional dynamics involved in integrative activities and the impact of these dynamics on the various dimensions of enterprise performance. A better understanding of this phenomenon will be of use to health care managers, policy makers, providers, and others involved in the provision of health care.

Health care managers are responsible for overseeing a number of different aspects of a healthcare enterprise such as financing, personnel, facility operations, and health information. While the range of responsibilities will vary based on the size and other characteristics of the enterprise in which they are working, their ultimate job is to improve the efficiency of their health care facilities and the quality of care provided. The challenges of this job come from keeping up with the changing structure of health care financing, an increasingly complex regulatory environment, and determining how to integrate new health care innovations (Bureau of Labor Statistics, 2012). Understanding the nature and dynamics of integration will serve as an important tool for enterprise management that can help in the ongoing effort to deliver higher quality, lower cost health care to those served by the enterprise.

Health care policy makers may work internal or external to an enterprise. Generally, though, they are responsible for collecting policy-relevant information, analyzing policy options, making recommendations, and evaluating the outcomes of existing policies (Blanchard, 2007). While policy makers may focus specifically on quality and efficiency similar to health care managers, they may also focus on other objectives such as affordability, access, and prevention. A common problem faced by policy makers is that implementation does not always align with policy intentions since the implementation component is out of the hands of policy makers (Pressman & Wildavski, 1973). Understanding the nature and dynamics of integration can help policy makers to know at what level of

the enterprise to direct their efforts and how to shape policy so that it aligns with these organizational dynamics.

Providers and nurses, as well as other care givers, are responsible for the front line provision of health care in a medical enterprise. Lower level administrators are responsible for working with these providers while supporting the health care managers and policy makers. The day-to-day operations of providers and administrators are directly impacted by the decisions of policy makers and health care managers. These decisions are responsible for constructing the organizational environment in which these two groups operate. The challenge for these people lies in the fact that some of these work practices create divisions between the very people who need to coordinate in order to deliver effective care (Piore, 1993). In order to achieve the ultimate goal of taking care of patients, providers and administrators develop informal relationships and find work-arounds to achieve this goal. Understanding the nature and dynamics of integration decisions made by managers and policy can help providers and administrators to understand the source of their frustration and empower them to act as forceful advocates for change. It can also help them develop more effective work-arounds in cases where change is slow.

To address these issues as well as the others laid out in this chapter the remainder of this document is organized as follows. Chapter 2 presents the literature review done for this study. Chapter 3 provides a further elaboration of the research design and describes the qualitative methods used to collect and analyze data. Chapter 4 presents the findings from the first field study undertaken, and Chapter 5 presents the second. Chapter 6 provides a discussion and interpretation of these findings and presents propositions about the nature of the studied phenomenon. Finally, Chapter 7 presents the collective findings of this research and presents areas for future research.

Chapter 2

Literature Review

The literature on integration is broad and fragmented (Glover, Naveh & Carroll, 2012; Singer et al., 2011; Nolte & McKee, 2008; Axelsson & Axelsson, 2006; Oliver, 1990) despite the fact that most authors trace the origins to Lawrence and Lorsch (1967) and their organizational theory of differentiation and integration (Glover, Naveh & Carroll, 2012; Singer et al., 2011; Nolte & McKee, 2008; Axelsson & Axelsson, 2006). Sofaer and Myrtle (1991) are an interesting exception in that they point instead to Levine and White (1961) and their conception of exchange as the basis for understanding inter-organizational relations. Despite this shared beginning the subsequent literature has followed several trajectories, and the irony of this situation has not been lost on integration scholars; at least one (Axelsson & Axelsson, 2006) has quipped that the integration literature is itself in need of integration. Table 2 presents a number of literature reviews that capture the varying focus of the integration literature over time.

Some of the earlier reviews of the integration literature focused on the determinants and consequences of inter-organizational relations (Sofaer & Myrtle, 1991; Oliver, 1990) and, more recently, networks (Brass et al., 2004). Subsequent efforts focused on identifying and categorizing different types of integration primarily focusing on inter-organizational relations (Nolte & McKee, 2008; Horwath & Morrison, 2007). As the literature evolved it became apparent that there was a lack of a common

definition (Singer et al., 2011; Nolte & McKee, 2008) which partly explains the emergence of various dichotomies. Table 3 presents a variety of these definitions as captured by Singer et al. (2011). In an effort to clarify the underlying concepts and boundaries, several attempts have been made to identify the key characteristics distinguishing different types of integration – combinations of vertical and horizontal integration (Axelsson & Axelsson, 2006), *objects* of integration (Singer et al., 2011), and *dimensions* of integration (Glover, Naveh & Carroll, 2012) – but still no consensus has been reached.

The remainder of this chapter is focused on tying together the characteristics that have been identified distinguishing different types and forms of integration. A particular focus is placed on *objects* and *dimensions* of integration as presented by Singer et al. (2011) and Glover, Naveh, and Carroll (2012), respectively, because the concept of horizontal and vertical integration presented by Axelsson and Axelsson (2006) is implicitly wrapped up in these other characteristics. From this analysis emerges the need to take into consideration the multi-level dynamics present in an enterprise. The result is a single framework, spanning multiple characteristics of integration and multiple levels of an enterprise, that presents a comprehensive view of integration that lends clarity to the ongoing debate by illuminating the relationship between the various, often separately discussed, components of integration. The end of this chapter then focuses on how this resulting conception of integration can be tied to enterprise performance in order to address the issue of determining the right balance of integration.

Objects of Integration

One of the ambiguities in discussions about integration is that different conceptions of integration are compared to one another despite having different focal *objects* (Singer et al. 2011). The term *object* refers to the enterprise or organizational component that is the focus of integrative efforts. For example, is the focus of integration facilitating provider interactions or facilitating the administrative components of two separate offices. The underlying notion behind Singer et al. (2011) is that the clarification of these objects can improve our understanding of the concept of integration and help to distinguish different types of integration from one another.

Table 2: Literature reviews focused on integration

Source	Main Focus	Conceptual / Empirical
Oliver (1990)	Reviews the literature on integration to identify the primary determinants of inter-organizational relations. Connects variations of these determinants to different types of inter-organizational relations and uses them to predict the formation of the different relationship types.	C/E
Sofaer & Myrtle (1991)	Reviews and assesses the literature on inter-organizational theory, generally as well as specifically for health care. Focuses on determinants of these relationships, factors influencing their development over time, and consequences of their formation.	C/E
Brass et al. (2004)	Reviews the literature, primarily non-health care, on networks to identify the primary determinants and consequences of their formation. Shows that these studies tend to focus on three levels: inter-personal, inter-unit, and inter-organizational.	C/E
Axelsson & Axelsson (2006)	In the context of public health, attempts a theoretical reconstruction of integration to tie together the various strands of integration literature. Describes different forms of inter-organizational relationships as varying along two axes – vertical and horizontal integration – with vertical representing hierarchical relationships.	Mostly Conceptual
Horwath & Morrison (2007)	In studying the delivery of child welfare services, reviews the literature on integration to identify different degrees of inter-organizational integration ranging from informal and local collaborations to formal and whole agency collaborations.	Mostly Conceptual
Nolte & McKee (2008)	In the context of chronic care, reviews the health care integration literature concluding that integration may occur in different and complex structural configurations as a result of diverse environments, historical paths taken by health systems, and the availability or knowledge of different integrating mechanisms.	C/E
Singer et al. (2011)	In developing measures for integrated patient care, reviews the literature on integration in healthcare to distinguish between integrated delivery systems and integrated patient care. Describes different forms of integration based on their *object* of integration: organizations, organizational activities, patient care.	C/E
Glover, Naveh & Carroll (2012)	In reviewing the various strands of integration literature, identifies three prominent *dimensions* of integration – centralization, coordination, cooperation – that present a holisitic picture of how different levels of organizations within an enterprise work together.	C/E

Table 3: Definitions of integration with a particular focus on health care [Adopted from Singer et al. (2011)]

Source	Definition
Lawrence & Lorsch (1967); Axelsson & Axelsson (2006)	Integration is the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment.
Glover, Naveh & Carroll (2012)	Organization–enterprise integration is how multiple organizations within an enterprise boundary manage the interdependencies among relevant work practices.
Shortell et al. (1994)	An integrated or organized delivery system is a network of organizations that provides or arranges to provide a coordinated continuum of services to a defined population and is willing to be held clinically and fiscally accountable for the outcomes and health status of the population served.
Grone & Garcia-Barbero (2001)	Integrated care is a concept bringing together inputs, delivery, management, and organization of services related to diagnosis, treatment, care, rehabilitation, and health promotion. Integration is a means to improve the services in relation to access, quality, user satisfaction, and efficiency.
Kodner & Spreeuwenberg (2002)	Integration is a coherent set of methods and models of the funding, administrative, organizational, service delivery, and clinical levels designed to create connectivity, alignment, and collaboration within and between the cure and care sectors.
Niskanen (2002)	Integrated care includes the methods and strategies for linking and coordinating the various aspects of care delivered by different care levels (i.e., primary and secondary care).
Patient Centered Primary Care Collaborative (2007)	Care is coordinated and/or integrated across all elements of the complex health care system and the patient's community. Care is facilitated by registries, information technology, health information exchange, and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner.
Mur-Veeman et al. (2003); Ouwens et al. (2005)	Integrated care is an organizational process of coordination that seeks to achieve seamless and continuous care, tailored to the patient's needs, and based on a holistic view of the patient.
Billings, Coxson & Alaszewski (2003)	Integrated care is constituted when the requests and needs that the client may experience in various areas are met.
Institute of Medicine (1996)	Integrated care encompasses the provision of comprehensive, coordinated, and continuous services that provide a seamless process of care. Integration combines events and information about events occurring in disparate settings, levels of care, and over time, preferably throughout the life span
Singer et al. (2011)	Integrated patient care is care that is coordinated across professionals, facilities, and support systems; continuous over time and between visits; tailored to the patients' needs and preferences; and based on shared responsibility between patient and caregivers for optimizing health.

In a review of health care research concerning integration and chronic care, Nolte & McKee (2008) identified four primary objects of integration: organizational, functional, professional, and clinical functions. Definitions of these types of integration are as follows:

- **Organizational Integration:** This type integration takes place between two or more organizations and can refer to the merging of organizational structures, resources, or objectives. Singer et al. (2011) describe it as dealing with issues of ownership, contractual arrangements, and alliances among health care institutions.
- **Functional Integration:** This type of integration describes the coordination of key support functions such as financial management, human resources, strategic planning, information management and quality improvement across different operating units.
- **Professional Integration:** This type of integration describes formal collaboration among health care professionals within and between institutions that takes place outside of the provision of care. This differs from organizational integration in that, while individuals or groups from different organization may work together, their respective organizations remain distinct entities.
- **Clinical Integration:** This type of integration describes organizational activities intended to coordinate patient care services across people, functions, activities, and operating units over time to maximize the value of services delivered to patients. (Shortell, Gillies & Anderson, 1994; Simoens and Scott, 1999; Shortell et al., 2000; Delnoij et al., 2002; Singer et al., 2011)

Singer et al. (2011) classify these objects of integration into three general categories: organizations, organizational activities, and patient care or service delivery. From the previous list, organizational integration is associated with organizations meaning that organizations are the focus of integrative efforts. Functional and clinical integration are associated with organizational activities meaning, similarly, that these activities (e.g., various support functions such as referrals) are the focus of integrative efforts. Finally, clinical integration is associated with patient care.

These three objects distinguish three different categories of integration and can also be representative of different organizational levels which is a concept used elsewhere in the integration literature. Brass et al. (2004), in their literature review, categorize much of the research based on the organizational level of focus, and the authors present three primary levels: inter-personal, inter-unit, and inter-organizational. While the specific descriptions are a bit different than the objects/levels presented by Singer et al. (2011), the concept is generally the same. Brass et al. (2004) also observe that much of the theoretical and empirical work reviewed for this study is completely contained within one of these levels. For example, in analyzing the impact of inter-unit integration, Reagans and Zuckerman (2001) found that units that were more connected to other units had higher unit productivity than less connected units. In this example, the purview of the study is entirely within the unit level.

Multi-level Dynamics

In the integration literature, a few references are made to multi-level dynamics, but the issue is not explored in much detail. Recall that the review done by Brass et al. (2004) shows most studies taking an *intra*-level perspective. Singer et al. (2011), in their discussion of objects of integration, also do not seek to explain the multi-level dynamics at play, but they point out why the issue is important in health care. The authors note that integrated organizational structures and processes may fail to produce integrated patient care. In other words, there is an assumption that certain cross-level dynamics will occur that never actually materialize. For example, Mur-Veeman et al. (2003) and Ouwens et al. (2005) present similar definitions of integrated care as an organizational process of coordination that seeks to achieve seamless and continuous care tailored to the patient's needs (Singer et al., 2011). In this definition there is no explanation as to how these processes will lead to integrated patient care; it is simply assumed.

In order to begin understanding these multi-level interactions it will help to lay out a framework showing the relationship between two concepts – *integrated delivery systems* and *integrated patient care* – which have often been discussed separately. The definition of an *integrated delivery system* put forth by Shortell et al. (1994) refers to structurally integrated organizations capable of providing a continuum of health care services. The emphasis on multiple organizations underscores the fact that no one organization will likely be able to provide all services along a continuum. Inter-organizational integration will be necessary to bring the necessary organizations together, and the integration of organizational activities will be necessary to facilitate movement of patients along the continuum of services. Recall that part of the definition proposed by Singer et al. (2011) for *integrated patient care* is *care* that is coordinated across professionals, facilities, and support systems. Where the emphasis was previously on ensuring that patients progress along the continuum of care, the emphasis here is on ensuring the coordination between providers along this continuum in the development of treatment and other service plans as well as the actual delivery of these services. This requires the integration of service delivery activities. Figure 2 presents the resulting framework.

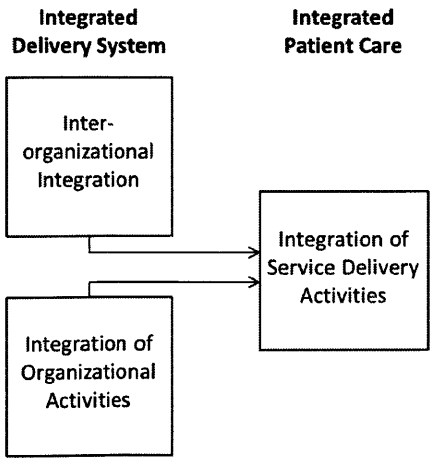

Figure 2: Relationship between objects of integration, integrated delivery systems, and integrated patient care

Understanding the factors influencing the integration of service delivery activities is particularly important because this is where Shortell et al. (1996) argue that value is created not only for the patient but also for the community and the payer. Singer et al. (2011) also point out that the integration of service delivery activities is implicitly the goal of many integration efforts. For these reasons the relational arrows in Figure 2 point towards integrated patient care instead of towards, or being bi-directional with, the components comprising an integrated delivery system. The framework also postulates that inter-organizational integration and the integration of organizational activities separately affect the integration of service delivery activities. The often separate discussion of these forms of integration (Singer et al., 2011) generally supports this line of reasoning.

Understanding the multi-level dynamics represented in Figure 2 will provide a clearer insight into how integrated delivery systems can facilitate integrated patient care, and, conversely, how they can fail to do so. A multi-level approach improves our ability to understand both the macro and micro dynamics of the nested nature of these sub-systems (Matheiu & Chen, 2011; Hackman, 2003). Furthermore, understanding these relationships can help shed light on which stakeholders – managers, providers, patients, etc. – are benefitting from particular integrative efforts. This knowledge will be particularly useful to those planning enterprise or process transformations.

Dimensions of Integration

Glover, Naveh & Carroll (2012) take a different approach to distinguishing different types of integration. In their work the authors present three *dimensions* of integration that have emerged out of different lines of research: centralization, coordination (formal), and cooperation (informal). That these three dimensions have emerged separately is not surprising. They are each the result of different, but well established, theoretical approaches used to understand how organizations function from a particular "lens" such as a strategic design, political, or cultural lens as observed by Ancona et al. (2001). The

authors note that these different theoretical approaches result in certain variables being taken into consideration while others are ignored thus leading to the emergence of three separate dimensions of integration.

The concept of *centralization* has emerged from research taking a strategic approach focusing on the impact of enterprise structure on integration (Davis, Eisenhardt, & Bingham, 2009; Provan & Milward, 1995; Ghoshal & Barlett, 1990; Lawrence & Lorsch, 1967). This structure has, generally, been conceptualized in two different ways. The first approach describes centralization in terms of the concentration of decision making around a single entity (Aiken & Hage, 1968). The second approach is an extension of network theory and describes centralization in terms of the extent to which organizations coalesce or organize around a particular focal point (Provan & Milward, 1995). Having greater centrality, then, represents having a higher degree of influence. Combined, these two approaches describe centralization in terms of the structure of how organizations within an enterprise are organized and the structure of how power and authority distributed.

The concept of *coordination* has emerged from research taking an operational approach focusing on inter-organizational relationships and the need for this type of integration to manage interdependencies (Thompson, 1967) so that differentiated organizations within an enterprise can still achieve unity of effort (Lawrence & Lorsch, 1967). Coordination refers to the formalization of organizational features such as rules, procedures, communication, and routines (Jansen et al., 2006; Khandwalla, 1997) which define particular ways of conducting organizational functions by controlling the sequence of steps that should be taken for the completion of tasks divided across organizational boundaries (Argote & Ingram, 2000). This formalization can be operationalized in many ways, such as cross-functional teams as well as IT systems and performance measures that span boundaries (Gittell, Seidner & Wimbush, 2010).

The concept of *cooperation* has emerged from research taking a cultural approach focusing on human resource practices concerning informal activities and behaviors such as communication quality (O'Reilly, Snyder & Boothe, 1993), debate (Simons, Pelled & Smith, 1999), mutual respect among workers, and interpersonal conflict and agreement seeking (Knight, 1999). In contrast to coordination, cooperation is concerned with the tendency to communicate across organizational boundaries without formal requirements. Cooperation is exemplified by things such as informal cross-organizational relationships among employees (Gittell, Seidner & Wimbush, 2010; Horwrath & Morrison, 2007; Zaheer, McEvily & Perrone, 1998; Wren, 1967) that facilitate the alignment of motivation and interests in an informal way that allows for flexible inter-organizational relations (Kretschmer & Puranam, 2008).

Similar to the objects of integration presented by Singer et al. (2011) these three dimensions are meant to distinguish three different categories or methods of integration. Glover, Naveh, and Carroll (2012) argue that the combination of all of these dimensions enriches our understanding of the overall concept of integration. The work of these authors represents the first attempt to conceptually tie together these three dimensions. Furthermore, the authors can only point toward one empirical study that simultaneously takes multiple dimensions into account (Gittell, Seidner & Wimbush, 2010) and none that consider all three.

Ancona et al. (2001) suggest that individual lenses – in this case centralization, coordination, and cooperation – are necessary to illuminate different aspects of an issue – in this case integration – but are insufficient on their own to tell the whole story. The authors use as an example of the story of the blind men and the elephant. All of the dimensions of integration, together, are necessary to have a complete understanding of the issue. Ancona et al. (2001) point out that considering each dimension separately is problematic because they each may lead to a different set of solutions for managers and policy makers. This is especially the case if the effects of each dimension of integration are not additive. In this light, the development of policy and management strategies would necessarily require the simultaneous consideration of all three dimensions.

Developing a Single Framework of Integration

As a brief review, Singer et al. (2011) presented the concept of *objects* of integration as a way of distinguishing different types of integration. The three objects they identified in the literature are organizations, organizational activities, and service delivery activities. Their work raised the need for better understanding the multi-level dynamics within an enterprise because there have been attempts at building integrated delivery systems that failed to result in integrated patient care despite the fact that this was one of the primary goals of the integrative effort (Schauffler et al., 2001; Shenkin, 1995). Glover, Naveh, and Carroll (2012) then presented the concept of dimensions of integration by pulling together three dimensions – centralization, coordination, and cooperation – that had previously only been discussed separately. This was their way of distinguishing between different types of integration. Lest we worry that we have reached yet another stalemate there are similarities between these two approaches that facilitate their combination. Table 4 presents an overview of these similarities.

The concepts presented by Singer et al. (2011) and Glover, Naveh, and Carroll (2012) are not mutually exclusive. While they are both attempts to distinguish different types of integration they start from different premises that end up overlapping one another. The concept of *objects* of integration is meant to clarify that aspect of the organization which is the focus of an integrative effort while the concept of *dimensions* is meant to clarify the way in which that integration is achieved. Theoretically, all three dimensions could be mapped onto each object, but it appears that some dimensions are a better fit for particular objects. This, in turn, is important for focusing the efforts of future research.

Table 4: Comparison of *objects* and *dimensions* of integration

Object of Integration Singer et al. (2011)	**Focus of Integrative Effort**	**Dimension of Integration** Glover, Naveh & Carroll (2012)
Organization	Structure, control, authority	Centralization
Organizational Activities	Performance metrics, processes, routines, relationships	Aspects of Coordination and Cooperation
Service Delivery Activities	Provider-to-provider and patient-to-provider interaction	Coordination

Centralization is most representative of where the organization itself is the object of integration because both the *object* and the *dimension* are concerned with issues of structure, control, and authority. Recall that there were two concepts of centralization presented by Glover, Naveh, and Carroll (2012): 1) the arrangement of multiple organizations around a focal point (Provan & Milward, 1995), and 2) the concentration of decision making around a single entity (Aiken & Hage, 1968). Both of these approaches are concerned with the organization as a whole and less concerned with the mid-levels and service delivery level of an organization.

Both coordination and cooperation are appropriately applicable to where organizational activities (i.e., support functions) are the object of integration. Recall that in the description of integrated delivery systems the focus is to move patients along a continuum of care. Formal coordination that takes the form of standardization can help make these exchanges more efficiency. At the same time, while these multiple organizations may be interdependent they may also have conflicting goals which can create discontinuities along a continuum of care. Informal relationships between employees may be necessary to bridge these gaps where organizations are out of alignment to ensure that patients continue to move along this continuum (*citation*). This aspect of organizational operations is best described by the dimension of cooperation. As a final note, while these interactions may cross organizational boundaries the object of integration does not necessarily shift to the organization itself because these interactions are primarily limited to interactions between support functions while the organizations themselves maintain their structural distinction.

Coordination is most representative of where service delivery activities are the object of integration. Recall that in the definition of integrated patient care the focus is on the coordinated development of treatment and other service plans to help ensure the coordinated delivery of these services. Whereas integrated delivery systems require interactions between support functions to ensure a patient is able to move along a continuum, integrated patient care requires interactions between providers to ensure that treatment and other service plans are similarly continuous along a continuum

of care. Because of professional standards these relationships necessarily take on a more formal arrangement and, thus, are better described by the dimension of coordination.

Combining all of these factors, Figure 3 presents the resulting framework. A similar justification can be made for the final layout of Figure 3 as was made in the development of Figure 2. The arrows point towards integrated service delivery activities because, as Shortell et al. (1996) argue, this is where value is created for the patient, community, and payer. Also, the achievement of integrated service delivery activities is implicitly the goal of many integrative efforts as pointed out by Singer et al. (2011). This is why this aspect of integration plays such a prominent part in the framework presented in Figure 3. When developing the framework in Figure 2 it was postulated that inter-organizational integration and the integration of organizational activities separately affect the integration of service delivery activities. These components of the original framework have been layered over with centralization, for organizational integration, as well as coordination and cooperation, both for integration of organizational activities. The simultaneous separate and joint consideration of these three dimensions is beneficial to a more comprehensive understanding of integration because their cumulative effect may not be additive.

In addition to showing the relationship between the various, often separately discussed, components of integration as well as illuminating the multi-level dynamics that enable or hinder the achievement of integrated patient care, the holistic nature of this framework lends itself well to analyzing the performance of health care enterprises with regard to the integration of their operations. The multiple data points, represented by the different components in Figure 3, allow for multiple correlations to be drawn with various performance measures. For instance, a single component of the model could be correlated to a specific performance measure, or various combinations of components could be correlated to a specific measure. The following section will explore the concept of performance measures in healthcare, with a particular emphasis on how they relate to the framework presented in Figure 3, more thoroughly.

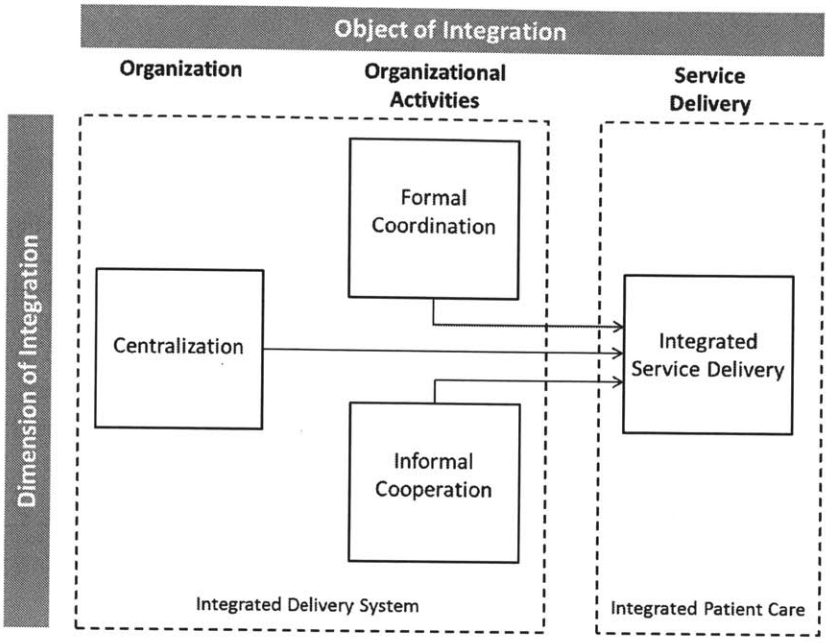

Figure 3: Multi-level, multi-dimensional framework of integration

Performance Metrics for Health Care Enterprises

Before discussing the connection between integration and enterprise performance this section will provide a brief background on the theory of organizational performance and how we can shift the focus from the organization to the enterprise – specifically, a health care enterprise. This overview is based, in part, on the literature review on enterprise performance measures written by Fradinho (2011) in his PhD dissertation at MIT.

To begin, Fradinho (2011) notes that there are a number of theoretical approaches that have emerged for understanding organizational performance and effectiveness. The *goal attainment* approach defines effectiveness in terms of the degree to which an organization attains internally defined goals (Etzioni, 1964; Perrow, 1961). The *systems resource* approach focuses on the interaction between an organization and its environment, whereby effectiveness is determined by the organization's ability to acquire scarce and valued resources from the environment (Yuchtman and Seashore, 1967). The *multiple constituency* approach defines effectiveness in terms of an organization's ability to satisfy multiple constituencies and is meant to addresses a shortcoming of the *goal* and

systems resource approaches which, directly or indirectly, consider an organization's owner or its top management as the most relevant constituency (Tsui, 1990). Finally, the *reputational* approach, which constitutes a specific stream of the *multiple constituency* approach, defines effectiveness as a measure of opinions of key individuals (e.g. clients, staff, service professionals) who are familiar with the organization under consideration (Jobson & Schneck, 1982).

These various approaches lead to a number of different operational definitions of performance metrics. Venkatraman and Ramanujam (1986) present a conceptual framework classifying these various business performance metrics into three dimensions. This framework is presented in Figure 4. The innermost ring in Figure 4 represents the narrowest but most dominant conception of organizational performance. It relies on simple outcome-based financial metrics (e.g. sales growth, earnings per share, and return on investment) that are meant to reflect the attainment of organizational goals. The next ring outward represents an increasingly prevalent approach that leverages both financial and operational metrics (e.g. product quality, technology efficiency, and marketing effectiveness). The operational metrics, however, are still thought of as key factors that might lead to financial performance which remains the dominant organizational goal. The outermost ring represents the broadest conceptualization of organizational effectiveness which includes financial and operational metrics as well as metrics representative of other stakeholder values that go beyond the financial wellbeing of an organization (Fradinho, 2011).

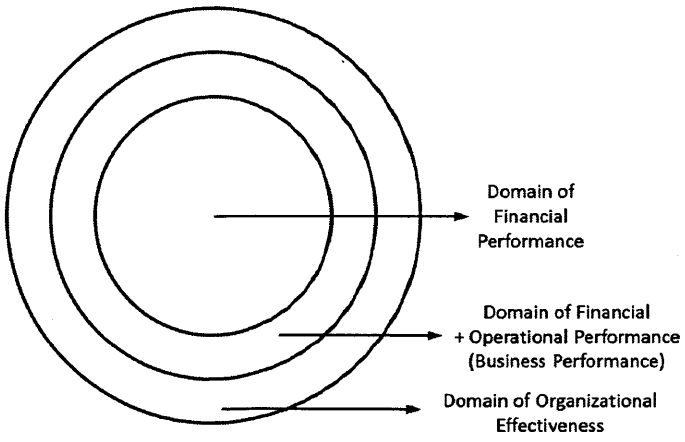

Figure 4: Dimensions of business performance metrics [Adopted from Venkatraman and Ramanujam (1986)]

While the dimensions of performance presented by Venkatraman and Ramanujam (1986) present a useful framework for thinking about the performance of health care organizations, the specific examples of performance metrics Fradinho (2011) presents (e.g. sales growth, earnings per share, and return on investment) might not be as useful as they seem more appropriate for organizations in different sectors. Goes and Park (1997) make a similar argument in their discussion of inter-organizational links and innovation in health care. The authors recognized that that the structure and character of inter-organizational ties in the health care sector differ from what is presented in the generic management literature and concluded that having definitions particular to a specific sector is reasonable. It seems to follow that the same argument can be made for measures of organizational effectiveness in health care. Along these lines, there have been some authors who consider the search for a universal theory of organizational effectiveness to be fruitless (Kanter & Brinkerhoff, 1981; Goodman, Atkin et al., 1983) which further supports the idea of metrics that are specific to health care.

Expanding beyond the concept of organizations, Provan and Milward (1995) present an argument for metrics focusing on *enterprise*[1] performance that, moreover, are specific to the health care sector. The authors argue that enterprise outcomes are especially important in the public and not-for-profit sectors, such as health care, where a public interest motive is involved. Along these lines Martin et al. (2007) recommend the definition of a small set of high-level, enterprise metrics that are capable of bringing a systems perspective while also complementing the traditionally large sets of highly specific measures used by hospitals and other service organizations. To this end, three general categories of metrics presented in the literature are *efficiency* (i.e., costs), *quality*, and *access* (Fradinho, 2011; Goldman & McGlynn, 2005). These metrics best support transformation towards an effective enterprise – rather than effective organizations – when they are measured across multiple organizations

[1] Provan and Milward (1995) use the term network which is similar to the conception of enterprise used in this study. Enterprise boundaries could easily be drawn to include all of the entities that Provan and Milward consider to be a part of the network.

and take the entire enterprise as their purview. Because of the complexity and interconnectedness of enterprises, localized metrics that lead to localized transformation may result in islands of success that can actually sub-optimize the enterprise as a whole (Nightingale, 2009), which is why it is important to capture enterprise-level metrics.

Turning our attention back to integration, a description of these three categories of enterprise-level performance metrics can be drawn from a new organizational form that strives to ensure the coordinated delivery of care – Accountable Care Organizations. The Center for Medicare and Medicaid Services (CMS) describes the Accountable Care Organizations and their resulting benefits as "groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care... Coordinated care helps ensure that patients, especially the chronically ill, get the right care at the right time, with the goal of avoiding unnecessary duplication of services and preventing medical errors" (Center for Medicare and Medicaid Services, 2012). From this description we can see the following: *access* – ensuring patients have the ability to get care in a timely manner; *quality* – ensuring patients get the right care at the right time while avoiding medical errors; and *efficiency* – avoiding the unnecessary duplication of services.

While highlighting the interconnectedness of integration and performance, this description also shows why it is important to consider these metrics from the perspective of the enterprise and not an individual organization or unit. Because health care enterprises comprise a set of interdependent and interconnected organizations, enterprise performance is not merely the summation of the performance of individual organizations (Nightingale, 2009). Rather, it is a result of their collective efforts (Provan, Fish & Sydow, 2007). Consider the following examples for each category:

- **Access:** One unit in a hospital works to increase access to its services. Other units of the hospital and other support services do not make similar increases, and, as a result, waitlists become longer in these other areas. The overall access of the enterprise has not increased.

- **Quality:** One unit of a hospital works to improve the quality of outcomes with regards to the particular ailment it treats. This entails the delivery of a new type of service to patients which results in higher quality outcomes according to what that hospital unit measures. However, this new service actually decreases the quality of outcomes for services offered by another hospital unit that is unfamiliar with the changes that have been made. The effect on the overall quality delivered by the enterprise is questionable.
- **Efficiency:** One unit of a hospital works to streamline its processes to increase its efficiency. It determines that one procedure is not necessary for the patients it sees and eliminates it. Many of the patients seen in this unit, however, also are seen in another unit of the hospital. The procedure that was eliminated had clear benefits to the other unit in question. Now, this unit has to expand the procedures it does which requires more net resources thus reducing the overall efficiency of the enterprise.

Integration and Performance

Recall the trends in the integration literature captured in Table 2. Much of the early work was focused on the determinants and consequences of inter-organizational relations (Sofaer & Myrtle, 1991; Oliver, 1990) while subsequent efforts focused on identifying and categorizing different types of integration primarily focusing on inter-organizational relations (Nolte & McKee, 2008; Horwath & Morrison, 2007). In their review of the literature, Glover, Naveh, and Carroll (2012) point out that only limited attention has been paid to the impact of integration on enterprise performance despite its acknowledged importance (Davis, Eisenhardt & Bingham, 2009; Sinha & Van de Ven, 2005).

Where it has been considered, there is a growing body of evidence linking integrated delivery systems with better quality and efficiency. Goes and Park (1997) point to several studies where inter-organizational ties have led to higher group performance (Thomas & Trevino, 1993; Schopler, 1987; Van

de Ven & Walker, 1984). Gittell and Weiss (2004) found that more cross-organizational rules and procedures support enterprise quality. Provan and Milward (1995) found that more enterprise authority and control in mental health systems led to improved overall network effectiveness as measured by higher client and family satisfaction. Singer et al. (2011) note that there is evidence to suggest that recent integrated care initiatives such as the Chronic Care Model and the Patient-Centered Medical Home improve health outcomes (Coleman et al., 2009; Homer et al., 2008). Tollen (2008), in reviewing a number of studies connecting quality and efficiency outcomes with the presence of physician groups, highlights several studies that suggest a link between integrated delivery systems and improved performance in certain areas which are presented in Table 5.

One common feature that Glover, Naveh, and Carroll (2012) point out about the theoretical and empirical works attempting to link integration and performance is that they generally suggest that more of any given integration activity is better. This insight draws on the notion that integration can be viewed as a continuum. This concept is referred to in different ways by different authors, but the underlying concept is the same – integration can be implemented to varying degrees. Sofaer and Myrtle (1991), in their review of inter-organizational theory, present the concept of integration as a continuum of multi-institutional arrangements that vary by level of commitment to cooperative action (Fottler et al., 1982) and another concept of a continuum where inter-organizational relations vary between cooperative relationships and mergers (Akinbode & Clark, 1976). Nolte and McKee (2008), in their review of health care research concerning integration and chronic care, present this continuum as ranging between full integration where a single organizations is responsible for the full continuum of care (including financing), to coordination between organizations that retain their own service responsibility and funding criteria (Leutz, 1999). Horwath and Morrison (2007) extend this continuum to

include informal relationships. Brass et al. (2004) observe that relationships along the continuum of integration can take a number of different shapes: strategic alliances, communication, friendship, work flow, influence/advice, and overlapping group membership.

These various conceptions of a continuum point toward two insights that are important to consider with respect to integration and performance. First, different integration mechanisms can represent varying degrees of integration. Second, individual mechanisms themselves can be implemented to varying degrees. For example, the degree of integration represented by a cross-functional meeting varies depending on how regularly such a meeting is held. In addition to the *object* and *dimension* of integration, the degree of integration is a useful measure when analyzing the relationship between integration and performance.

Table 5: Studies finding a connection between integrated delivery systems and performance (Adapted from Tollen (2008)]

Source	Finding
Mehrotra, Epstein & Rosenthal (2006)	Integrated medical groups (IMGs) more likely than independent practice associations (IPAs) or hybrids to have an electronic medical record and to use more quality improvement programs. IMGs had higher HEDIS-like scores than IPAs on four preventive measures but not on two chronic disease measures.
Parkerton, Smith & Straley (2004)	Within a single, large, multispecialty group, primary care practice coordination (measured by shared practice, team tenure, and medical clinic size) is associated with beneficial outcomes in cancer screening in women, diabetic management examinations, and patient satisfaction.
Feachem, Sekhri, & White (2002)	For approximately same cost per person, integrated Kaiser Permanente achieved better performance in several quality areas than did the British National Health Service (characterized by sharp budgetary and organizational divisions between primary and specialty care and between inpatient and outpatient care). Authors attribute Kaiser's better performance to "integration throughout the system."
Ham et al. (2003)	For 11 leading acute causes of hospitalization for people 65 and over, bed-day use in the British National Health Service was three-and-a-half times that of Kaiser Permanente's standardized rate.
Sterns (2007)	In seven out of nine measures, chronically ill patients receiving care in 14 specific integrated delivery systems used fewer physician resources in the last 24 months of life than did chronically ill Medicare patients nationally. Integrated delivery system patients also used 18 percent fewer hospital days and 34 percent fewer ICU days in the last 24 months of life than their national counterparts. Total physician and hospital spending for patients in integrated delivery systems were 24 percent and 2 percent less, respectively, vs. other settings.

The notion that more of any given integration activity is better is starting to shift with the emergence of some studies that have found a negative impact of integration on the achievement of certain enterprise goals (Leiponen & Helfat, 2011; Jansen et al., 2009; Davis et al., 2009). There have also been a small number of studies suggesting that there is an ideal degree to which a particular integration dimension should be pursued (Davis et al., 2009; Sinha & Van de Ven, 2005). Table 6 presents an overview of these studies along with the integration dimension of focus. We believe that the move towards seeking the ideal degree of integration is appropriate and that this descriptive characteristic of integration should be a part of the framework linking the various the *objects* and *dimensions* of integration to performance.

Table 6: Examples of contradicting findings from the literature concerning degree of integration

Conclusion	Centralization	Coordination	Cooperation
More of a particular integration dimension is better	**(Provan & Milward, 1995):** More authority and control is suggested **(Pisano, 1994)**: A highly interconnected structure is suggested	**(Gittell & Weiss, 2004):** Cross-organizational high-performance work practices (e.g., rules, meetings, rewards, performance metrics) are suggested **(Sinha & Van de Ven, 2005):** Use of cross-functional methods is suggested **(Okhuysen & Bechky, 2009):** Mechanisms (such as routines, meetings, plans, and schedules) that support accountability, predictability, and shared understanding are suggested **(Jansen et al., 2009):** Use of cross-functional interfaces is suggested	**(Gittell & Weiss, 2004):** Supporting communication between employees is suggested **(Jansen et al., 2009):** Social interaction among various team leaders is suggested
Less of a particular integration dimension is better	**(Leiponen & Helfat, 2011):** Decentralization of certain activities such as R&D is suggested **(Jansen et al., 2009):** Structural differentiation to support ambidexterity is suggested	**(Davis et al., 2009):** A strategy of simple rules is suggested	---
There is an ideal balance of a particular integration dimension	**(Davis et al., 2009):** Amount of centralization depends on environ-mental dynamics **(Sinha & Van de Ven, 2005):** A balance of modularity and hierarchy is suggested	---	---

A final characteristic of integration to be considered in relation to performance is that of *breadth*, which has generally been referred to in the literature as the number or range of services provided along a continuum of care (Nolte & McKee, 2008). One of the predominant views of integration in the literature is that of a dyadic relation or, in other words, a relationship between only two entities. Provan and Milward (1995) attempt to move away from this perspective by taking a network perspective in their research, but the network is ultimately constructed of various services that are individually linked to one another. What this misses is integrative efforts that can span across multiple organizations. Conrad and Shortell (1996), in their discussion of "virtual" and vertical integration, acknowledge that multiple organizations can be brought together either by contractual arrangements or by direct ownership. Provan (1984) points toward multimember organizations such as federations as another operationalization of this concept. Both of these approaches, however, focus on the organizational level, and do not discuss the issue of breadth in terms of organizational activities and service delivery activities. Multidisciplinary teams, for example, while never specifically referred to in terms of breadth, represent a broader form of integration at the service delivery level. For these reasons, *breadth* is another useful measure when analyzing the relationship between integration and performance and should be a part of the framework linking the various *objects* and *dimensions* of integration to performance.

The emerging challenge to the notion that more integration is always better, along with the fact that relatively few studies have considered the impact of integrative activities on specific performance dimensions, reinforces the need for the simultaneous consideration of multiple integration dimensions, objects, and performance measures. Such an approach will help reveal the potentially complementary, contradictory, and even counterintuitive effects of the these various forms of integration on separate performance dimensions (Glover, Naveh & Carroll, 2012). Figure 5 presents the comprehensive framework relating all of the various factors discussed in this chapter.

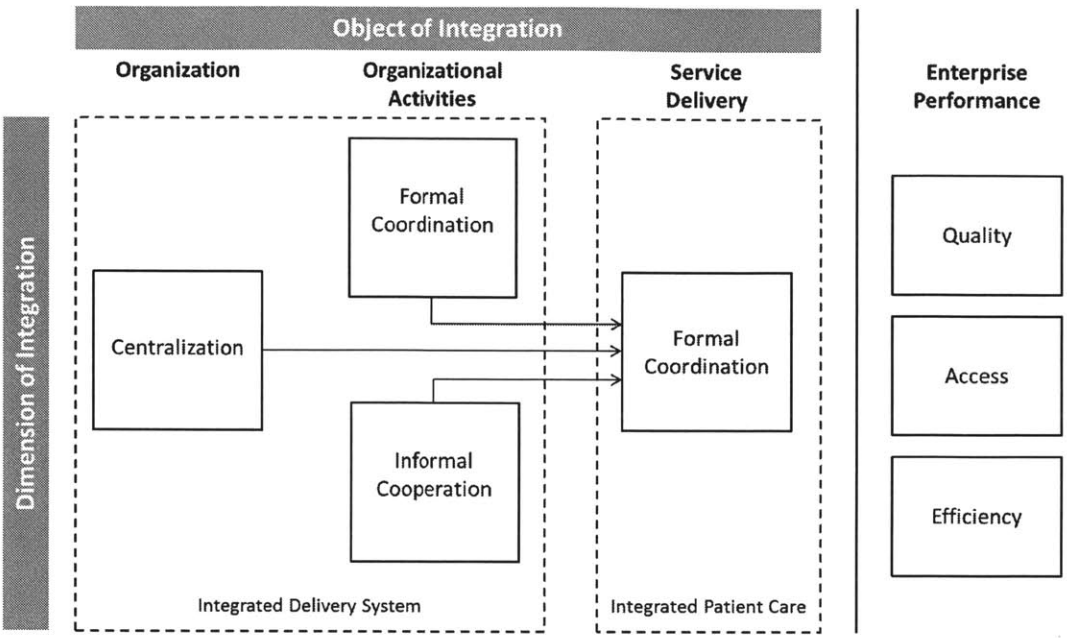

Figure 5: Comprehensive framework for considering integration and enterprise performance

Chapter 3

Research Methods

As stated in Chapter 1, one of the primary objectives of this research is to use qualitative data to build a set of testable propositions about the cross-level dynamics of integration within an enterprise and the relationship between integration and the three dimensions of enterprise performance – quality, access and efficiency. This research is meant to build theory (Eisenhardt, 1989) through qualitative inquiry involving the observation and description of the various dimensions of integration and performance for large health care enterprises with one goal being to guide future quantitative research efforts.

Qualitative research is a means of studying a particular phenomenon of interests that takes a holistic, representational approach collecting rich, descriptive data that accounts for multiple perspectives (Rossman & Rallis, 2003; Miles & Huberman, 1994). Qualitative research is noted as an effective means of examining highly-varied phenomena (Grutter et al., 2002). Because the use of integrative mechanisms in large-scale health enterprises appear to vary greatly, qualitative research methods appear especially appropriate for this study. Further, qualitative methods are identified as particularly effective to help develop theory in areas with limited academic literature (Miles & Huberman, 1994; Eisenhardt, 1989), which is the case with regards to the relationship between integration and enterprise performance in health enterprises (Provan, Fish, & Sydow, 2007). Towards this end, this research uses a field study design, collecting data from two sites. The following sections describe the research methods used to collect and analyze data.

Site Selection

There are many factors that contribute to the complexity of how a military installation delivers comprehensive behavioral/psychological health services. First is the nature of behavioral and psychological health itself. This fact is illustrated by the Resilience Continuum model (see Figure 6) which was developed by the Defense Center of Excellence (DCoE) to emphasize the various states of behavioral and psychological health. Different types of services are needed to target the various states along this continuum. The bottom of the figure highlights that these services may be clinical or non-clinical in nature and that varying degrees of each type of service are needed at different states. The result is that these services not only need to coordinate with other services targeting a specific state of the continuum but also need to coordinate with services upstream and downstream along the continuum. This leads to the second complicating factor.

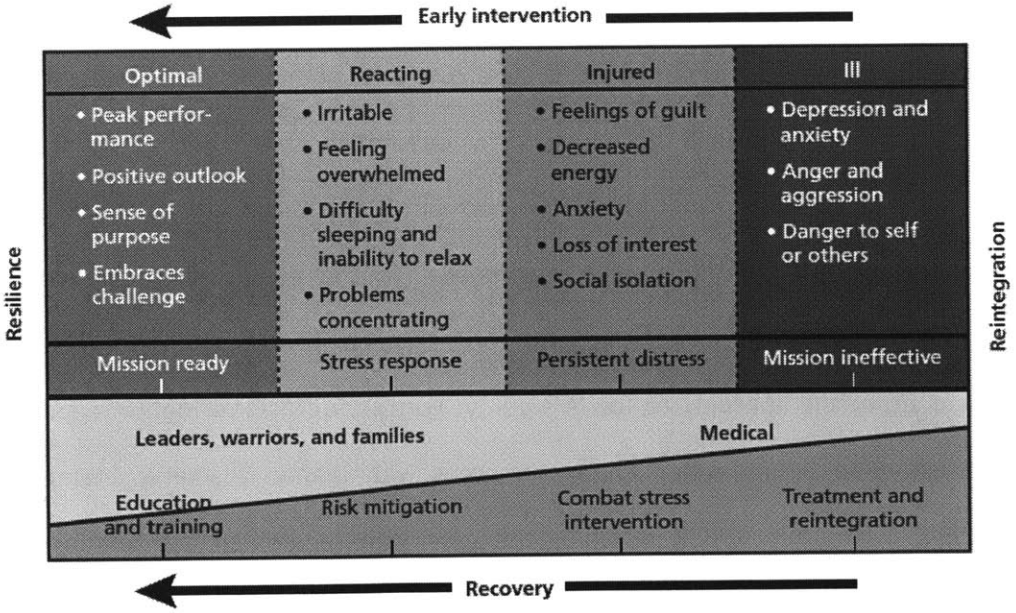

Figure 6: DCoE Resilience Continuum

The second complicating factor stems from the fact that, in the military, there are multiple command structures that govern various aspects of the care continuum. In a simplified model, there is a command structure focused on preparing service members to carry out battle operations and a command structure focused on running and maintaining military installations. We refer to these as the "line command." There is also a command structure focused solely on providing health care which we refer to as the "medical command." Different types of behavioral and psychological services are offered within each command structure, but coordination between them can be complicated because of different incentives and missions. In addition to this there are also community organizations that provide additional and supplementary services. These organizations, which also have their own missions, are characterized by being outside the control of any military personnel even though some of them are, in fact, funded by the military (e.g., Military OneSource).

These two factors combined create a complex situation; there are many potential collaborative arrangements possible in providing a full continuum of care for service members. While this complexity is a fact of life for many military installations, it can actually hinder the development of robust, testable propositions. Selecting sites with reduced complexity will allow us to do a more thorough analysis of the integrative mechanisms that are present and their impacts on both cross-functional dynamics and enterprise performance. While this complexity will need to be taken into consideration when performing a full analysis of enterprise operations, it is not necessary to achieve the purposes laid out for this thesis.

Towards this end, we narrowed our selection of sites to medical campuses. This reduces the complexity both in terms of command structure and the quantity of services offered. On a medical campus, services tend to be more clinical in nature which concentrates them towards the right half of Figure 6 which, to some degree, reduces the extent of the spectrum along which programs must be coordinated. While there was still differentiation among the programs coordinated at these medical

campuses, future research should consider examining locations that include a more diversified set of programs and services. Doing so will further our understanding of Lawrence and Lorsch (1967) and the impact of this differentiation on integration and performance.

At medical campuses, the services offered are primarily accountable to the medical command. These campuses may still host some services operated by the line, but that command structure has much less of a presence at these locations. The overall operations of a medical campus are driven by medical interests whereas the operations of a force projection installation are driven by multiple commands that have a variety of goals both medical and operational. While the choice of medical campuses may limit the generalizability of the findings to force projection installations, it may, in turn, increase the generalizability of the findings to civilian healthcare organizations.

Based on this line of reasoning two Naval medical centers were selected to investigate for this study. These two locations are referred to in this thesis as Site H and Site I. The sites selected are from the same service of the military (i.e., the Navy) so that there is a similar culture underlying their operations. Also, due to time limitations, only two sites were selected so as to ensure the ability to do a thorough analysis of each site. Future research should consider the inclusion of additional sites.

Data Collection Instrument

This section presents the interview guide that was used in this research as well as a second interview guide that was developed and is recommended for future research. In particular, this section focuses on the process by which these interview guides were developed and refined as well as the type of information they seek to collect. The interview guide that was ultimately used in this research can be found in Appendix B. The proposed interview guide can be found in Appendix C.

Both data collection instruments were developed in two primary steps. First, questions were formed around the major concepts identified in the literature review. In particular, other empirical

studies were consulted to identify the methods by which the authors approached certain conceptual topics. Second, these questions were refined based on an initial set of interviews we conducted with different members of the military leadership. These initial interviews were aimed at understanding the boundaries and current state of the enterprise dedicated to delivering psychological and behavioral health services. The interviews gave us a better understanding of the military culture as well as issues that were of particular importance to military leaders – both of which helped us to refine our interview questions to best fit the military context.

From the literature, *dimensions* of integration is one of the major concepts incorporated into the first interview guide. The question "Would you provide examples of the topics that are being coordinated in your unit?" is meant to address the dimension of coordination *within* a particular organization. The question "What other units or organizations do you coordinate with?" is meant to address the dimensions of coordination and cooperation *between* organizations. The questions about the particular integrative mechanisms used and the information exchanged during these interactions are also meant to address the dimensions of coordination and cooperation. The dimension of centralization is addressed by a couple of questions: first, "Is there a central or core organization that facilitates the coordination of these various groups that provide programs and services?" and, second, "What other units or organizations do you coordinate with?" The second question is meant to help in the construction of a network diagram much like in Provan and Milward (1995). Finally, the question about frequency of interaction is meant to address the concept of integration as a continuum with varying degrees.

Questions from this first interview guide also focus on the policies that support or hinder integration, the benefits and drawbacks of integration, and the metrics by which organizations measures performance. Questions also focus on the relationship of military organizations with purchased care and community organizations. This was an important theme identified in our initial round of interviews with military leadership. To view the complete list of questions as well as their sequencing, the first interview guide in its entirety can be viewed in Appendix B.

The second, proposed interview guide was developed after the completion of the framework presented at the end of Chapter 2 which relates the concepts of objects and dimensions of integration (see Figure 5). The interview guide is separated into three groups of questions: intra-organizational coordination, inter-organizational coordination and cooperation, and centralization. In addition to this, several other items were included in addition to the themes highlighted by the initial interview guide. In the first section, questions about coordination inquire into the role that patients can play in the decision making process. In the second section, questions specifically address organizational activities as an object of integration as well as cooperation as a dimension of integration. In general, an effort was made with the questions in this interview guide to make a more clear distinction between objects and dimensions of integration.

Another refinement made to the initial interview guide is that questions try to be more specific. As an example, in addition to asking questions that try to identify particular mechanisms, questions are also asked to understand how these mechanisms actually work. Often there are a series of questions to address a specific concept. With regard to inter-organizational integration, one series of questions goes as follows: "With regard to decisions about treatment or other service plans, is there a joint decision making process? If so, who is involved? Are there clearly defined steps? Does everyone have an equal voice?" Examples of particular mechanisms are also provided in case an interviewee is unfamiliar with some of our terminology.

The second interview guide, since it was developed after the completion of the framework presented in Figure 5, asks questions specifically about the cross-functional dynamics of integration. As an example, under the section on centralization the following question is asked: "How does this structure impact the coordination of services to service members?" Specific questions are also asked about the impact of particular integration dimensions on *enterprise* performance. The previous interview guide did not make a clear distinction between organizational and enterprise performance. As an example, under the section on inter-organizational integration the following question is asked: "How

does this external coordination impact your organization's performance in terms of quality, access, or cost? What about your *shared* performance?"

Data Collection Process

Before conducting the interviews used in this study, preparatory work was done to identify the relevant organizations and programs at a particular base and to do background research on them where possible. In determining the criteria for the services to be included in this study we took a similar approach as Provan and Milward (1995) in their study of network effectiveness for four community mental health systems. Citing the approach taken by Laumann, Marsden, and Prensky (1983), the authors include in their study agencies that provide either a direct service to the target population or funding to such an agency. Based on this criteria the organizations and programs identified as relevant to the Navy are presented in Table 7. Background research on each of these organizations and programs was conducted via a basic internet search as well as a review of the information compiled in a recent study by the RAND Corporation about the many programs that deliver behavioral and psychological services (Weinick et al., 2011).

At each site our primary point of contact identified the relevant organizations and program from Table 7. This person then helped set up as many interviews as practical with these organizations and programs. The interview guide presented in Appendix B was then used to conduct a set of semi-structured interviews with key stakeholders from each of these organizations and programs. The interviews were also used to collect any other information pertinent to the concept of integration. Each interview was conducted in a focus group arrangement, and the interviews were typically about 45 minutes in length with the longest one lasting no longer than one and a half hours. Further information about the organizations and programs interviewed along with the number of people present at each interview is presented in the case study for each of the sites which can be found in Chapter 4 and Chapter 5.

Table 7: List of relevant organizations and programs in the Navy

Clinical Organizations (i.e., Departments, Units, or Groups)	Programs
Behavioral/Mental Health	Assessing and Managing Suicide Risk (Contractor)
Branch Health Clinics	Automated Tools and Outcome Measures (DCoE)
Child and Adolescent Behavioral Health	Caregiver Occupational Stress Control Program
Deployment Health Clinic	Child and Youth Behavior Consultants
Health and Wellness/Readiness Department	Co-Occurring Disorders Program
Internal Medicine	CREDO
Primary Care	FOCUS
Substance Abuse	HeartMath (Contractor)
TRICARE	Military Child Education Coalition (Contractor)
Non-clinical Organizations (i.e., Departments, Units, or Groups)	Navy Alcohol and Drug Abuse Prevention Program
Chaplaincy	Navy Command Level Suicide Prevention Program
Family Advocacy Program	Navy MORE Program
Fleet and Family Services	Navy Safe Harbor
Military OneSource	Re-Engineering Healthcare Integration Programs (DCoE)
Navy Operational Stress Control	Sexual Assault Prevention and Response Program
NCCOSC	Virtual Reality Graded Exposure Therapy
Social Work	

Note: Some items have been removed to preserve the identity of the sites.

During the interviews, we emphasized that responses should only be given with respect to the handling of behavioral and psychological patients (Provan & Milward, 1995). This clarification was important since a number of the organizations and programs included in our research either offered non-behavioral or psychological health services or maintained working relationships with such organizations and programs. Ideally, each of these interviews would have been conducted with the head of the organization or program and at least one person responsible for the delivery of the service. This would have provided both a managerial and an operational level perspective providing a more

robust picture of the service/program/department. However, the selection of participants was limited by participant availability. A full description of the groups interviewed at each site is described in Chapters 4 and 5.

In addition to interviews with the relevant organizations and programs we also conducted an interview with one person, typically the installation commander, who had a higher level perspective over multiple organizations and programs. This interview was intended to provide information about the overall performance of the installation and, potentially, alternative insights on how organizations and programs work together. Having these three perspectives on an organization or program allowed us to triangulate and develop a comprehensive picture of that organization or program and the system in which it was embedded.

Data Analysis

All interview data was captured in the form of handwritten notes. Subsequent to each interview, these notes were typed and compiled for all interviewers. After this process, the compiled interview notes were sent to a key point of contact from each organization or program interviewed to allow them to suggest any changes. We also followed up with individual interviewees by phone to clarify any uncertainties we had about particular comments. Upon the return of these edits all of the interview data for a particular site was broken down into the individual points that were made during an interview. All of this information was then uploaded into an Excel file in order to begin the coding process.

This analytical process followed the approach established by Miles and Huberman (1994). The authors suggest that analysis should begin with a conceptual framework which, in our case, is the framework presented in Figure 5 which is based on major concepts identified in the literature. The authors then ague that it is acceptable to gradually modify, eliminate, or add codes as they emerge from

the data. In our analysis, specific codes were based on our analysis of the interview data while the major themes, in which these codes existed, were based on the literature. The approach outlined by Miles and Huberman (1994) allows for empirical flexibility while still being faithful to established theory.

In coding our interview data, each of the individual points was analyzed for the general theme it represented (e.g., coordination, cooperation, and centralization). Each theme, then, had general categories associated with it (e.g., coordination: quality, access, efficiency, mechanisms, and frequency). Each category, then, had specific codes associated with it (e.g., coordination – mechanisms – multi-disciplinary teams: The data point made a reference to the use of a multi-disciplinary team as a means of coordinating providers). Appendix A has a full list of the codes used in this analysis and their associated definition.

In doing the analysis, only one researcher coded the data due to time constraints. Ideally, at least two researchers would independently code the data, and any discrepancies would be discussed. The coding would then go back and forth between the researchers until there was a certain level of agreement between their codes. The limitation of only having one researchers code the data is that it allows for individual bias. There are certain themes or codes that a second researcher might identify that were not obvious to the first.

To make up for this shortcoming, the researcher doing the coding did an initial set of coding for one set of interviews in order to develop a preliminary set of codes. The interview was then coded a second time to ensure that all codes that were developed were applied where appropriate. Next, the researcher coded the second set of interviews using the set of codes that had been developed for the first set of interviews. During this initial analysis of the second set of interviews several new codes emerged. So, the second set of interviews was coded a second time to ensure that the expanded set of codes were applied where appropriate. Finally, the first set of interviews was re-coded using this expanded set, and the second set of interviews was re-analyzed to ensure proper coding. These multiple iterations allowed for new insights to be captured when the researcher re-visited a set of interviews.

The results of this analytical process are presented for each site. The information is categorized according to theme, category, and code, respectively. In order to develop testable hypotheses each case is individually analyzed in terms of the cross-functional dynamics and relationships between different dimensions of integration and performance. Data from both sites is then compared to illuminate further insights (Eisenhardt & Graebner, 2007). In addition to comparing the cross-functional dynamics and the relationship between integration and performance, comparisons were also made between the perceptions of representatives from similar organizations where applicable (e.g., between representatives from the Behavioral Health Department at each site). Comparisons were also made between codes in a particular category (e.g., coordination – mechanisms) to look for similarities and differences.

Chapter 4

Site H Findings

Site and Data Overview

Site H is a multi-specialty Naval medical center that stands separate from any Naval base and serves patients from all services. Since it is not attached to a base these patients only stay on site for a temporary time during the course of their treatment. Site H sits on over 200 acres and houses over 75 buildings. The site hosts approximately 27,000 unique patients per year. There are over 250 beds and approximately 4,500 professionals that work on site. Of these professionals, approximately 35% are enlisted, 25% are officers, and the rest are civilians.

Five group interviews were conducted at Site H with the site leadership and representatives from the Department of Behavioral Health, Integrated Health Services, the Integrated Trauma Service, and the medical research and care delivery facility. Integrated Health Services is a group within the Medical Home that combines traditional health care with behavioral health services. The Integrated Trauma Service is a group within the Department of Surgery focused particularly on trauma care. The medical research and care delivery facility is a group largely separate from the rest of Site H that treats the most complex cases involving the overlap between Traumatic Brian Inury (TBI) and Post Traumatic Stress (PTS) in order to advance research in this field. Interviews were conducted in a focus group

setting. The first set of interviews included representatives from all of the listed groups except the medical research and care facility. Nine people were in this interview group. The focus group that was interviewed for the medical research and care facility consisted of six people. Interviews were typically about 45 minutes in length with the longest one lasting approximately one and a half hours.

This section presents an analysis of these interviews that focuses on the general themes of centralization, coordination, cooperation, and patient and family involvement in the care process. Table 8 presents an overview of the data collected. Definitions for each of the categories and codes can be found in Appendix A.

Centralization

The theme of centralization was only brought up a few times in our interviews at Site H. In terms of mechanisms, one interviewee from the Integrated Trauma Service noted that "there is one final *decision maker* despite the presence of many consultants." In other words, there was a structure of authority surrounding decisions on a patient's treatment plans. Another interviewee noted that *forecasts* of patient demand was a task done centrally and distributed to different organizations. While these *forecasts* are actually done for the entire branch of the military, this is still in line with the scope of our study because, if we look at Site H in particular, we can consider this a centralized feature of the base.

In other instances where the theme of centralization was brought up in our interviews the focus was more on a lack of centralization. One interviewee noted that the American Psychological Association (APA) diagnostic tools will be under review after the publication of the next Diagnostic and Statistical Manual of Mental Disorders (DSM). The interviewee viewed this as a good opportunity for a deputy commander or physician leader, in other words a single *decision maker*, to bring all of these various tools together. This person, then, could exercise their authority to ensure the *standardization* of the diagnostic tools used by all psychological health providers across multiple departments and programs.

Table 8: Codes for data collected from interviews at Site H

Theme	Category	Code	# Int.	# Ref.
Centralization	Care decisions	Decision maker	1	1
	Mechanism	Forecasts	1	1
Centralization, lack of	Access	Negative impact	1	1
Cooperation	Climate	Positive	2	2
	Facilitator	Shared goals	2	2
Coordination	Access	Positive impact	2	5
	Background	Group relations	2	2
		Stigma	1	1
	Challenge	Financial	1	2
		Stigma	1	1
	Creating space	Coordinating program	1	1
		Joint unit	1	1
	Efficiency	Positive impact	2	3
	Frequency	Weekly	2	3
	Mechanism	Consultant	2	4
		Coordinating program	1	1
		Embedded provider	1	4
		Inter-disciplinary team	1	4
		IT system	1	1
		Joint unit	1	1
		Meeting	2	2
		Multi-disciplinary team	3	7
		Nurse navigator	1	1
		Planned hand-off	1	1
		Referral	3	4
	Patients & families	Family-centered	2	4
		Patient-centered	1	5
	Potential mechanism	Financial	1	1
		Metrics	1	1
		Patient advocate	1	1
		Shared goals	1	1
		Shared measures	1	1
		Standardization	1	1
		Standards	1	2
	Quality	Positive impact	3	4
	Reason for	Comorbidities	4	4
		Conflicting treatments	2	2
		No shows	1	1
		Time	1	1
Coordination, lack of	Challenge	Conflicting treatments	1	1
		HIPPA	1	1
	Group relations	Community organizations	1	1
		Purchased care	1	1
	Quality	Negative impact	1	1

In our interview with members from the medical research and care delivery facility a couple of comments focused on the "disaggregated" nature of care at places other than this facility. The interviewees, however, did not mention specific examples, and, since many patients come to Site H from other bases, it is probable that this comment was intended for operations at those locations. One interviewee noted that it may be difficult at locations other than this facility for patients to find a single point person to contact. This lack of centralization was blamed for the difficulty in coordinating care at these other locations. This lack of centralization was also seen as having a negative impact on access in that the people responsible for handling a patient may not be aware of the various types of services available. This inherently limits the access patients have to different types of care.

Coordination

Formal coordination appears more than once in the framework presented in Figure 5. It is a dimension of integration that can involve both service delivery and organizational activities as the object of integration. This section, however, primarily focuses on coordination involving the delivery of services. A small sub-section presents the mechanisms identified during our interviews relating to organizational activities as the object of integration.

Reasons for coordination

There were a number of issues raised by interviewees as reasons for coordination. One of the big reasons that several interviewees pointed out is that there are often *comorbidities* associated with behavioral and psychological health issues. As one interviewee pointed out, these cases require more complex treatments which require different types of providers to be involved. As an example of catering to these needs, one unit in the hospital was designed specifically for patients that have psychiatric issues associated with TBI. Another interviewee introduced a new term, Traumatic Stress and Brain Injury (TSBI), which similarly raises the theme of *comorbidities* Even when the primary issue for a patient is not

a behavioral health issue, the behavioral health issue is still very important to address. One interviewee from the Integrated Health Service pointed out that "the top five things that drive medical costs are all behavioral health related" which implies the importance of coordinating with behavioral health providers.

Time, or more particularly the lack of time, is another reason why different groups may coordinate. One interviewee noted that PCPs are required to ask a particular series of questions before prescribing sleeping medications since lack of sleep is one of the leading indicators of PTSD. However, the interviewee also noted that PCPs may only have fifteen minutes with a patient. If a PCP does not have enough time to ask the appropriate series of questions they will send their patient to a behavioral health consultant to complete this line of questioning. Other specialties support and encourage this coordination. One interviewee from the Behavioral Health department noted that PCPs tended to medicate because "medications are a proxy for time," yet this is only a short term solution.

Other reasons for coordination that were discussed in our interviews were the avoidance of *conflicting treatments* and the reduction of *no-show rates* (i.e., where a patient does not show up for an appointment). As for *conflicting treatments*, one interviewee noted that this can happen when there is a lack of coordination. Different providers, in an effort to address different medical issues, will propose treatment plans that can actually work against each other. This can also manifest in the mixing of medications. One interviewee noted that "we cannot just pile medication on top of medication. Can we be fully sure of how they interact?" As for *no-show rates*, another interviewee noted that for many behavioral health-related appointments there was approximately a 30% *no-show rate* which is why a stronger form of coordination was implemented. Though this may seem like a high number, the interviewee also pointed out that behavioral health was not special in this regards. Many specialties only see a 40-50% rate of people following up on referrals/consultations.

Mechanisms

Service Delivery Coordination

There are a number of different integrative mechanisms used throughout Site H. This sub-section discusses the various mechanisms associated with service delivery coordination that were identified in our interviews with various programs and organizations. The mechanisms identified by interviewees are: *consultants, embedded providers, inter-disciplinary teams, multi-disciplinary teams, nurse navigators, meetings, planned hand-offs, coordinating programs,* and *joint units*. As a general note, one interviewee observed that the Wounded, Ill and Injured program (WII) has the lead on behavioral health care at Site H. WII is a program under Navy Medicine to improve the care and treatment offered to service members and their families. In addition to having a focus on psychological health and traumatic brain injury services, WII promotes care coordination (Kass, 2011).

In our interview with the Integrated Trauma Service it was noted that this program takes a systems approach. As part of this approach the Integrated Trauma Service uses *multi-disciplinary teams* to coordinate different types of providers. Also as part of this systems approach, the Integrated Trauma Service coordinates clinical activities between services within the hospital and between different facilities. To do this, one interviewee noted that there are *weekly meetings* via teleconference with downstream and upstream partners to ensure smooth system functioning.

In our interview with the Department of Behavioral Health it was noted that everyone that comes to Site H for behavioral health reasons initially gets evaluated by a *multi-disciplinary team* comprising a psychologist, neuro-psychiatrist, addiction psychiatrist, neuropsychologist, and a health educator. This team meets *weekly* to decide the best treatment path for individual patients. *Multi-disciplinary teams* are also used by Behavioral Health in the diagnosis and treatment of patients. It was also noted during this interview that a *special unit*, the Inpatient-Traumatic Brain Injury (IP-TBI) Unit, was created particularly for patients that have psychiatric issues along with TBI. This *special unit* facilitates the coordination of different specialist by bringing them together in a single place.

At Site H, Integrated Health Services facilitates the delivery of behavioral health services in a primary care setting. It does this through the Behavioral Health Integration Program which uses an *embedded* behavioral health *consultant* in Internal Medicine to work with PCPs. The consultant typically provides 30 minute visits that may not necessarily result in a diagnosis, but will at least result in a *referral* to a behavioral health specialist. One interviewee noted that there were particular Current Procedural Terminology (CPT) codes that could be used for billing these types of behavioral health assessments which facilitated the relationship between consultants and PCPs. The Behavioral Health Integration Program is a sustained effort that helps create space for primary care and behavioral health to come together.

The medical research and care delivery facility at Site H makes use of several coordinating mechanisms. The facility makes use of *nurse navigators* to facilitate the progression of patients through different stages of the care process – evaluation, diagnosis, treatment, and out-processing. The facility also makes use of *inter-disciplinary teams*. One interviewee was very clear in noting that this approach is different than multi-disciplinary teams. In multi-disciplinary teams, different types of providers meet to discuss the progress of a case and the direction in which it needs to move in the future. All other interactions with the patient, though, take place in a one-on-one fashion. *Inter-disciplinary teams*, however, function as a team throughout the care process. They take the patient history as well as make assessments, diagnoses, and interventions as a team. One interviewee noted this structure encourages providers to take a holistic approach to the patient which, the interviewee noted, is different than the symptom management prevalent throughout the rest of the military health system. These *inter-disciplinary teams* are also different from many multi-disciplinary teams in that all the different types of provider belong to the medical research and care delivery facility – there is no coordination across different departments such as in a hospital.

At this facility these *inter-disciplinary teams* are headed by an internist – the type of physician specializing in internal medicine that often serves as a patient's PCP. This is done because, as the interviewee noted, upon discharge the patient is handed back over to their PCP. The internist helps ensure that the treatment plan will be executable by the PCP who is often located at another military base thus ensuring a more *planned hand-off.* Upon discharge, the *inter-disciplinary team* holds a *meeting* via teleconference with a patient's PCP to provide a detailed description of the case summary and treatment plan. This is one more step that is taken to ensure that the PCP can successfully take over and carry forward the treatment plan for a particular patient. One interviewee noted that the medical research and care delivery facility is also working on a follow-up piece to be able to assess gaps in care once patients leave.

The medical research and care delivery facility is functionally separate from the hospital at Site H. This functional separation from the hospital also allows the facility to take a different approach in terms of paying its providers. At this facility, providers are paid in aggregate rather than by RVU. While not a direct coordinating mechanism, this payment structure facilitates coordination by removing some of the incentives that can prevent providers from coordinating their efforts.

Organizational Activities Coordination

This sub-section discusses the various mechanisms associated with coordination or organizational activities that were identified in our interviews with various programs and organizations. The mechanisms identified by interviewees are: *IT systems* and *referrals*.

Referrals are a common way that different organizations coordinate at Site H. One interviewee observed that the overall site is a *referral* center for TBI across all of the military services. The medical research and care delivery facility similarly receives patients through *referrals* from other bases. Earlier in this section it was noted that Integrated Health Services facilitates the delivery of behavioral health services in a primary care setting through embedded behavioral health consultants. The consultant

typically provides 30 minute visits that may not necessarily result in a diagnosis, but will at least result in a *referral* to a behavioral health specialist. Another interviewee from Integrated Health Services noted that approximately 6 patients per week were sent to purchased care, or off-site care, through *referrals* and that most of these patients were family members.

The medical research and care delivery facility is functionally separate from the hospital at Site H. For this reason, one interviewee noted that the facility worked with MHS and Health Affairs to make sure it was incorporated into the larger *IT system* which is a technological platform facilitating coordination with other offices and providers. One of the first steps in the process when a patient arrives at this facility is to compile the patient history which is pulled from multiple sources.

Patient and Family Involvement

The involvement of patients and families in the care decision process is another aspect of the dimension of coordination with service delivery as its object (see Figure 5). This section presents the portions of our interviews that focused on this type of coordination between providers, service members, and their families.

At the medical research and care delivery facility, one interviewee noted that it is part of their process to integrate the patient into care decisions. The facility aims to give the patient power over how he/she is going to be treated. Otherwise, the interviewee noted, you lose compliance and interest from the patient. In this patient centric model, the interviewee noted that it is important that the patient knows what is going on in the treatment and what outcomes are expected. Moreover, the providers ask patients what is meaningful to them, and patients have an opportunity to provide feedback on what is working. The first four days of the patient being at this facility focus on the patient's awareness and validation of the treatment which allows the patient to provide a trajectory for recovery. The interviewee noted that tools are important to improve patient outcome, but this cannot be achieved without a personal relationship with the patient. In case the patient does not feel comfortable expressing his/her views directly to the providers, the facility also leverages its hospitality unit to serve as a patient advocate to ensure the patient's needs are being met as the patient desires.

Families are also an important element of care at this facility. One interviewee noted that this does not just mean families in the traditional use of the word. Unit buddies, for example, can come to support a patient. This is part of the facility's efforts to embrace families as part of a whole support system. In fact, one interviewee pointed out that the best view in the building was designed for the family.

In the hospital at Site H, families are also viewed as partners. When a service member arrives at Site H for treatment, families are immediately notified and involved in the care process. The interviewee noted that the hospital aims to provide family-centered care which is why families are allowed to be with service member undergoing care 24/7 which, the interviewee noted, is a paradigm shift in the world of health care.

Lack of Coordination

One interviewee from Integrated Health Services noted that approximately 6 patients per week were referred to purchased care, or off-site care, and that most of these patients were family members. Beyond the referrals, there is not much in the way of additional coordination. The interviewee noted that these cases typically were not followed. It was also noted that other service members sought off-base care on their own so as to avoid having their commanders know that they are seeking care. Another interviewee noted that many Marines get behavioral or psychological health care through their spouses' provider, and, as a result, there is *information loss* such that military providers and commanders may not know what medications these service members are taking. An accurate estimate of these numbers cannot be made because this information is largely hidden from military leaders and providers.

In this interview with Integrated Health Services it was also noted that there was a lack of coordination with many community organizations. Similar to purchased care, the interviewee noted that there was fear about losing information about individuals that receive care through community

organizations because there is not a lot of information that comes back to the medical providers. Military OneSource is one such example that was mentioned by an interviewee. While this organization is actually funded by the DoD it is operated independently much like other community organizations that have fully separate funding sources. When service members engage with Military OneSource they can get a Tricare authorization after six visits. All of this is outside of the control and the knowledge of that service member's active-duty military provider. Much of this lack of coordination is legally imposed or at least presumed to be legally imposed. The Health Insurance Portability and Accountability Act (*HIPPA*) is often referenced as a reason why patient information cannot be shared, but, as one interviewee noted, this law is not always interpreted correctly leading to information being needlessly withheld in some cases.

One last point was made in this interview as to why there is sometimes a lack of coordination. One interviewee noted that, oftentimes, "culture eats strategy for lunch" meaning that, even when it may be strategic for the improved operation of the overall system for organizations to coordinate their efforts, that historical, organizational culture can prevent or hinder this from happening.

Impacts on Performance

Throughout our interviews a number of references were made to the impact of coordination on the enterprise performance measures of quality, efficiency, and access. One interviewee from the Behavioral Health department noted that having varied expertise in the form of multi-disciplinary teams is beneficial to treating certain health problems that currently do not have an associated clinical practice guideline (CPG). In these instances, providers must make judgments under uncertainty, and the coordination of this varied expertise helps improve *quality*.

With regards to improving *access*, one interviewee noted that all patients get screened for TBI when coming to Site H for treatment. Another interviewee from Integrated Health Services commented that there is no reason to wait for self-identification with regard to PTSD. The Behavioral Health

Integration Program, which embeds behavioral health consultants into Internal Medicine, helps to identify these cases and increase *access* to care. This program also works to improve performance in other ways. Consider the following example offered by one interviewee:

> The number one indicator of PTSD is lack of sleep. As a result, many patients affected by PTSD will want to be prescribed Ambien to help them sleep. We can train PCPs to identify sleep problems, but there may not always be time to ask the necessary series of questions such as "When did the problem start? Is the problem related to deployment?" If the PCP does not have time to carry out the full line of questioning then they will not prescribe Ambien. Instead, they will send the patient to the behavioral health consultant to do a same day evaluation, and the behavioral health consultant will then write a prescription if appropriate.

The interviewee noted that it is important to ask these questions to determine whether or not a patient has PTSD and is in need of other treatment. The result of this is improved *access* and *quality*. The improved access comes from patients receiving care that they would not otherwise receive. The improved quality comes from reducing over-medication which was noted in several interviews as a concern. The interviewee also noted that this coordination has helped improve the quality of consults that are referred to the Behavioral Health department. The improved *quality* refers to more accurate and more descriptive referrals. The coordination of the PCP and behavioral health consultant, therefore, can improve enterprise *efficiency* in that less re-work is done as part of the referral process because of the quality of the referral. All of these reasons led one interviewee from Integrated Health Services to observe that they did not see a downside to embedded behavioral health providers in a primary care setting.

In our interview with the medical research and care delivery facility there was an emphasis on *efficiency*. One interviewee noted that costs would be less over time through the facility's concentration of resources in an interdisciplinary fashion. Also helping to improve *efficiency*, the interviewee noted, is that physicians at this facility are paid in aggregate – not by RVU – coupled with the facility's emphasis on taking a holistic approach and embracing families as a whole support system. This led the interviewee to observer that in most healthcare settings the intent may be great care, but providers are placed within a system that does not work because the way funding is provided is out of line with expected outcomes. The use of interdisciplinary teams and a holistic approach was also seen to have a positive impact on *quality*. Instead of just treating symptoms, which one interviewee from this facility noted was prevalent throughout MHS, this approach allows for the treatment of root causes allowing patients to fully recover.

Cooperation

The theme of cooperation was only brought up a couple of times in our interviews. These two comments were focused on the climate of relationships at Site H, and they were reflective of a positive climate. One interviewee noted that providers in the hospital tended to "migrate" in and out of the integrated care unit at the hospital. Another interviewee noted that "at the end of the day it is all about saving lives so that patients can return to their lives." The interviewee was trying to get across the point that providers and other staff will work together in any way necessary, formal and informal, to ensure that a particular job gets done.

Chapter 5

Site I Findings

Site and Data Overview

Site I is a multi-specialty Naval medical center that sits on 75 acres of land separate from any Naval base and serves patients from all services. However, it operates a network of clinics off-site at various military installations. Since it is not attached to a base, patients only stay at Site I temporarily during the course of their treatment. The site hosts approximately 19,000 unique patients per year. There are over 250 beds and approximately 6,200 professionals that work on site. Of these professionals, approximately 30% are enlisted, 20% are officers, and the rest are civilians and civilian contractors.

For Site I, five group interviews were conducted, and these interviews were with representatives from the site leadership (4 people), the clinical leadership (7 people), a family program (2 people), a non-clinical program (2 people), and health care business (1 person). Health care business is a department that provides information and assistance to beneficiaries, providers, and staff regarding issues such as enrollment in TRICARE, health benefits, specialty referrals, and billing assistance. Aside from the general groups listed, some of the interviewees represented a program that manages severely wounded, ill or injured patients from medical evacuation through recovery, a program that facilitates

coordinated care management processes, the Deployment Health Clinic, and the Substance Abuse and Rehabilitation Program. Each interview was conducted in a focus group, and the interviews were typically about 45 minutes in length with the longest one lasting no longer than one and a half hours.

This section presents an analysis of these interviews that focuses on the general themes of centralization, coordination, cooperation, and patient and family involvement. Table 9 presents an overview of the data collected. Definitions for each of the categories and codes can be found in Appendix A.

Centralization

At Site I, there were a couple of instances where different health care delivery functions that usually operate separate from each other were centralized by bringing them together under a *single management*. Two programs in particular were mentioned by one interviewee from the clinical leadership group: a residential, long-term care mental health program and SARP. The first program has both outpatient and inpatient capabilities, and SARP operates both an outpatient and a residential program.

In terms of the impacts of centralization on performance, another interviewee from the clinical leadership group noted that the arrangement for SARP has been viewed as successful and was being shown to other MTFs as a model example. The centralization seems to have had a generally positive impact on *performance*. However, no specific dimensions of performance were reported by this interviewee. In a separate interview, one interviewee from the MTF leadership noted the potential positive impacts of centralization on *quality*. First, the interviewee observed that in an effort to de-stigmatize behavioral health care a number of programs and organizations have "cropped up." This decentralized form led to "too many cooks in the kitchen" which hindered building strong relationships with individual patients.

Table 9: Codes for data collected from interviews at Site I

Theme	Category	Code	# Int.	# Ref.
Centralization	Mechanism	Single management	2	3
	Performance (general)	Positive impact	1	1
	Quality	Positive impact	1	1
Centralization, lack of	Funding	Positive impact	1	1
		Negative impact	1	1
Cooperation	Climate	Positive	1	1
	Example	Inter-organizational	2	2
	Facilitator	History	1	1
		Relationships	1	1
		Shared goals	1	1
	Mechanism	Consultant	1	1
		Informal network	1	1
Cooperation, lack of	Reason for	Informal network	1	1
Coordination	Access	Positive impact	1	1
	Context	Base size	1	1
		Capacity	1	1
		Stigma	1	1
	Example	Inter-organizational	2	6
	Facilitator	Base size	1	1
		Culture	1	1
	Funding	Example	1	1
	Mechanism	Case manager	1	3
		Co-location	2	2
		Consultant	1	1
		Coordinating program	2	2
		Embedded	1	1
		Liaison	1	1
		Memorandum of Understanding	1	1
		Multi-disciplinary	1	1
		Referral	4	5
	Patients & Families	Relationships	1	1
	Potential Mech.	Case manager	1	1
		Co-location	1	1
		Metrics	1	2
		Shared definition	1	1
	Quality	Positive impact	1	1
	Reason for	Comorbidities	2	2
		Expertise	1	2
		Suicide	1	1
Coordination, lack of	Access	Negative impact	1	1
	Challenge	IT systems	1	1
		Quantity of programs	1	1
		Resource intensive	1	1
	Example	Case management	2	2
		Inter-organizational	2	2
		Intra-organizational	1	1

The interviewee then noted that in a model such as the Patient-Centered Medical Home, which the American College of Physicians describes as "a team-based model of care led by a personal physician who provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes," (2012) these positive relationships could be formed thus increasing the *quality* of care.

Finally, with regards to SARP, despite the program's centralization of different care delivery functions, the program benefitted from a lack of centralized funding at a higher organizational level. One interviewee from the clinical leadership group noted that through various funding sources the program was able to grow by 30%. The interviewee also noted that the program that facilitates coordinated care management processes was similarly able to grow to include both psychological health and TBI because of various funding sources. However, as the interviewee concluded, the downside to this decentralized funding model is that there are likely a number of other departments and programs at, or outside of, Site I that do not know about the various sources available and, as a result, cannot take advantage of them.

Coordination

Formal coordination appears more than once in the framework presented in Figure 5. It is a dimension of integration that can involve both service delivery and organizational activities as the object of integration. This section, however, primarily focuses on coordination involving the delivery of services. A small sub-section presents the mechanisms identified during our interviews relating to organizational activities as the object of integration.

Reasons for coordination

There were several reasons identified by interviews as reasons for coordination. Multiple interviews noted that patient cases were becoming *more complex*. Psychological cases were becoming more complex in their own right, and *comorbidities* were also making cases more complex. These factors led

one interviewee from the MTF leadership to observe that "we want a system that coordinates all of their care." One interviewee from a family program noted that other programs and organizations wanted to coordinate with them because they were the only program at Site I with *expertise* in the area of families. In one particular case, representatives from this family program provide services once a week in the mental health clinic. Another interviewee from the MTF leadership noted the possibility of *suicides* when there were not proper handoffs as a reason for stronger coordination. However, the interviewee noted the inherent tradeoff in that, at a certain point, this coordination becomes "incredibly resource intensive."

Mechanisms

Service Delivery Coordination

There are a number of different integrative mechanisms used throughout Site I. This sub-section discusses the various mechanisms associated with service delivery coordination that were identified in our interviews with various programs and organizations. The mechanisms identified by interviewees are: *case managers, co-location, consultants, embedded providers, liaisons, multi-disciplinary teams*, and *coordinating programs*.

The program at Site I that manages severely wounded, ill or injured patients from medical evacuation through recovery is a *coordinating program* that makes use of both *case managers* and *multi-disciplinary teams*. One aspect of a *case manager's* job is to ensure that a patient's care is coordinated among the various types of physical and psychological care providers that a patient from this population, characterized by complex issues, will encounter. The *multi-disciplinary teams* include providers from a number of specialties that leverage their varied expertise to treat these complex cases. While other programs and departments at Site I perform coordinating functions, this program is referred to as a *coordinating program* because one of the primary reasons behind its creation was to coordinate different aspects of care.

The program at Site I that facilitates coordinated care management processes is another *coordinating program* similar to the one just mentioned except that it is entirely located within Mental Health. This program coordinates different types of providers through standardizing core clinical and care management processes. One interviewee from the clinical leadership noted that this program was set up to ensure the existence of common programs across organizations. In order to achieve better patient outcomes, as this interviewee noted, this program works to ensure that c*ase managers* facilitate the coordination of a patient's care among the various types of providers that a patient will encounter. The program also works to facilitate *interdisciplinary teams* that take a broad approach to psychological health based on a set of well-being/functional measures from the Mental Health Statistics Improvement Program (MHSIP). An interviewee from a non-clinical program noted that coordination with other offices primarily occurs through this program. The interviewee noted that prior to this *coordinating program* there was not always a clear understanding as to who had ultimate responsibility over a patient and the proper sequence of steps in treatment.

An interviewee from one of the family programs noted that the program served a *liaison* function because one of their main goals was to do outreach to different providers and to build provider-to-provider relationships. Despite this goal, the organization's primary purpose is to address family issues which is why the program is not referred to as a coordinating program.

For primary care clinics located away from the main hospital, one interviewee from the clinical leadership stressed the importance of *embedding* behavioral health providers into these environments. Embedded providers, although they remain a part of their original department, serve as part of the official work process for the department or program in which they are embedded. At one primary care location, instead of being embedded, a behavioral health office was *co-located* with primary care. In this case, the behavioral health providers were referred to as "hallway *consultants*." *Co-location* facilitated the interactions between PCPs and behavioral health providers at this location.

Organizational Activities Coordination

This sub-section discusses the various mechanisms associated with coordination or organizational activities that were identified in our interviews with various programs and organizations. The mechanisms identified by interviewees are: *case managers, co-location, memoranda of understanding (MOUs),* and *referrals*.

The program at Site I that manages severely wounded, ill or injured patients from medical evacuation through recovery is a *coordinating program* that makes use of both *case managers* who oversee and facilitate the transition of patients between hospital departments as these patients with complex issues receive various types of physical and psychological care. The *case managers* also facilitate the transition of patients between the hospital and community organizations. The program that facilitates coordinated care management processes also makes use of c*ase managers* who facilitate the continuity of a patient's care.

An interviewee from one of the family programs noted that, in an effort to share their expertise on family issues, representatives from this program provide services once a week, via *co-location*, in the mental health clinic. The *co-location* does not serve to coordinate the providers delivering care. Instead, it serves to facilitate the transition of patients from one type of provider to another.

Outside of the direct care delivered at Site I, a couple of references were made in interviews to coordinating with purchased care providers and other community organizations. One interviewee from health care business noted their hesitation to *referring* patients to purchased care providers. To facilitate this coordination when it became necessary there was an *MOU* with one facility that received a number of patients from Site I. This contractual arrangement facilitated the transfer of patients between offices, and it also ensured that a patient's normal military provider would have the final say in any treatment decisions. One interviewee from the Deployment Health Clinic (DHC), which is a clinic whose primary responsibility is not to deliver care but rather to verify that service members are ready to deploy, noted the clinic also made use of *referrals*. In addition to making *referrals* to various

departments and programs on site, the interviewee from the DHC noted that the clinic would *refer* service members to Military OneSource, a community organization, as needed.

Patient and Family Involvement

In our interviews at Site I only one mention was made regarding the patient's role in the care process. In discussing the large quantity of programs and organizations that have been formed in the effort to de-stigmatize psychological health care, an interviewee from the MTF leadership noted that the number of programs has hindered the formation of strong *relationships* with patients which the interviewee saw as important in the care process.

Lack of Coordination

During our interviews at Site I a number of examples demonstrating a lack of coordination were mentioned. Our interview with the MTF leadership brought to light several challenges that have limited coordination between providers and their respective offices. First, in terms of IT, one interviewee from MTF leadership observed that there was an issue with registries which are lists of patients and their care information. It was noted by this interviewee that there are many "homegrown" registries – or *independent registries*. For example, while there is a primary medical IT system, there is also a system for substance abuse, and the fact that they are independently maintained and operated makes it difficult to coordinate the sharing of records. It was also noted in this interview that the large *quantity of programs* and organizations that have been formed in the effort to de-stigmatize psychological health care have made it difficult for any one provider to know all the different types of care available. In other words, there is a lack of *inter-organizational* coordination. Part of the challenge, as this interviewee from MTF leadership noted, is that there is a *lack of communication* between many of these programs. Finally, another interviewee from this group noted that there is a strong effort to coordinate in the hopes of preventing suicides, but, as the interviewee noted, at a certain point this can become incredibly *resource intensive*.

Examples of a lack of coordination were also brought up in other interviews. One interviewee from a non-clinical program noted that there was a lack of cross-specialty, or *inter-organizational*, coordination with family programs and questioned how one could assess the effectiveness of these programs if they were not getting a sufficient number of patients. Also along these lines, an interviewee from health care business noted that mental health was too "fenced off," and that there was not enough *inter-organizational* coordination. This same interviewee also perceived that mental health providers only seemed to pay attention to mental health issues which led to what the interviewee referred to as a "cut-off product line." The lack of *intra-organizational* coordination resulted in lack of effective *case management* with providers fighting for control of a patient. Similarly, an interviewee from a non-clinical program noted that, prior to the creation of the program that facilitates coordinated care management processes, there was a lack of effective *case management*. In this case, the management of cases tended to follow the "flypaper" rule (i.e., you see to which provider a patient "sticks"). Once again, a lack of coordination resulted in uncertainty about who would ensure that a patient successfully navigated the entire continuum of care.

Impacts on Performance

Two references were made to the connection between coordination and performance during our interviews. First, one interviewee from the clinical leadership group noted that one of the main challenges in behavioral health care is getting patients in the door. The embedding of behavioral health providers into primary care was viewed as an important aspect in increasing *access* to care. Second, an interviewee from a non-clinical program noted that the Wounded, Ill, and Injured (WII) program, which promotes care coordination, was facilitating an increased *quality* of care across Site I (Kass, 2011).

Cooperation

In our interviews there were several references to a positive, cooperative climate at Site I. One interviewee from the clinical leadership group noted that "everyone works well together across the directorates" which are the primary care delivery organizations, e.g., primary care, and SARP. One interviewee from Fleet and Family Services noted that in addition to formal coordination there were also cooperative relationships with other organizations and programs. An interviewee from a family program made a similar observation; in addition to formal coordination, the interviewee noted that people quite often came together to talk informally.

Several factors were identified by interviewees as facilitators to these cooperative relationships. One interviewee from health care business noted that the current cooperative relationship their organization had with a purchased care facility resulted from a *positive history* of working together. Another interviewee from the clinical leadership group noted that cooperative relationships were possible simply because different people knew each other – they had existing *relationships*. The formation of these relationships was facilitated by doing the same grand rounds and peer reviews while also sharing staff between different offices. These shared experiences also lead to *similar training* and *similar standards of care* which were noted as other facilitators of cooperation. This allowed people to work around certain structural issues and mitigate what was viewed as the fragmentation of care. One interviewee from a non-clinical program also noted that having served in an active duty status at some point oftentimes was associated with a built-in informal network. Civilians working in the system were seen to be at a disadvantage in this regard.

Finally, some cooperative relationships were facilitated by formal coordinating mechanisms. Recall that one interviewee from clinical leadership noted that a behavioral health office was co-located at one off-site primary care clinic. The behavioral health providers at this location were referred to as "hallway consultants." This co-location faciliated the development of informal relationships, and the

informal nature of these relationships is implied by the "hallway" portion of their name. Providers had to go out and make connections with patients and providers from primary care rather than officially being a part of the primary care process.

Chapter 6

Discussion

Considering the findings from Site H and Site I, this chapter re-considers the initial framework developed for this research that pulled together the different threads of the integration literature. The first section focuses on the parts of the interview data that validated the framework, and the following section focuses on aspects of integration that were not presented in the initial model. This culminates in a refined model relating the different dimensions and objects of integration. The end of this chapter highlights some of the trade-offs between performance dimensions that were brought to light during our interviews. Finally, the chapter concludes with some directions for future research based on the findings of this thesis.

Validation of Developed Framework

The framework presented in Figure 5 highlights several cross-functional and cross-level dynamics that impact the coordination of service delivery activities. The interviews conducted at Site H and Site I confirm the existence and importance of these relationships. This section presents relevant examples from our interview data.

Figure 5 shows the possibility that the centralization of activities at the organizational level can impact the coordination of service delivery activities. This was confirmed during interviews at both Site H and I. At Site H the issue of culture, which is an organizational level phenomena, was noted as affecting the way service providers coordinated. Particularly, an interviewee from Integrated Health Services observed that culture can drive a lack of coordination. The interviewee noted that, oftentimes, "culture eats strategy for lunch" meaning that, even when it may be strategic for the improved operations of the overall system, organizational culture can prevent or hinder service providers from different organizations from coordinating their efforts. At Site I, an interviewee observed that, in an effort to de-stigmatize behavioral health care, a number of programs and organizations have "cropped up." This decentralized form led to "too many cooks in the kitchen" meaning that a patient was being advised by a number of different providers. This, in turn, hindered building strong relationships with individual patients. Both of these instances demonstrate the impact that centralization at the organizational level can have on service delivery.

Another aspect of the framework in Figure 5 is that the coordination of organizational activities, i.e., support functions, can impact the coordination of service delivery activities. For both sites, referrals are a common way that different organizations coordinate in order to facilitate a patient moving from office to office in order to receive the full continuum of care. These referrals can complement the coordination of providers. While referrals help facilitate relationships between the support functions at various organizations they also help build relationships between providers. In cases where multiple types of providers are not located in the same organization, the formation of these relationships can lead to the joint development of treatment plans. These relationships, however, do not necessarily follow the coordination of organizational activities. At Site H, one interviewee from Integrated Health Services noted that approximately 6 patients per week were referred to purchased care, or off-site care, and that, beyond these referrals, there is not much in the way of additional coordination.

Another element common to both sites was the use of IT systems to manage patient information. While IT systems are managed by a support function within the enterprise they serve as a technological platform facilitating the coordination between offices and providers. In terms service delivery, the information transmitted through these systems can be used in the joint development of treatment plans.

At Site I, it was observed that particular individuals can have responsibilities that fall into both the service delivery and organizational activities categories. These individuals who serve as case managers are essentially boundary spanners between the two categories that are able to drive coordination in both areas. To illustrate this, one aspect of a case manager's job is to oversee and facilitate the transition of patients between hospital departments, or between the hospital and community organizations, as patients receive care from these various types of providers. In addition to this, a case manager also works to ensure that a patient's care is coordinated among the various types providers that a patient will encounter. Thus, by driving the coordination of organizational activities the case manager is also able to drive the coordination of service delivery activities.

Finally, Figure 5 also shows the possibility that cooperation in carrying out organizational activities can impact the coordination of service delivery activities. At Site I, the behavioral health providers that were co-located with primary care at one of the off-site clinics developed informal relationships with the PCPs – they were seen as "hallway consultants." These informal relationships helped them come together to coordinate care even though they were not formally a part of the same work process. The role of cooperation in this instance is an important because the co-location of service, by itself, does not serve to coordinate the providers delivering care. Instead, it serves to facilitate the transition of patients from one type of provider to another. The cooperation that emerged helped lead to the joint development of treatment plans.

Discrepancies with Developed Framework

While there was data to support the structure of the framework presented in Figure 5, our interviews at Site H and Site I also brought to light several additional aspects of integration that did not match up with the object-dimension relationships initially proposed. This section presents some of the key findings in terms of new object dimension relationships.

First, data from interviews at Site I demonstrated that coordination can be a dimension associated with organizations as object of integration. A memorandum of understanding (MOU) was used to structure the relationship between the on-site hospital and one off-site facility providing purchased care that received a number of patient referrals. While there are aspects of control and authority in this relationship there is not the presence of the other key aspect of centralization - organizations coalescing around a particular focal point. Instead, this MOU primarily serves to coordinate between two organizations.

That coordination can be a dimension associated with organizations as object of integration is not surprising. There is a fair amount of literature that discusses inter-organizational relations (e.g., Nolte & McKee, 2008; Horwath & Morrison, 2007). However, when comparing the concepts of *objects* and *dimensions* presented by Singer et al. (2011) and Glover, Naveh, and Carroll (2012), respectively, there seemed to be the most compatibility between organizations as an object of integration and the dimension of centralization. However, centralization requires both the concentration of decision making power in single entity (Aiken & Hage, 1968) and organizations coalescing around a particular focal point (Provan & Milward, 1995). As the example from Site I shows, coordination between organizations can capture the control and authority aspect without bringing together multiple organizations around a single focal point.

There were also other aspects of integration identified in the data from our interviews that were not themes in the literature. These new aspects relate to centralization. First, centralization can be a

dimension of integration associated with the object of service delivery activities. At Site H, one interviewee observed that "there is one final decision maker despite the presence of many consultants." While consultants are a coordinating mechanisms, the structure of the decision making process indicates aspects of centralization. In this example, consultants coordinated with the primary provider while also coalescing around this provider who had the authority to make the final decision.

Also with respect to centralization, data from our interviews indicates that it can also be a dimension associated with organizational activities. One interviewee from Site H noted that forecasts of patient demand was a task done centrally and distributed to different organizations, i.e., instead of one part of each of these organizations doing this independently the effort is centralized for the entire base. One interviewee from Site I noted that IT systems, a support function representative of organizational activities, were decentralized. The interviewee observed that there are many "homegrown" registries. Though, the interviewee pointed out an example of decentralization, this is indicative that centralization is also a potential scenario for this organizational activity.

The presence of these additional aspects of integration lead to previously unidentified cross-level and cross-functional dynamics. First, coordination at the organizational level can drive coordination of organizational activities. This is exemplified by the MOU that was negotiated between the hospital and one purchased-care provider at Site I. The MOU represents the structural relationship between the two organizations, i.e., it is an organizational level issue, while it also facilitates the transfer of patients between offices, i.e., an organizational activity. Second, coordination at the organizational level can also drive the coordination of service delivery activities. Part of the negotiated MOU ensured that a patient's normal military provider would have the final say in any treatment decisions. This required coordination between providers in the development of treatment plans.

Data from our interview identified centralization as a dimension of integration associated with organizational activities. This, in turn, had an impact on the coordination of service delivery activities. At

Site I, it was noted that the lack centralization organizational activities, in this case IT systems, limited the ability of providers to coordinate care. For example, while there is a primary medical IT system, there is also a system for substance abuse, and the fact that they are independently maintained and operated makes it difficult to coordinate the sharing of records. Without shared records, providers have a difficult time jointly developing treatment plans.

Figure 7 presents the updated framework showing the relationship between the different dimensions and objects of integration. The cross-level and cross-functional dynamics indicated in the framework do not match up identically with the dynamics that were identified in our interview data. Once again, the emphasis is placed on the coordination of service delivery activities because, as per Shortell et al. (1996), service delivery activities are where value is created not only for the patient, but also for the community and the payer. While there may be intermediate dynamics, e.g., coordination at the organizational level drives the coordination of organizational activities, the most important area for consideration is the impact on the coordination of service delivery activities.

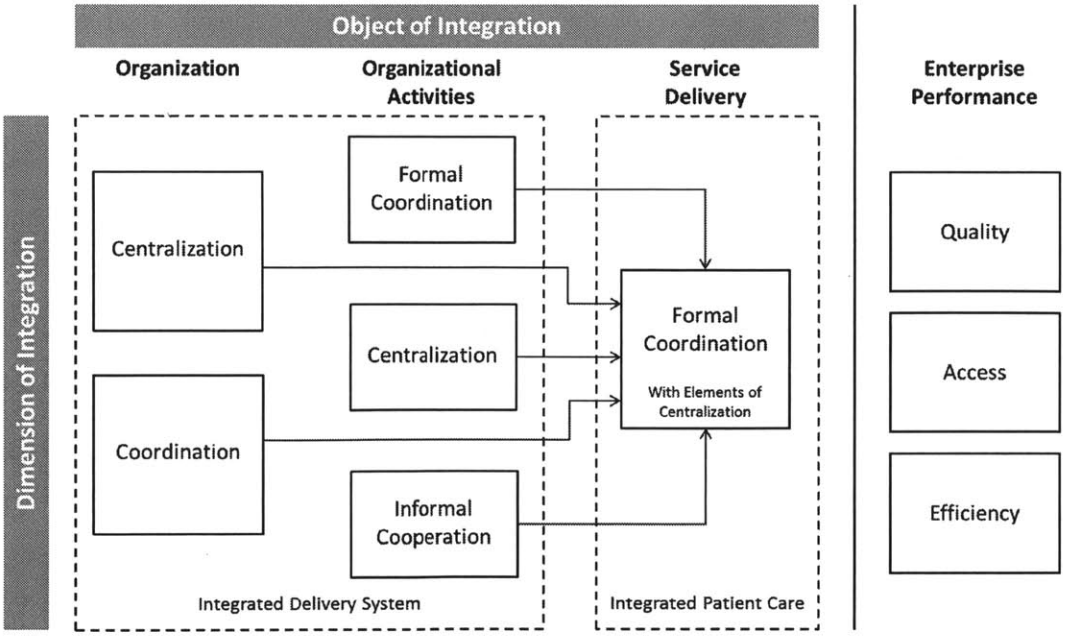

Figure 7: Modified framework for considering integration and enterprise performance

Performance

The data from our interviews at Site H and Site I indicate that there are trade-offs in trying to optimize multiple performance variables. In other worlds, there are challenges to simultaneously trying to improve performance in all three dimensions – quality, access, and efficiency. This section highlights some of the trade-offs that were identified during our interviews. This is not meant to be an exhaustive list of all of the potential trade-offs. Future research should work to identify and test these other trade-offs where applicable.

At both Site H and Site I there were efforts to improve access to care. At Site H, one way of achieving this is to facilitate coordination by screening for TBI every service member that comes to the site for treatment. Coordination is facilitated because a provider can only refer a patient for specialized TBI treatment if that provider knows the patient is in need of such treatment. Also at Site H, the Behavioral Health Integration Program, which embeds behavioral health consultants into Internal Medicine, helps to identify these cases and increase access to care. While both of these approaches may be intended to increase access to care, it is unclear what the impact is on other performance dimensions. For example, many providers already seem to be overloaded with patients. One interviewee at Site H noted that "we are as busy as we have ever been with casualties. There are more casualties now than ever in the history of the war." The question then becomes where is the tipping point? Will increasing the workload of these providers even more have an effect on quality? Does efficiency ever start to decline? Is there clear evidence that is more efficient for the overall system to catch these patients early? These are questions that need to be addressed when promoting efforts to improve access.

Another way that access has increased, in some cases, is through the decentralization of organizations. In some cases this decentralization has been unintentional. For instance, one interviewee at Site I noted that there is a large quantity of programs and organizations that have been formed in the

effort to de-stigmatize psychological health care which has had a positive impact on access by creating more points of entry into the system. However, this de-centralization was also coupled with a lack of coordination, and the interviewee also noted that this has made it difficult for any one provider to know all of the different types of care available thus making it difficult to coordinate and ensure that a patient gets the type of care they need. Furthermore, the interviewee noted that efforts to try to coordinate between all of these organizations in order to prevent suicides have been incredibly resource intensive. So, while decentralization has helped increase access to care it seems to also have had negative impacts on the quality and efficiency of care. What, then, is the ideal level of centralization? How can coordination and cooperation be coupled with centralization to minimize these trade-offs in performance?

Finally, there are important trade-offs when trying to improve the quality of care. At Site H, the medical research and care delivery facility was focused on providing very high quality care to some of the most complex patients. Instead of just treating symptoms, which one interviewee from this facility noted was prevalent throughout MHS, a holistic approach allows for the treatment of root causes allowing patients to fully recover. The facility also utilizes interdisciplinary teams, and they facilitate this coordination by paying the providers in aggregate not by RVU. While this facility appears to be achieving its goal of high quality care, it does so with a very large budget relative to the number of patients it sees. There are definite trade-offs with efficiency. What is the effect on quality if the budget starts to decrease, and where is the ideal balance? Also, compared to other organizations at Site H, this facility can only receive a small number of patients each year because of the amount of time providers spend with patients. What is the effect of quality as access is increased? Where is the ideal balance?

Future Work

This research has presented a comprehensive framework for understanding the relationship between the various, often separately discussed, dimensions and objects of integration. This framework should continue to be used in future research so that there is a common language that will allow us to see a convergence in the integration literature. Future research should further verify and, where appropriate, refine this model. It should also build on this so that we not only know which dimensions/objects are connected but also the nature of their connection. How much of an impact does one component of integration have another? Are the effects positive or negative? To produce this type of quantitative analysis will require more as well as more in depth interviews and on-site observations. More importantly, this work should also be coupled with any type of operational data that organizations within a particular enterprise collect.

This research has also presented practical examples of the trade-offs that occur between different dimensions of performance when efforts have been made to improve overall enterprise performance. These examples help reverse an assumption prevalent in the integration literature that more of any integrative effort is better (Glover, Naveh & Carroll, 2012). This concept is of practical use to managers who have to plan new strategies for their organization or enterprise. To be of further use, future research should look to identify more of these trade-offs as well as producing quantitative results for the magnitude of these trade-offs. In addition to more in-depth interviews and on-site observations, substantial data on organizational and enterprise performance will be necessary to carry such an analysis.

Another way that future research can improve upon the current model is to clarify how we distinguish between different forms of centralization and cooperation. In the current approach, these forms were primarily distinguished by the particular mechanism that was used. However, for

centralization and cooperation there were very few mechanisms identified in our interviews indicating that a different approach may be necessary. In Chapter 2, the concept of integration as a continuum was introduced meaning that there can be different degrees of integration, e.g., tightly coupled versus loosely coupled organizations. Perhaps centralization and cooperation are best understood in this respect.

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Appendix A

Coding Definitions

Theme	Category	Code	Definition
Centralization	Mechanism	Decision maker	There is a structure of authority around decisions about treatment plans
		Forecasts	Projections about certain metrics, such as patient demand, is done centrally
		Single management	Enterprise functions that are usually separate are brought together under a single line of authority
	Performance	Positive impact	The use of a centralized approach is viewed as having a favorable influence on performance
	Quality	Positive impact	The use of a centralized approach is viewed as having a favorable influence on quality
Centralization (Lack of)	Access	Negative impact	The lack of a centralized approach is viewed as having an unfavorable influence on access
	Funding	Negative impact	The lack of a centralized approach to funding is viewed as having an unfavorable influence on certain aspects of enterprise operations
		Positive impact	The lack of a centralized approach to funding is viewed as having a favorable influence on certain aspects of enterprise operations
	Metrics	Standardization	There is the lack of a standard, centralized set of metrics
Coordination	Access	Positive impact	The use of a coordinated approach is viewed as having a favorable influence on access
	Background	Group relations	Statement referenced an instance of coordination that highlighted relationships between either line, medical, or community groups, but a specific mechanism was not mentioned
	Challenge	Financial	The payment structure to providers creates incentives that hinder coordinating activities

Coordination	Context	Base size	Statement references the impact base size has on the need and ability of organizations to coordinate
		Stigma	Statement provides contextual information about stigma for a given organization or for the overall site
	Creating space	Coordinating program	Organizational space is created by a program that coordinates the efforts of separate enterprise service delivery functions
		Joint unit	Organizational space for coordination is created by a unit in a hospital that is jointly occupied by typically separate enterprise service delivery functions
	Efficiency	Positive impact	The use of a coordinated approach is viewed as having a favorable influence on efficiency
	Example	Inter-organizational	Statement referenced an instance of coordination that spanned organizational boundaries, but a specific mechanism was not mentioned
	Facilitator	Base size	Being in closer proximity to other organizations facilitates coordination
		Capacity	The ability to accept referred cases facilitates coordination
		Culture	Having a shared organizational culture facilitates coordination
	Frequency	Weekly	Meetings to coordinate various providers are held on a weekly basis
	Funding	Example	Statement referenced the coordination of funding between organizations, but a specific coordinating mechanism was not mentioned
	Mechanism	Case manager	An individual that both works to ensure that a patient's care is coordinated among the various types of providers that the patient will see and who also has some level of influence over the development of treatment plans
		Co-location	Two separate functions are located in close proximity to one another
		Consultant	A provider that is not formally a part of a particular organization yet provides advice or contributes directly to the development of treatment plans
		Coordinating program	An organization whose primary purpose is to coordinate different types of providers and different aspects of care
		Embedded provider	A provider that is not formally a part of a particular organization yet is a regular part of that organization's processes
		Inter-disciplinary team	Teams that work collectively throughout the care process to complete various tasks such as making assessments, diagnoses, and interventions

Coordination		IT system	A technological platform for sharing information thus facilitating coordination between offices and providers
		Joint unit	A unit within a hospital that is jointly occupied by typically separate enterprise service delivery functions
		Liaison	An individual that facilitates communication between two or more groups thus facilitating the coordination of their activities
		Meeting	A space in which multiple stakeholders come together to discuss various issues
		Memorandum of Understanding	A document describing a bilateral or multilateral agreement between parties with regards to how activities are coordinated
		Multi-disciplinary team	Teams where different types of providers meet to discuss the progress of a case and the direction in which it needs to move while all other interactions with the patient take place in a one-on-one fashion
		Nurse navigator	A nurse that guides patients and families throughout the entire care process
		Planned hand-off	Coordination between two organizations to ensure both the progression of care and a continuity of care
		Referral	A recommendation to seek care from a particular type of provider
	Patients & Families	Family-centered	Families are incorporated into the care process and are viewed as a strategic part of a patient's support system
		Patient-centered	The patient is incorporated into the decision process for developing treatment plans
		Relationships	Statement references the importance of patient-provider relationships without stating that the patient is incorporated into the decision process
	Quality	Positive impact	The use of a coordinated approach is viewed as having a favorable influence on quality
	Reason for	Comorbidities	Co-existing issues requiring a patient to seek treatment from multiple locations thus necessitating provider coordination
		Conflicting treatments	Coordination is necessary to avoid different providers from developing treatment or medication plans that conflict and/or detract from other treatment or medication plans
		Expertise	Coordination is necessary to take advantage of expert knowledge that resides outside of an organization
		No shows	Stronger coordination is necessary to reduce the number of patients that do not show up for an appointment after referral
		Suicide	Coordination is necessary to ensure smooth transition between services so that a patient susceptible to suicide stays in the system

Coordination		Time	Coordination is necessary to properly treat or diagnose a patient when a particular provider tasked with responsibility over a patient does not have sufficient time to perform these tasks
Coordination (Lack of)	Access	Negative impact	The lack of a coordinated approach is viewed as having an unfavorable influence on access
	Challenge	HIPPA	This law is referenced as a reason why patient information cannot be shared thus hindering coordination
		Information loss	A lack of coordination prevents providers from having the information they need about a patient
		IT systems	A lack of coordination between various IT systems hinders providers from having the information they need about a patient
		Quantity of programs	A large quantity of programs makes it difficult for others to be aware of all services available as well as finding the capacity to maintain these relationships
		Resource intensive	Increasing levels of coordination require an increasing amount of resources thus making it more difficult for organizations to coordinate
	Example	Case management	Statement references a lack of coordination that stems from a lack of case management or the lack of a single case manager
		Inter-organizational	Statement references a lack of coordination that stems from a lack of inter-organizational interactions
	Group relations	Community organizations	Statement referenced an instance of non-coordination with community organizations
		Purchased care	Statement referenced an instance of non-coordination with purchased care
	Quality	Negative impact	The lack of a coordinated approach is viewed as having an unfavorable influence on quality
Cooperation	Climate	Positive	There is a shared perception among members of a group that cooperative activities are viewed favorably
	Example	Inter-organizational	Statement referenced an instance of cooperation that spanned organizational boundaries, but a specific mechanism was not mentioned
	Facilitator	History	Cooperative relationships have been facilitated by a positive history between two organizations
		Relationships	Cooperative relationships have been facilitated by relationships that preceded individuals' current role
		Shared goals	Cooperative relationships have been facilitated by individuals having common goals with regards to activities performed

Cooperation	Mechanism	Informal consultant	One provider serves as a consultant to another provider even though it is not officially a part of their job
		Informal network	Cooperative actions are carried out through the relationships that an individual has outside of the ones explicitly built into their job description
Cooperation (Lack of)	Reason for	Informal network	The lack of a substantial number of relationships outside of the ones explicitly built into an individual's job description hinders the ability to carry out cooperative actions

Appendix B

Utilized Interview Guide

Post-Traumatic Stress Innovations: US Military Enterprise Analysis
Enterprise Integration Interview Guide

Unit or Organizational Demographics

Name:
Location:
Source of Care (Direct, Purchased, Community):

This interview, conducted by researchers from the Lean Advancement Initiative at Massachusetts Institute of Technology, is part of a project sponsored by the Military Health System. The purpose of the research is the full continuum of care for Post-Traumatic Stress Disorder (PTSD) and related disorders for U.S. servicemembers and their families. The goal of this project is to better understand the interactions between the various sources of care. The purpose of this specific interview is to better understand the way that your unit/organization coordinates care and cooperates to achieve outcomes (efficiency, quality, and innovation). Your knowledge and opinion as a part of this study is greatly appreciated. This interview should take about 1 hour.

Your participation is voluntary and you may decline to answer any or all questions. You may also decline further participation, at any time, without adverse consequences and confidentiality and/or anonymity are assured.

Interview Questions

How would you define or bound your unit? Tell me more about the work done in your unit. How many physicians, nurses, PAs, etc. are there?

Would you provide examples of the topics that are being coordinated in your unit?

What other units or organizations do you coordinate with?

- Do you coordinate with purchased care or community organizations?

How often does your unit/organization interact with these other units/organizations?

Through what mechanisms do you interact?

What information is exchanged during these interactions?

Is there a central or core organization that facilitates the coordination of these various groups that provide programs and services?

- If so, how much influence does this organization have over your actions?

What are the advantages and disadvantages of coordination with others outside your unit/team?

Is there enough coordination with others outside your unit?

- If yes, what types of benefits are achieved?
- If not, why? What kind of benefits could be achieved? How should it be improved, if at all?

What policies exist to support, promote, or limit these interactions?

How quickly are things changing in your organization's environment? How comfortable are people that they "know the system"? (i.e., the various programs and services provided by line, medical, and community organizations)

How do you measure performance (e.g., quality, efficiency, and access)?

Do you share these performance measures with other sources of care?

What is your organization's vision? Do you have a shared vision with other partnering organizations?

Do you receive funding from multiple sources?

Would you please provide the following information or documents that include the following:

- Number of patients seen annually
- Number patients seeking care from more than one source
- Estimated total cost of care and cost per patient per treatment type

Appendix C

Proposed Interview Guide

MIT COLLABORATIVE INITIATIVES

MIT Post Traumatic Innovations Project

Integration Study: Organization/Program Coordination Qualitative Analysis

As your Surgeon General and/or Vice Chief have indicated in previous correspondence and/or discussions, we need your help on this important research project sponsored by MHS and supported by Gen. Dempsey. The purpose of this research is to improve the full continuum of psychological health programs and services for U.S. servicemembers and their families through better understanding of the interactions between organizations within several groups that are involved in this health continuum (i.e., MTF organizations, TRICARE, and community organizations).

Information will be collected for this research through a series of interviews and documentation that programs are willing/able to provide. Attached to this letter is a series of programs and organizations we have identified through our preliminary research as well as the set of questions we would like to ask during our interviews. We request that you review the list of programs and organizations to evaluate which ones are a part of the system for behavioral and psychological health at your location. We value the time respondents take to participate, so we estimate that each interview will take approximately 30 to 45 minutes. We are also willing to conduct interviews in focus groups so that multiple people from a group can provide input during the same meeting.

In addition to the interviews, we would also like to collect from each program and organization (a) their organizational chart and (b) any type of aggregated dashboard or performance metrics collected and used by the program or organization. In addition, we would like to collect the same type aggregated performance data for the entire medical center from the commander.

We believe our results will contribute empirical evidence to address enterprise-level issues that can help individual organizations make improvements, leverage best practices, and integrate their efforts across the Military Health System at large. Specifically, our research is directed toward:

- Obtaining significant evidence of how integration mechanisms such as centralization, formal coordination (e.g., cross-organizational meetings), and informal cooperation (e.g., casual sharing across organizational staff) impact enterprise performance
- Improving the balance of human and financial resources across multiple organizations within the enterprise

Again, we greatly appreciate your clear feedback and willingness to consider our request to administer the survey to your staff. We look forward to working with you.

Regards,

Dr. Wiljeana Glover, Prof. Eitan Naveh, Mr. Cody Kamin, and Prof. John Carroll
Lean Advancement Initiative
Massachusetts Institute of Technology

List of Relevant Organizations

The following is a list of departments/groups and programs that we have identified as relevant to the Navy through an initial set of interviews and a review of the most recent RAND report about behavioral and psychological health programs. We would like you, as our primary POC at BUMED and/or Site H/I, to confirm the departments/groups and programs that are present at Site H/I. Additionally, please let us know if there are programs that are misnamed or other programs with which you are familiar that are missing from this list.

Note: Some items have been removed to preserve the identity of the sites.

Clinical Organizations (i.e., Departments, Units, or Groups)

- Behavioral/Mental Health
- Branch Health Clinics
- Child and Adolescent Behavioral Health
- Deployment Health Clinic
- Health and Wellness/Readiness Department
- Internal Medicine
- Primary Care
- Substance Abuse
- TRICARE

Non-clinical Organizations (i.e., Departments, Units, or Groups)

- Chaplaincy
- Family Advocacy Program
- Fleet and Family Services
- Military OneSource
- Navy Operational Stress Control
- NCCOSC
- Social Work

Programs

- Assessing and Managing Suicide Risk (Contractor)
- Automated Tools and Outcome Measures (DCoE)
- Caregiver Occupational Stress Control Program
- Child and Youth Behavior Consultants
- Co-Occurring Disorders Program
- CREDO
- FOCUS
- HeartMath (Contractor)
- Military Child Education Coalition (Contractor)
- Navy Alcohol and Drug Abuse Prevention Program
- Navy Command Level Suicide Prevention Program
- Navy MORE Program
- Navy Safe Harbor
- Re-Engineering Healthcare Integration Programs (DCoE)
- Sexual Assault Prevention and Response Program
- Virtual Reality Graded Exposure Therapy

Interview Guide

Providing comprehensive behavioral and psychological health services is a complex task as there are many different people and programs involved. We are interested in understanding how different military medical centers deliver these services. We completed an initial site visit here last year, and for this visit/interview we are hoping to gain a better understanding of if and how different types of care and service providers coordinate their efforts.

Questions about the internal coordination of services (i.e., within an organization or program):

- What are the providers and other professionals that make up your organization or program? *(e.g. psychologist, physician, nurse, social worker, coordinating administrator, resilience trainer)*
- How are the efforts of these people coordinated? Are there specific activities/processes that facilitate this coordination? *(e.g. meetings, IT systems, performance measures)*
- With regards to decisions about treatment or other service plans, who is involved in the decision making process? *(e.g. consultants, members of an interdisciplinary team, the service member)*
    - If multiple people are involved in the decision making process, how does this process work? For example, does everyone have an equal voice in the process? Are there clearly defined steps? If so, what are they?
- How does this internal coordination impact your organization's performance in terms of quality, access, or cost?
    - Would you provide some examples?

Questions about coordination with other organizations or programs:

- Do you coordinate your activities with any of the organizations or programs on the following list? If so, are multiple organizations or programs involved in a single coordination effort? *[Provide list to interviewee]*
- Please describe the specific activities/processes that facilitate this coordination *(e.g. councils, cross-functional meetings, referrals, IT systems, performance measures)*
  [Ask for each of these examples]

- With regards to decisions about treatment or other service plans, is there a joint decision making process? If so, who is involved? Are there clearly defined steps? Does everyone have an equal voice?

- Please describe the informal connections/relationships that members of your organization or program have with others.
  - Do these informal connections/relationships facilitate the coordination of service delivery activities (i.e., the delivery of clinical or non-clinical services)?
- How does this external coordination impact your organization's performance in terms of quality, access, or cost? What about your *shared* performance?
  - Would you provide some examples?

The final set of questions we want to ask are about centralization. In our research, we consider centralization to represent issues such as control and authority. In other words, decision making power is centralized in a single person or body. Now, we do recognize that being in the military there is always a command structure, but we have found that some organizations have more autonomy than others.

Questions about centralization:

- In the overall behavioral and psychological care system, how/where does your organization or program fit? *[Ask for organizational chart here]*
  - Would you describe this structure?
  - *[For programs]* Who, ultimately, owns this program?
- From whom does your organization or program receive its funding?
- How does this structure impact the coordination of services to service members?
- Can you describe the level of autonomy you have in conducting your work? In particular how much autonomy do you have in working with other organizations and programs?
- How does this arrangement impact your group's performance in terms of quality, access, or cost? What about your *shared* performance?
  - Would you provide some examples?

Finally, would you share any aggregate data that you have on current measures of overall quality, access, or cost for your department/unit/group?