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PHYSICIANS MUST LEAD!
A COMPARATIVE STUDY TO TWO APPROACHES TO
PHYSICIAN LEADERSHIP DEVELOPMENT

By
Mark Hertling

A Dissertation Proposal Presented in Partial Fulfillment of Requirements for the
Degree of
Executive Doctor of Business Administration
in the
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Dissertation Defense: Date TBD

DBA Candidate: Mark Hertling

The content and format of the dissertation are appropriate and acceptable for the awarding of the degree of Doctor of Business Administration

Committee Chair

Kimberly Jentsch, Ph.D.: _____

Committee Second

Greg Marshall, Ph.D.: _____

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Abstract

As healthcare issues increase in complexity, healthcare organizations (HCOs) are applying resources to design and execute leadership development programs for their teams. Many hospitals are also increasing leadership training for physicians in the belief that those who execute healthcare on the front lines are best positioned to lead teams to solve the various challenges facing the industry. Finding the best ways to execute these physician leadership development programs and how physicians and their teams are affected by these programs are of particular interest to the healthcare industry. This mixed-methods study examines the effects of a healthcare leadership development program designed to change physicians' approach to leadership by assessing how physicians are affected by the other participants in the program. A quantitative approach conducted pre- and post-program from physician participants, professional colleagues and personal relations yielded data that was combined with a qualitative approach that provided additional information from physicians taken at the mid-point of the course. This data was analyzed to compare the relative effectiveness of participating in training with other physicians only (homogenous condition) or with physicians, nurses, and administrators (inter-professional condition).

Key words: Physician Leadership, Leadership Development, Healthcare Leadership Programs, Interprofessional Education, Leader Training, Transformational Leader Theory, Healthcare Executive Leadership, Faultlines.

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CHAPTER 1 – INTRODUCTION

Background

“We need doctors to lead!”

This universal call for action is heard from hospital administrators and healthcare providers alike, and a variety of professional medical journals are trumpeting the request for physicians to take a heightened role in leading their profession. But what are the challenges that any leader must address in healthcare, what defines leading in the healthcare industry, and how might doctors become better prepared to take on the reigns of leadership in their profession?

The execution of healthcare in the United States has become increasingly complex. An ever-expanding number of people (doctors, nurses, healthcare executives, government policy makers, insurance managers, patients, payers, consumers and family members) in increasingly interconnected networks (hospitals, clinics, physician groups, government agencies, rehabilitation units, and commercial insurance companies) all contribute to the changing, challenging, and complex interactions found in the healthcare industry. The exchanges between people and networks on myriad issues across the spectrum of healthcare - from setting

boundaries for commercial and governmental bodies involving themselves in adapting approaches to clinical services, to designing new treatment and preferred methods of payment, to instituting new initiatives like implementation of electronic health records and population health programs – all require leaders to provide direction, take action, and assume responsibility for the results.

In addition to the various challenges of medical interactions and the attempts at clinical problem solving, the healthcare industry's requirement to lower the rising cost of care is also of concern. The National Health Expenditure Account (NHEA) estimates the cost of healthcare has continued to rise since 1961, and in 2017 the costs of health services in the United States peaked at \$3.5 trillion, equating to approximately 17.9 percent of the gross domestic product (GDP) (Department of Health and Human Services, 2018). Predictions have the GDP associated with healthcare continuing to grow at between 2.7 and 3.5 percent per year for the next ten years, an unsustainable cost for health. As troubling, estimates indicate the healthcare industry spends 30% or more of its funding on wasteful, inefficient and ineffective processes, exacerbating the need for “finding fixes from leaders from every sector within the healthcare industry” (Smith, Saunders, Stuckhardt & McGinnis, 2012).

Government policy-makers, healthcare executives, and organizations associated with the industry are embarking on various fronts to find ways to improve care and control costs. While a few efforts are resulting in unintended negative consequences (Lipsitz, 2018), others are positively addressing the complexities that challenge the industry, with the indicators that there is the need for the *right* people – the *right leaders* - to be involved in the leadership process (Kaissi, 2012). As executives, hospital administrators and policy-makers seek answers to the difficult challenges they face within the healthcare industry, in many instances they realize the ones who

might best understand the problem and who are also to provide unique insight to innovative solutions are not at the table.

While some healthcare organizations have sought to develop more effective strategies by integrating doctors into hospitals' administrative structure and giving them authoritative positions within the organization, these measures have shown to provide limited contributions (Baker & Denis, 2011; Bohmer, 2011). There is a growing belief that physicians must play a more instrumental role in the allocation of scarce healthcare resources (Pronovost, Miller, Wachter & Meyer, 2009), and they must help find new and more efficient methods of patient treatment and care (Baker & Denis, 2011; Denis & Van Gestel, 2015). The industry wants physicians to go beyond their medical professional roles of direct patient care and expand their responsibilities into managing risk and leading levels of quality, collaborating on the evaluation of new technologies, and contributing to committees that help the strategic evolution of the industry (Daly, Jackson, Mannix, Davidson, & Hutchinson, 2014; Spurgeon, Barwell, & Mazelan, 2008). The desire to have doctors lead - to play a key role in collaboration, cooperation, and "taking charge" – has come about because executives in the industry know physicians hold the keys to the information that will contribute to solving key problems...doctors are at the point of the spear in healthcare.

The Triple Aim

In 1991, the Institute for Healthcare Improvement (IHI) was formed with the mission of redesigning healthcare into a system "without errors, waste, delays and unsustainable costs" (IHI, 2018). At the start of their third decade of existence, IHI furthered that initiative by creating the mantra of the "triple aim," a term used to describe a strategic framework for addressing the key areas of health system performance. With this strategic vision, the healthcare

industry is becoming laser-focused on these three categories that make up this framework: improving care, reducing costs, and increasing access for patients across the spectrum of population health (World Health Organization Report of 2011). Given the issues associated with physician well-being and resiliency, in 2017 the American Medical Association (AMA) requested the addition of another “aim” – improving physician well-being - as a fourth desired strategic objective (O’Reilly, 2018), attaching the term “triple aim plus one.”

While healthcare executives, hospital administrators and professional organizations are attempting to address the challenging strategic issues of the industry, physicians have – until recently - remained almost exclusively focused on just one of the triple aim areas: “improving patient care.” Physicians will admit their preparation, training and strength is in the scientific method, and that their approach is primarily to patient care, as that is what they are taught related to their professional culture and ethos of healing. After all, physicians enter the medical profession to treat patients, execute surgeries and cure disease, and the vast majority of medical schools and residency programs offer almost nothing associated with leadership training or business management courses (Kaplan & Terrell, 2014). While some doctors eventually assume leadership responsibility during the course of their careers, most are not exposed to leadership education or training as they enter or rise in the profession. That is reflected in the few physicians who are positioned as leaders of healthcare organizations, with one report indicating only about 230 of the nation’s 6,500 hospitals are led by physicians (Falcone & Satiani, 2008). The lack of training in leadership and management in medical school, during residency or upon entering practice does not formally or adequately prepare physicians for addressing diverse clinical leadership responsibilities or contributing to interprofessional bodies that are positioned

to solve the problems associated with all the challenges found under the triple aim (Kaplain & Terrell, 2014). The profession, the industry, and most patients know this.

A Call to Leadership

The call to physicians to take on leadership roles to help solve the challenges in US healthcare is growing louder. In a *New England Journal of Medicine* perspective, Lerman and Jameson (2018) describe the disconnect between the leadership skills of the physician and the “expanding and increasingly complex” requirements of the healthcare system. Noting physician complacency in striving to find solutions to all the problems facing modern healthcare beyond improving patient care, the authors recommend physicians should start discarding the clinical resume-building that highlights only their credentials and past accomplishments. Instead, doctors should look for ways to grow their ability to lead their profession and their clinical organizations. To do that, physicians must learn to improve their communication ability, find ways to better contribute as leaders of teams, collaborate with other professionals, and improve the ability to contribute to more effective information flow with the “non-professional” (i.e., administrators) members of their team. This professional medical journal advice is echoed by the *Harvard Business Review*, with Rotenstein, Sadun and Jena (2018) recommending that in the future physician leadership programs should be a formal part of medical, residency and hospital training curricula. The implications are that in the future doctors must lead multidimensional and interprofessional teams to help administrators solve the challenges found in the various elements of the triple aim plus one.

Gaining A Seat at The Table

There is also a growing agreement across the medical profession and in the healthcare industry that physicians must have a seat at the table beyond the desire for them to contribute to

solving the strategic issues related to the triple aim plus one, with increasing demands that physicians become more intimately involved in medical process development and healthcare policy design. Increasingly, doctors are being asked to lend advice and leadership to solve current problems and contribute to the future in all areas associated with care...and to help the industry and their respective organizations remain viable. But to become a more valued member of a team tasked with solving all the complex challenges of healthcare, physicians must receive training in the art of leadership and organizational management to complement the training they already possess in the science of care. The healthcare industry is researching the best ways to assist physicians in improving their leadership skills while also preparing doctors to assume the challenges associated with leading interprofessional healthcare teams.

Study Orientation

This study will contribute to that research by analyzing how an outcomes-based leadership development course – collaboratively designed by hospital executives, physicians and a leadership subject matter expert – will produce change in three specified competencies: leadership-followership, communication delivery and information exchange. This study will assess self-reported changes in these competencies while also determining whether the leadership conversions are also observed by other professional colleagues and personal relations working with the doctors who receive training. Additionally, the research will examine whether the composition of the classes – in a homogenous or interprofessional setting – will affect the type and degree of change.

This introduction, chapter one, provides information as to how and why healthcare wants and needs physicians to contribute as both formal and informal leaders on healthcare teams to assist in solving the challenges faced by the healthcare industry. In chapter two, a literature

review addresses the myriad challenges facing the healthcare industry in designing and executing the type of physician leadership programs that will be the most effective: determining the types of leaders needed in medicine, analyzing why the design of healthcare-specific programs is critical, and assessing how healthcare teams can best develop a shared approach to problem solving. To do that, chapter two's subsequent sections will first show how leadership theory contributes to developing the optimal approach and then defining the necessary elements that will prove to be the most advantageous for healthcare leadership. Next, organizational leadership development best practices in various industries outside of healthcare will be described, and the challenges of healthcare that may require an interprofessional leadership approach will be highlighted. Chapter three provides a description of the design of the leadership development program used in the research and the selection and participation of the program participants along with the survey, measures and procedures used for data collection and analysis of data that will be collected. Chapter four will show the results of the research, and chapter five will contain the conclusions, the limitations of the research, the value to and recommendations for implementation within the industry, and some suggestions for future study.

CHAPTER 2 – LITERATURE REVIEW

Leadership

The references to leadership in Eastern and Western societal classical writings are ubiquitous. Throughout history, effective leaders have contributed to improving social and organizational functioning in all elements of human endeavor: professions, governments, societies, and industries. Myriad research shows leaders make a difference in contributing to organizational success (Northouse, 2016). Yet while *leaders* may be easy to identify, *leadership* is much more difficult to define. In his landmark work, Fiedler (1971) quipped that there are almost as many definitions of leadership as there are leadership theories, and that there are as many theories as there are psychologists studying leaders. While finding a proper definition of leadership is certainly challenging, defining leadership in the context of organizational requirements is critical to providing boundaries for research within certain situations and industries.

While Weston (2008) succinctly defines leadership as an individual's influence interactions with followers to achieve determined goals, Day and Antonokis (2012) posit that

leadership definitions must include a description of desired leader's characteristics and behaviors as well as the methods of applying the various types of influence processes. The elements of character and behavior include the various attributes the leader possesses as well as the followers' perception of the leader. Rosa-Pires, Nunes, and Pinheiro (2011) state that an additional factor that must be considered when evaluating effective and proper leadership is the match between leader and team member, the prioritization of individual versus task success, and what is identified as the desired end result of the influence interaction. The interface of these elements of character, behavior, influence and desired outcomes is heavily dependent on the personality, style and approach of the leader, and all are dependent on the way leaders build trust. Context for leader behavior and associated success is key.

Day and Antonokis (2012) also believe any influence process used by the leader must be shaped by the various elements found in this context – the organization's mission, the time of application, the resources available, the other personalities and cultures on the team - where the valuable "influencing" takes place. This is reinforced by Stogdill's (1948) dictum that those who are seen as leaders in one situation may not be seen as leaders in others further complicates the task of defining leadership. All of the personal and professional characteristics and traits that are valuable, the method and style of interaction between leader and led that contributes to influencing the team, and the culture, mission and outcome of the organization must all be part of this context of leadership. These factors play a role in properly defining leadership given the situation, the culture, the mission, the type of organization, and the people involved.

The context and culture of healthcare leadership. All of these various dynamics compound the challenge of finding a proper leadership definition for an organization as complex as healthcare, given it is important to describe how the leader's character, traits, interactions, and

influence methods bear on members of teams that are interprofessional by design. Considering these factors are critical when teaching or training physicians in the art of healthcare leadership. The leader must understand how *leading in context* requires an understanding of the culture, mission, objectives and especially the personalities found in the organization, group or members of the profession or the industry being led.

Zaccaro (2001) states that leadership is required to direct and guide organizational and human resources toward strategic objectives while ensuring organizational functions are aligned with the external environment. All personality and contextual elements - as well as different leadership theories that are prevalent in a variety of industries or types of organizations - influence the type of leadership that is applied in an industry as complex as healthcare. But effective leadership applied to treating or serving a patient is different from leadership that is most effective in healthcare marketing, patient billing and system budget formulation, or the efficient administration of a hospital. A physician treating an individual patient – as a member of a professional body serving an individual requiring care – will define situational leadership differently than the Chief Financial Officer attempting to close the books on the fiscal year. For these reasons, this mix of professional and business approaches, requires understanding that the healthcare industry requires a much broader awareness of how the various types of leadership and leadership theory may come into play.

Physicians: leading in context. Kaplan and Terrell (2014) observe that physicians usually do not possess the required skills or the innate desire to take on the responsibilities and accountability that is normally associated with healthcare industry leadership. Moreover, these authors suggest that a lack of formal leadership and management training in physicians' medical education, during their residency and in the early years of their practice has likely exacerbated

that presentiment. Physicians see themselves as doers rather than strategic designers, reactive to treating emergent medical issues rather than engaging as part of a strategic healthcare team. Physicians are usually more empathetic to patients' needs rather than being objective in balancing multiple points of view from the other members of the healthcare team. Finally, physicians strive for immediate tangible results in patient treatment and are less enamored with the delayed gratification that comes with long-term strategic victories.

Additionally, in the past physician professional development has almost exclusively focused on improving knowledge associated with the advancement of the science of medicine, and even the reward system for career advancement is biased toward obtaining continuing medical education (CME) credits. The exigent requirement for increased effectiveness for any physician leading a team approach to healthcare challenges has created a need to adapt that approach (Kaplan, Porter, & Klobnak, 2012; Angood & Birk, 2014; Butcher, 2015; Perry, Mobley, & Brubaker, 2017).

In 2002, the Accreditation Council for Graduate Medical Education (ACGME) – a body that accredits over 9,000 medical residency programs across 135 medical specialties across the United States – identified six core competencies that Graduate Medical Education (GME) programs must use in the future to measure their residents in training. Those six – patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and systems-based practice – are required for any medical school to receive federal funds (Holmboe, Edgar, & Hamstra, 2016). These competencies broaden the view of physician leadership and are contributing to expanded discussions within the medical profession as to how physicians must evolve from solo practitioners into doctors who must prepare to lead multi-disciplined teams. Those discussions have included how “leadership” might

soon become a required seventh competency (Frich, Brewster, Cherlin, & Bradley, 2014; Hartzell, Yu, Cohee, Nelson, & Wilson, 2017).

Lee (2010) rightly states physicians have limited control over changes across healthcare if they only focus on their patients, implying that medical professionals must shift at least some of their attention toward helping healthcare organizations become more effective. That requires physicians to increase the coordination between interprofessional teams that communicate, share information and drive all of their colleagues – other doctors, nurses, administrators, policy makers – toward improved systemic performance. Stoller (2008) declares that physician leadership is becoming increasingly critical to healthcare success, suggesting that beyond the basic skills of communication, emotional intelligences, and lifelong-learning, the physician-leader must be coached by administrators in how to gain at least a modicum of knowledge in leading industry management processes, strategic problem solving, and guiding through healthcare regulations and trends. Lerman and Jameson (2018) recommend that the desire of any physician leadership program should be to develop a medical professional who can better align beneficial healthcare strategies with the cultures and strategies of others in the industry.

Leadership in the healthcare industry. Dierendonck and Nuijten (2011) describe the challenges of measuring and defining effective leadership associated with five leadership approaches, styles or frameworks (Leader-Member Exchange [LMX], charismatic leadership, transactional leadership, servant leadership, and transformational leadership). The first, leader-member exchange or LMX, suggests that leaders use positional leadership advantage as a means of gaining positive actions from their followers (Danserau, Graen, & Haga, 1975). This implies that the leader's attributes, communication skills, and intellectual understanding of the intended goals or outcomes are critical in the LMX approach. Charismatic leadership requires a leader to

actively model goals, behaviors, and expectations (Shamir & Howard, 1999). A related contextual leadership definition might suggest that a charismatic leader must establish and continuously polish leader behaviors, since that approach becomes important in providing an example to the follower. Servant leadership – where the leader prioritizes “serving” the followers as described by myriad researchers (Greenleaf, 1977; Graham, 1991) – requires a definition emphasizing the leader’s role in caring for and focusing on personal development or advancement while ensuring the follower’s growth and welfare. An organization interested only in market advancement, return on capital or fiscal investment would likely rely on transactional leadership, given that followers in the specific business directorates of a transactional organization place their priorities more on quantitative performance linked to resultant increased resources or advancing rewards (Hoyt & Blascovich, 2003).

All of these leadership approaches apply to and are used by the variety of people who work within the spectrum of the healthcare industry. The CFO of any hospital is mostly a transactional leader, as she ensures successful yearly budget closeout. The nurse on the ward is relying primarily on either the LMX or charismatic leadership model, as he nurtures a patient to take their meds, get their therapy, or follow prescribed rehabilitation during an extended stay on a ward. Due to their training in the science of medicine and their responsibility in directly treating and interacting with patients, physicians are trained in applying a servant’s leadership approach in their interactions, focusing on the care and well-being of singular patients that enter their clinic with specific health issues.

Healthcare: Applying a Transformational Leadership Framework

Given the diverse approaches to leadership applied by the different members who contribute to a diverse healthcare team, the model described in transformational leadership is

useful and applicable as an overarching framework for the healthcare industry. This model is particularly beneficial in describing the needed collaboration required on healthcare's interprofessional teams. Replacing what was once termed "interdisciplinary medicine" (Castro, Nystrom & Burgess-Ellison, 1986), interprofessional health collaboration is described when two or more individuals associated with health or social care but representing different aspects of care – like doctors, nurses, and administrators - learn from, with, or about each other's cultures or approaches (Barr, Koppel, Reeves, Hammick & Freeth, 2005; Craddock, O'Halloran, Borthwick, & McPherson, 2006; Bridges, Davidson, Odegard, Makie, & Tomkowiak, 2011). The needed collaboration and cooperation that contribute to interprofessional success is achieved through the application of transformational leadership.

Transformational leadership in healthcare. In the past forty years, researchers have produced a significant body of study surrounding the elements of transformational leadership in various organizations such as education (Koh, Steers & Terborg, 1995), business (Howell & Avolio, 1993), and the military (Kane & Tremble, 2000). The framework has been applied in a variety of circumstances, from the field (Yammarino, Dubinsky, Comer, & Jolson, 1997), to the lab (Jung & Avolio, 1999), to experimental settings (Barling, Weber, & Kelloway, 1996). Much of this research is driven by the conceptualization of four dimensions of transformational leadership approaches in a variety of situations, environments, and types of organizations. The four dimensions of the transformational leadership framework apply to the interprofessional teams in healthcare: *charisma or idealized influence, intellectual stimulation, inspiration of an individual's motivation, and individualized consideration* to the follower's esteem (Bass, 1985, 1995, 1998, 1999).

Charisma, or idealized influence, is the way a leader displays his or her character, behavior, adherence to values, intellect and exhibition of various qualities admired by the followers. *Intellectual stimulation* is the way a leader solicits input from the followers while challenging assumptions, taking risks on behalf of organizational goals, and developing the follower to accomplish difficult tasks. *Inspirational motivation* is the degree to which the leader communicates vision, methods and strategy for the achievement of objectives in a way that is appealing to the follower. *Individualized consideration* is the way in which the leader develops the follower, builds trust with the individuals, shows empathy toward the follower and attends to the follower's needs. (Judge & Piccolo, 2004). These dimensions describe leader behavior and related influence methods that concentrate on short term requirements (e.g., the needs of teams treating patients and the everyday coordination of team efforts), but also address the requirement for ensuring long-term organizational requirements while facing industry challenges.

Transformational leaders display character, values and a moral foundation that is apparent to the followers; they model behavior that contributes to organization success and cultural change, and they successfully influence their subordinates to tackle the toughest long-term problems while providing a vision that will achieve results – in the moment and in dealing with strategic issues - when faced with complexity (Yaffe & Kark, 2011).

Transformational leaders care for their people while simultaneously addressing long-term organizational, institutional or professional objectives (Schuh, Zhang, & Tian, 2013). While various leadership approaches may be used when individuals perform actions within specific and immediate areas of healthcare like patient care, business transactions, or policy determination, transformational leadership correlates to long-term strategic elements associated with the interprofessional dynamics found in the healthcare industry.

The four dimensions of transformational leadership describe the required actions demanded of leaders in unique settings. To be considered a “transformational leader,” an individual must exhibit the key attributes of character, presence and intellect while also possessing the competencies of building trust through communication and influence, developing the follower through myriad means, and taking actions that care for the follower while also contributing to organizational objectives. These three attributes and three competencies reflecting and expanding upon the four dimensions of transformational leadership are found in the military’s doctrinal BE-KNOW-DO approach to leadership development (Headquarters, Department of the Army [HQDA], 2012). Those attributes and competencies are shown in Figure 1 (Leader Attributes and Competencies). This chart will serve as the leadership model - transcribed from the military to healthcare - in the seminars associated with this research (Hertling, 2016), and will be further described in chapter three.

ATTRIBUTES	CHARACTER	PRESENCE	INTELLECT
	<ul style="list-style-type: none"> • Background • Mission • Self-Discipline • Values • Culture • Empathy • Self-Discipline 	<ul style="list-style-type: none"> • Bearing • Fitness • Confidence in action, words, and manner • Resilience 	<ul style="list-style-type: none"> • Mental agility • Sound judgment • Innovation • Interpersonal tact • Expertise and practical competence
COMPETENCIES	LEADS	DEVELOPS	ACHIEVES
	<ul style="list-style-type: none"> • Builds trust • Communicates • Leads by example 	<ul style="list-style-type: none"> • Creates a positive environment • Seeks ways to improve • Develops others - teaches, coaches, counsels, mentors • Stewards the profession 	<ul style="list-style-type: none"> • Focuses on results

Figure 1. Leader Attributes and Competencies

In applying transformational leadership within an organization, Burns (1978) states that such leadership requires the leaders to first identify the change needed in an organization, then create a vision to guide that change through the use of inspiration or influence techniques, and finally stimulate and encourage that change by establishing a shared commitment of the various and unique members of the group. Bass (1985) expands on Burns' definition by suggesting that transformational leadership is mostly "defined based on the impact it has on followers...and [it relies] on the transformational leader garnering trust, respect and admiration from the followers." The Army Doctrinal Manual (HQDA, 2012) defines [transformational] leadership as "the process of influencing people by providing purpose, direction and motivation to accomplish the mission and improve the organization," all of which apply to the challenges of influencing various members of the interprofessional team to reach an end-state objective.

During six years of instructing physicians and asking for their insights and feedback on the type of leadership they believe is needed to address the challenges within healthcare, those who have previously participated in physician leadership development training (similar to that offered to the participants in this research) contributed the following definition unique to the demands of physicians leading interprofessional teams (Vincent, Andrews, Hertling, Galura & Forlaw (2016); Hertling (2016): "Leadership is the art of understanding individual motivations, influencing groups of people, building teams, and communicating purpose in order to accomplish stated goals while improving the organization and contributing to its culture." The use of this definition – which is consistent with the elements reflected in a transformational leadership approach - is the basis of the behaviors we intend to generate in the leadership development program analyzed in this research. The behavioral components associated with this definition – the exhibition and modeling of leader attributes and competencies that generate trust,

understanding other's motivations and their contributions to the team effort, communicating and providing adequate information exchange, accomplishing goals and contributing to organizational culture – are quantifiably measurable. The reflections provided by others who are observing the leaders' actions are qualitatively discernable.

Leadership Development: Why Healthcare Must Be Different

Leadership development programs abound in every type of industry, organization, service and profession. Approaches are typically organization-dependent and are often focused on the style of desired leaders, associated (and often singular) business culture, and coveted management approaches suited to the particular industry. Leskiw and Singh (2007) suggest the design of any effective leadership development programs for specific industries must consider and incorporate six factors. Those include a *needs assessment*, the combining of the *right audiences* in the program, infrastructure to *support* the development, the implementation of a *learning system* that will drive the individual programs, a means to *evaluate* the change, and actions that will *reward success*. In applying those factors to healthcare, it becomes apparent that organizations must refine leader course objectives and goals, determining type of and approach to programs that drives collaboration between various members of the team to overcome fault lines or cultural gaps, develop ways to contribute to leader requirements, and find ways to evaluate the training (Kannampallil, Schauer, Cohen, & Patel, 2011).

Various organizations used these factors in developing and offering myriad leadership development approaches for executives and members of the staff who want to lead and manage in their specific type of organization (Klimoski & Amos, 2012; Delbecq, House, De Luque & Quigly, 2013; Packard & Jones, 2015; Dawlabani, 2014). Firms as diverse as Disney (Alonzo, 2007), General Electric (Waters, 2009), Starbucks (McLean & George, 2006), and Boeing (Yost

& Plunkett, 2002) all tout how particular leadership training methodologies produce the type of leaders and manager that best contribute to the value of their particular firm. A review of any leadership development program indicates some generic and some industry-specific topics such as effective communication, executive and employee development, methods of market orientation, standards of the organization, industry-related organizational strategy, or specific service requirements. The costs, time, resources involved in leader training also vary by industry, depending on the leader attributes, leader competencies, professional culture, team performance or organizational objectives desired within the context of the particular firm (Black & Earnest, 2009; Coloma, Gibson, & Packard, 2012; Parry, Mumford, Bower, & Watts, 2014).

Those who drive the *business* of healthcare – non-physician business leaders who serve as hospital executives or members of the administrative staff in the healthcare industry – have as leadership development objectives some of the same leader and management training and education requirements undertaken by executives in other organizations or industries (Eckler & Schneller, 2015; McAlearney, 2006; Hertling, Dennis, & Bartlett, 2018). The need for ensuring effective communication and information exchange; understanding and applying the knowledge of market orientation or driving the development of strategic initiatives; making tough leadership choices on capital expansion, financial strategies, supply chain management or human resource allocation; and understanding the human resource dynamics of leading diversity, inclusion, recruitment, retention and pay challenge the healthcare business leaders in the C-suites of every hospital or healthcare system, just as is done in most other businesses (Kaplan & Feldman, 2008; Peters et al., 2014).

There is the need for healthcare executive leadership development programs to provide growth to the executive teams that conduct operations, manage human resourcing, drive fiscal

efficiencies and execute other aspects of business administration, but there is also the requirement for hospital programs to contribute to the effectiveness of leading in *clinical excellence* that is necessary for those guiding high-performing medical teams. For that reason, most healthcare organizations, systems or hospitals design and execute leadership development programs that are principally geared toward *industry or service management functions*, with a nod toward clinical excellence, and these programs are similar to those used in most other industries (McAlearney, 2006; McAlearney, 2008; Eckler & Schneller, 2015). For the non-physician healthcare executives – and it is reported that more than 95% of those who lead hospitals and healthcare systems in the US are *not* physicians (Falcone & Santiani, 2008) - studies have shown these adapted programs garner positive results.

But given healthcare is exceedingly and increasingly complex and the current desire by healthcare industry leaders is to increase the role of physicians in providing additional medical insights for problem-solving and leading interprofessional team-building, hospitals must adapt even more to find ways to incorporate physicians into these leader programs. The transfer and adoption of the leadership development program approach from other industries into healthcare does not address all the relevant professional and industry requirements that encroach on physicians (King & Nesbit, 2015). The leader training, culture, management and professional requirements demanded of a physician preparing to be a valued member of a team or even lead multifunctional and interprofessional healthcare teams is very different than that offered to the hospital business executive during her/his rise up the corporate ladder. In healthcare, such leadership development must include medical professional requirements and, in most cases, a different approach to building, leading and managing interprofessional teams.

Physicians *are not* trained, educated or have a background as managers or administrators. Doctors *are* members of a professional body with requirements imposed by the medical profession. Continuous training and education in the science of their field of endeavor, establishment of and adherence to professional values and ethos, the requirement to discipline or dismiss fellow professionals who violate the standards of the profession, the capacity and ability to engage in service to the society that others cannot perform all affect the way a physician might lead (Larson, 1978; Montgomery, 1989; Snider & Watkins, 2002). Apart from the skills, attributes and competencies exhibited by those who manage or administer the business of healthcare, physicians strive to maintain their role in a professional body that prescribes clinical autonomy in decision-making. That autonomy is primarily directed toward individual patient care rather than prioritizing the building of teams necessary to solve industry challenges (Baker & Denis, 2011). The cultural, training and educational gap between hospital administrators and physicians is wide and must be considered when designing effective healthcare leadership development programs.

Moreover, due to the requirement to interact with various others medical professionals (nurses, unique physician specialists needed for coordinated care) and executives, the teams that might be led by physicians in a hospital environment are professionally and culturally diverse and are often in constant flux given that various members of the team are continuously changing. This requires physicians to learn leadership strategies that are needed for quickly building cohesion, effectiveness and efficiency in teams that are often not member-specific. Moreover, physician leaders usually do not have the opportunity or time to engage with or develop individual team members prior to the formation of a team.

Most literature addressing transformational leadership observes leaders who have stable team membership (Lehmann-Willenbrock, Meinecke, Roward, & Kauffeld, 2015; Chi & Huang, 2014; Dionne, Yammarino, Atwater, & Spangler, 2004). But these are not the kind of ad hoc and transient teams usually led by physicians.

The focus of the present study is therefore different than most transformational leadership research. The measure of team leadership used was adapted from a study conducted by Smith-Jentsch, Johnston, and Payne (1998) that observed leaders of interprofessional military teams as they adapted to various complex tasks in a challenging environment. The environment, leadership challenges, team-building requirements and task complexities found in the military profession are similar to the kind of issues faced by medical professionals.

Gulfs, Gaps, and Faultlines

Waldman and Cohn (2008) cite the differences in prioritizing concerns, addressing issues and approaching problem-solving when studying the dynamics between physicians and healthcare administrators (and also, at times, when researching the collaboration between physicians and nurses), suggesting this dynamic adds to a significant gulf, or “gap,” that further contributes to a lack of trust and subsequent dysfunction within the healthcare industry. The rift goes beyond culture and appears to be a result of differences in thinking, approaches, priorities, problem solving and roles within the healthcare ecosystem. This type of group-subgroup phenomenon is described in team faultline theory research by Rico, Sanchez-Manzanares, Antino, Lau (2012). Faultlines, defined as “hypothetical dividing lines that may split a group into subgroups based on one or more attributes” (p. 407), inhibit team leadership and essential group and team processes, interfere with effective communication and related critical

information exchange, reduce team cohesiveness, and negatively affect desired outcomes (Homan, Knipperberg, Van Kleef & DeDreu, 2007; Gibson & Vermeulen, 2003).

Rico et al. (2012) posit such fault lines exist for three specific reasons: inherent differences between individuals (such as what might be found in each individual's cultural, training or educational backgrounds), contextual categories (such as the perception of the way the individual contributes to the team), or readily identifiable differences (such as perceived position of authority, status or power). While faultlines are problematic in any large or diverse organization where communication and information exchange are critical for success, these chasms are especially detrimental in healthcare, where group-subgroup divides are further exacerbated by even more diverse subgroup approaches to patient care (given the number of physician specialties and related subgroup cultures), as well as the unique professional-business approach to solving industry challenges.

The transformational leader of any team is required to exhibit and model the leadership attributes, competencies and influence methods that contribute to the inculcation of trust with followers and the concurrent communication of organizational vision and cultural strategy. But in a complex interprofessional team – with subgroups that bring to the team different cultures, training and educational backgrounds, diverse approaches in contributing to strategic success, and unique status and roles – leaders must model shared behaviors and understand the members of their team while finding ways to foster improved communication and effective information exchange.

Communication delivery. A critical component of teamwork that has been linked to more effective team performance in teams with members from diverse technical backgrounds is effective communication delivery (Smith-Jentsch et al., 1998). Interprofessional teams often

experience coordination breakdowns stemming from ambiguous or non-standard terminology that is not understood by members of the team that hail from different professional cultures. Particularly in a fast-paced and high stress environment such as healthcare, this can result in dysfunction and even disaster. Leaders that understand and actively model a shared communication delivery methodology result in more effective and collaborative teams. Effective leadership of an interprofessional team requires effective communication delivery techniques and shared cultural understanding.

Information exchange. Another component of teamwork, and one that can be negatively affected by team faultlines, is information exchange (Smith-Jentsch et al., 1998). Effective information exchange requires that team members know what to pass to whom and when, and the leader and team members must be willing to do so. Research has shown that when team faultlines are salient to team members they are less likely to engage in an elaboration of ideas or information hoarding (Rico et al., 2012). Team leaders can foster information exchange within their teams by providing constant updates, shared vision, and strategic summaries that allow for shared and common situational awareness. Leaders must also ensure accurate and adequate information exchange. Effective leadership of interprofessional healthcare teams require that physicians model, share, and facilitate information exchange, particularly across the known active faultlines.

Hypotheses

Evaluating changes in leaders' behavior. Clark (2012) and Watkins, Hyberstan, and deMarris (2011) describe the value of evaluating leadership programs in various ways and with feedback from different observers. Various studies show how quantitative and qualitative data provide effective ways of evaluating outcomes related to leader

development (Grove, Kibel, & Haas, 2007; Hannum & Martineau, 2008; Hannum & Craig, 2010; Leskiw & Singh, 2007; Watkins, Hybertsen, & DeMarrais, 2011). Other studies show how improvement in self-reported learning over time reflect not just the extent of cognitive learning, but also behavior change that contributes to greater self-confidence, contribution to influential relationships within groups, a shared purpose and increased trust from colleagues on the team (Davis et al., 2006; Duffy & Holmboe, 2006; Black & Earnest, 2009; Fernandez, Noble, Jensen, & Steffen, 2015; Fernandez, Noble, Jensen & Chapin, 2016).

Kirkpatrick and Kirkpatrick (2006) offer a framework for conceptualizing training evaluation, delineating four distinct levels associated with any successful approach. The first level, reactions, includes participants' enjoyment of and belief in the usefulness of training. The second level, learning, assesses changes in knowledge, attitudes, and skills and the results of what a trainee "can do" as a function of training. In the present study, data on participants' reactions and learning were collected via a qualitative (open-ended) survey and will be coded for training-relevant themes, as well as to determine any themes prevalent in the two types of training populations. The third level of training evaluation, behavior, assesses changes in comportment and related actions outside the learning environment (e.g., activities observed by others, approaches taken on-the-job, etc.). In this study, data on participants' pre- and post- behavior was measured using a quantitative rating scale in which participants, their colleagues, and their spouses indicated the participants' exhibition of behaviors taught and discussed in the seminars outside of the training environment. The final level of training evaluation, results, indicates differences in outcomes due to training (e.g., team performance in complex medical situations, dedication to solving a challenging task that contributes to solving elements of the triple aim, physician engagement with team

members or reduction of patient deaths). In a healthcare environment, such outcomes are unique and are almost exclusively a function of many factors beyond the physician him/herself and thus are outside the scope of this study.

Experimental hypotheses in the present study will analyze quantitative data indicating pre-post changes in behavior. The first two of four hypotheses state:

H1: Physician participants in a leader development program will show significant pre-post improvement in self-rated a) leadership, b) communication, and c) information exchange.

The identical ratings of physician participants' on-the-job behavior obtained from colleagues and spouse/partners who have the opportunity to observe such behavior will be used to test the second hypothesis:

H2: Ratings collected from colleagues (i.e., other physicians and nurses) will show significant pre-post improvement in a) leadership, b) communication, and c) information exchange.

Evaluating the effect of class composition. When different groups from different cultures are segregated for training or education sessions, there is the potential for a predominance of group bias based on group culture and subculture. Healthcare is a culture, but the various subgroups of doctors, specialists, nurses, and administrators form unique subcultures in this industry. While there is the necessity to create stronger teams to address the apparent challenges in the elements of the triple aim, counterintuitively most healthcare organizations train and educate their employees and professionals in different environments. When leaders on various teams are separated by subgroups, that does not contribute to the team's overall performance and the team is therefore less effective and efficient (Meyer, Shemla, Li, & Wegge, 2015).

Healthcare executives and hospital administrators study ways to improve the collaboration of the core business elements of healthcare and look for ways to improve the management and processes linked to the business end of the triple aim (especially the area associated with access to care and cost of care). However, medical professionals – the physicians, nurses, and clinicians – primarily focus their training and education attention on treating disease, operating across the care spectrum, and interacting with the patient (the final triple aim objective of improving care...from prevention to post-acute treatment). Kaissi (2005) posits that physicians and administrators are members of different “tribes” – further exacerbating their position on different sides of the previously discussed faultline - as a result of separate training, education, socialization, value expectation and position of authority within the organization; the stark differences in assumptions, values and artifacts are at opposite ends of the spectrum in every area as shown in Figure 2 (Challenges of Healthcare Teams).

THE CHALLENGES OF HEALTHCARE TEAMS

	AREA	BUSINESSMEN/WOMEN	HEALTHCARE PROFESSIONALS
BASIC ASSUMPTIONS	Central Logic	Rationalization, efficiency	Collegial, control, expertise
VALUES	View of Work Primary loyalty Responsibility Tolerance for ambiguity Patient focus Timeframe of action View of resources	Make a living To the organization Shared High Broad Middle-long Limited	Work is living To the patient Personal Low Narrow Short Unlimited
ARTIFACTS	Basis of Knowledge Exposure to "others" while training Career Development Vocabulary Relationships	Social/management sciences Little Hierarchical Cost, benefit, revenue, patient satisfaction Hierarchical advancement	Biomedical sciences Great Collegial Quality, patient outcomes Achievement

Figure 2. Challenges of Healthcare Teams (Kaissi, 2005)

Many healthcare organizations attempt to address this trust issue by advancing leadership training for physicians. But because of numerous factors like time, resourcing, ability of

physicians to break away from their role in serving patients, that training is often not conducted with other non-physicians in the organization.

Other hospitals address these needs by providing courses specifically for a physician-only audience. These programs include designing internal leadership development training teams by hiring full-time employees specifically to train doctors (Kaplan and Feldman, 2008) while others contract for consultants or subject matter experts to conduct programs within the hospitals or at off-site locations to contribute to ease of attendance by physicians (Loya, Harris, & Hamm, 2016). These types of programs are costly, often have disjointed objectives not geared specifically to the culture or the specifics of physician leader development and are often ineffective in contributing to multidisciplinary and interprofessional cultural change (Hertling, Dennis, & Bartlett, 2018). Other healthcare systems advantage universities or professional boards that offer off-site education on specific subjects or courses for doctors, but these require physicians to contribute significant time and the associated lost earnings (Danserau, Seitz, Chia-Yen, Shaughnessy, & Yammarino, 2013; Murphy, 2018).

Several authors suggest other ways of improving the relationships between medical professionals and healthcare executives (Kirkpatrick, Shelly, Dent, & Neogy, 2008; Kaplan & Feldman, 2008; Kaplan, Porter, & Klobnak, 2012) while also providing suggestions as to how best to contribute to care effectiveness (McAlearney, 2008). Understanding the differences of culture, background and training found on interprofessional teams requires specific types of training, education and collaboration. Using an *interprofessional education* approach ensures an opportunity for greater collaboration between doctors, nurses and administrators during leadership training and education that will contribute to greater trust, improved communication, and effective team building.

Interprofessional education (IPE), as previously discussed, describes an approach where those representing two or more professions learn in the same environment with the objective of cultivating greater collaboration in healthcare practice (Yan, Gilbert, & Hoffman, 2007; World Health Organization [WHO], 2010). In healthcare, IPE describes educational forums where physicians, nurses and hospital administrators undergo training or education in shared team settings in such a way that trust, improved communication and collaborative work relations are established between groups of individuals who are normally not of the same culture.

The objective of the IPE approach is to generate greater trust and understanding between those who have different backgrounds, who come from different cultures, and who use different approaches to problem solving for any variety of reasons. As discussed, previously, interprofessional education is an innovative strategy to bring the various actors of the healthcare industry together to solve the challenges outlined in the triple aim. This strategy is found to be increasingly useful by many innovative healthcare organizations (Cohn, Allyn & Reid, 2008; Senot, Chandrasekaren, & Ward, 2016; Vincent et al., 2017).

Most researchers in this area have called for the need for greater Physician-Nurse or Physician-Administrator collaboration, and recommendations from myriad studies call for improved coordination between the various leaders in different cultures found within the healthcare industry. For example, in a study on a specific issue that has seen tension in nurse-physician interaction, Senot et al., (2016) state that delivery of effective healthcare service shows methods for greater collaboration regarding evidenced-based standards related to prognosis (an area of disagreement between nurses and doctors). Eckler and Schneller (2015) provide results on a study that analyzes the cause for tension between doctors and hospital administrators created by miscommunication. In one case, physicians did not believe that administrators

understood their clinical needs for specific surgical product selection, while administrators felt physicians did not understand budget and logistical constraints that contributed to not ordering various instruments for the same purpose. Views from both sides of this interprofessional debate contributed to significant dysfunction in one medical facility.

A White Paper on CMO-CFO collaboration proposes greater Chief Medical Officer (CMO)-Chief Financial Officer (CFO) collaboration as a way to increase clinical integration among department and between medical service lines within healthcare organizations and across the U.S. care continuum (American Association for Physician Leadership, 2015). After reviewing various dysfunction within a healthcare facility, Sullivan, Kiovsky, Mason, Hill, and Dukes (2015) recommended ways to solve issues related to the triple aim by suggesting the organization work on consistently building collaborative teams while advantaging the diversity found in the professional and administrative arenas. Kirkpatrick et al. (2008) believe there are deep rifts between the way medical professionals and healthcare executives observe the healthcare environment: non-physician executives focus on the business of healthcare (running the service) while doctors (and presumably nurses) assume more responsibility for clinical care and patient experience and suggest there is the need for a more collaborative and bilateral engagement process, with each group learning, experiencing and understanding the other's problems.

The following sections will connect the literatures on IPE and two strategies shown to be effective at reducing the deleterious effects of team fault lines in prior research.

Rico et al. (2012) recommend two methods that, when combined, are effective for overcoming team fault lines. The first strategy – called crosscutting - involves forming sub-groups in which all members are known to be different in some way as a means to formally “mix

things up.” Crosscutting is “a *decategorization* strategy, that inhibits intersubgroup bias by increasing the perception of overlapping attributes between in-subgroup and out-subgroup members while weakening the category distinctiveness on a target dimension” (e.g., a medical profession versus a healthcare business approach) (p. 409). This tactic is designed to contribute to improved communication and increased team information sharing with the intent of overcoming the divides associated with fault lines (Brewer, 1999; Gaertner & Dovidio, 2000).

The strategy of “crosscutting,” composing groups in which members share goals and objectives (i.e., work in the same industry) while being different in their culture, approach or title (e.g., doctor, nurse or administrator), will reduce the salience of fault lines and improve team processes (Rico et al., 2012). While there are various studies that analyze the effectiveness of these different approaches to physician leadership programs, and cross-cutting suggests what should happen with healthcare professionals, there does not appear to be available research that compares the effect of the same physician leadership course composed of physicians, nurses, and administrators versus one composed solely of physicians.

The effect of interprofessional education. Interprofessional education employs cross-cutting along professional fault lines. A physician’s ability in leading, understanding and modeling various techniques of proper communication and contributing to more effective exchange information should be positively affected by attending an interprofessional (e.g., with doctors, nurses, administrators) leadership training class relative to a physician attending a similar class composed only of other physicians.

Addressing these issues in training or educational formats contribute to improved problem-solving among those with different views of the healthcare dynamic (Devries & Bakker-Pieper, 2010; Stevenson, 2014). Vincent et al. (2017) report the positive and statistically

significant benefits of a physician-nurse-administrator leadership development program (where the subject group was informal and younger leader physicians, more senior nurses, and key hospital administrators) and how the program was beneficial in developing trust, improving collaboration among the IPE team, cultivating positive trends in self-reported practice experiences, and rankings from patients that showed positive changes in treatment and engagement. For collaborative relationships to develop and flourish, each member must contribute to creating mutual or equal power in the relationship (Nelson, King and Bodine, 2008). Interprofessional interactions that are part of leadership development programs have been shown to build this kind of improved methods of communications, greater effectiveness in sharing information and setting an example of professional and personal leadership for members of the team.

Rico et al. (2012) describe a second strategy for reducing the salience of team fault lines and ultimately improving team communication and information exchange. This strategy involves the creation of superordinate group goals as a means of driving team members' commonalities. Superordinate goals – difficult challenges given to interprofessional teams – require members to contribute their unique knowledge while ensuring the team's diversity more effectively achieves solutions to complex tasks that have a common objective (Joshi & Roh, 2009). The course objectives in the homogenous and IPE class did not differ, but the physicians in the IPE class had the opportunity to view these objectives as common goals for physicians, for nurses and for administrators rather than just the physicians alone in the homogenous group. As the IPE seminar received input from other subgroups in their class to see different approaches to common challenges, the expectation is that professional faultlines between the three subgroups would be less salient. Those in the homogenous class studied the same objectives, but an absence

of nurses and administrators in the class did not allow the opportunity to discuss expanded opportunities for problem solving.

In sum, due to the combined effects of cross-cutting and superordinate goals afforded in the IPE class, physicians in the IPE class should demonstrate greater pre-post changes in behavior than is demonstrated by physicians in the homogenous class. As such, the final two hypotheses offered state:

H3: The effect of leadership training on physicians' self-rated a) leadership b) communication, and c) information exchange will be greater for those who participate in an interprofessional class than for those who participate in a class composed of solely physicians.

H4: The effect of leadership training on physicians' a) leadership, b) communication, and c) information exchange as observed and rated by their colleagues (i.e., other physicians and nurses) will be greater for those who participate in an inter-professional class than for those who participate in a class composed of solely physicians.

The collaboration of physicians, nurses, technicians, physician assistants and other clinical personnel in interprofessional leadership programs has been shown in the past to be one way to develop healthcare professionals and healthcare teams (Kirkpatrick et al., 2008).

Bringing the various members of the healthcare team in leadership education and other cognitive pursuits contributes to increase collaboration and may help to overcome poor communication, interrupted information flow, and a lack of trust.

CHAPTER 3 - METHODOLOGY

This chapter provides a description of the participants, how they were selected for attendance, and how they were placed into the two groups for analysis. I will also outline the various elements of the leadership development course that will be used for the study and will then provide a description of the elements of the quantitative survey, the use of supplemental qualitative responses, the planned means of executing the survey, and the data collection process.

Participants

This study was conducted with healthcare professionals serving at a large-scale, non-profit hospital system in the Midwestern United States. This hospital system consists of nine different hospitals located within a large metropolitan area. While the organization has conducted executive leadership development programs in the past to build the leadership and team skills of their high-potential administrators, the organization has never attempted a program designed specifically to prepare physicians to be leaders of interprofessional healthcare teams.

The objectives of the study are to analyze the change in self-reported and observed leadership behaviors as well as to determine whether the composition of participants in the leadership training class – a homogenous group consisting of only physicians or a mixed group that was made up of physicians, nurses and administrators (i.e., interprofessional) - will affect pre-post change in leadership, communication, and information exchange.

Selection of physicians. The selection of physicians for attendance in the leadership course (and for this study) was accomplished as follows. First, physicians were asked to apply to participate. The hospital advertised the program as voluntary and open for all physician applicants and sent mass emails describing the course to all doctors on the medical staff. The hospital Chief Medical Officer sent announcements directly to the medical staff executive committee meetings, announced the course at the hospital board meetings and provided direct messaging to the Chief Medical Officers (CMOs) and the Chief Strategy Officer (CSO) asking for volunteers. Additionally, the CMOs sent letters to physician leaders within the Clinically Integrated Network (CIN) at each hospital campus requesting volunteers for the program. Those physicians who applied were required to complete a hospital-developed application form, a personal one-page biography and a one-page essay as to why they want to attend the course. This process resulted in 122 physician applications for 85 positions available in the two courses. To cull the nominees to the appropriate number, the System's Chief Medical Officer created a selection committee/board made up of all the campus CMOs, two members of the Hospital Quality Board, and three Medical Staff presidents. That board reviewed all the applications, discussed those who were perceived to have the most potential for future service in various hospital and healthcare professional leadership roles, then determined an appropriate mix of

specialty and hospital representation, and then made a final decision on 85 who were selected to attend. One month prior to the start of the course, all applicants were formally notified of their selection.

Selection of nurses and administrators. The hypotheses in the present study were tested by comparing physicians in the homogenous training class with those in the interprofessional class. While data were not collected on those who were not physicians, ten nurses and five administrators were also selected for attendance in the interprofessional class. These 15 class participants underwent a different selection process from the one described above for physicians. First, the hospital tasked all hospital CEOs/COOs and system senior executive leaders to nominate high potential clinical (nurse) and administration staff executives from within the organization. From these 35 high potential candidates, the senior executive leaders of the hospital system (CEO, COO, Chief Medical Officer and Chief Nursing Officer) selected those they determined to be the most qualified to attend. These “most qualified” nominees were culled to ten nurses and five administrators. The nurses represented the Emergency Departments, Intensive Care Units, Surgical Teams, Ward Charge Nurses and Clinical Teams. The administrators all held the title of Vice-President or above and came from key positions in Marketing, Budget, Operations, Strategy and Population Health.

After being notified of selection, participants – each doctor, nurse and administrator - were asked to sign a letter of agreement required by the hospital regarding the attendance in the course. This letter outlined expectations such as timely completion of all assignments, assessments and surveys; completion of a personality indicator test; a “burnout assessment” (devised by the hospital in coordination with a consultancy group); a submission of a

biography and photo for inclusion in the course administrative pamphlet; and requirements for post-course activities. This administrative letter also informed participants of all course rules required for graduation.

Compensation. Employed and contract physicians attending the course were compensated with \$2500, to be paid after successful completion of the course. While this payment was not intended to provide for the loss of patient revenue experienced by each physician while attending the course, the payment served as a good faith measure award by the hospital administrators for participation in the training. Any physician who resigned from the course before completion would lose the stipend, so this did serve as a partial incentive for attendance. Nurses and administrators – as employees – did not receive this stipend, as they would continue to receive their normal employee compensation and experienced no loss of compensation for work hours missed.

Placement into quasi-experimental conditions. The study employs a quasi-experimental design. Shadish, Cook and Campbell (2002) describe the various factors that contribute to a quasi-experiment, such as the descriptive hypothesis associated with the manipulation of causes, pre-test determination, and what might have happened in the absence of some type of stimulus. Of importance, a quasi-experiment lacks a random assignment to condition, but researchers using this type of methodology still exert control over selecting measurements and how nonrandom assignments are executed (p. 14). In the present study, the participants (i.e., physicians) were not assigned to conditions using a random process. Rather, physicians were placed into one of the two course conditions - homogenous class composition or interprofessional class composition - to ensure an assortment of physician specialties (i.e., surgeons, family practice physicians, internists,

psychiatrist, etc.), a near-equal percentage of gender mix, and appropriate representation of the hospital campuses found within the hospital system in each of the two conditions. Given there were several campus-level Chief Medical Officers and physician clinic directors applying for and selected to attend, those physicians occupying formal senior physician leadership roles were also equally divided between the two groups. The design had attendees in two groups.

The first group – the homogenous (“blue”) group – consisted of 50 physicians (14 women and 36 men, or 28%/72% female/male split) representing a variety of sub-specialties. Specifically, 21% are family practice physicians, 14% are surgeons (of various specialties), 10% are obstetricians or OB/GYN physicians, 10% are internists, 8% are emergency or acute care physicians, 10% are pediatric physicians, 5% are radiologists, 10% are psychiatrists and 12% practice a unique medical specialty (e.g., neurologist, pulmonologist, etc.). There are no nurses or administrators in this group.

The second group – the interprofessional (“green”) group – consisted of 35 physicians (10 women and 25 men, or a 29%/71% female/male split) who closely mirror the specialties in the homogenous group. Specifically, 21% are family practice physicians, 17% are surgeons, 8% are obstetricians or OB/GYN physicians, 8% are internists, 16% are emergency or acute care physicians, 5% are pediatric physicians, 6% are radiologists, 5% are psychiatrists, and 12% also practice in a unique specialty. Participating in this class but not analyzed as part of the present study are ten nurses and five hospital administrators. A more visual breakdown of the two groups are is shown in figure 3 (Physician Specialty Breakdown).

Blue Group (Homogenous, 50 physicians)

- 14 women/36 men (28%/72% ratio)
- 21% Family practice
- 14% Surgeons
- 10% Obstetrics or OB/GYN
- 10% Internists
- 8% ED or Acute Care
- 10% Pediatric
- 5% Radiologist
- 10% Psychiatrist
- 12% “Unique” specialty (neurologist, pulmonologist, etc)

Green Group (IPE, 35 physicians, 10 nurses, 5 execs)

- 10 women/25 men (29%/71% ratio)
- 21% Family practice
- 17% Surgeons
- 8% Obstetrics or OB/GYN
- 8% Internists
- 16% ED or Acute Care
- 5% Pediatric
- 6% Radiologist
- 5% Psychiatrist
- 12% “Unique” specialty (neurologist, pulmonologist, etc)

Figure 3. Physician Specialty Breakdown

Procedure

Data collection. Participants in the research were tasked to complete the identical self-ratings of their a) leadership, b) communication, and c) information exchange 30-days prior to the first leadership class and immediately following the completion of the last class (see Appendix B, Participant Self-Reporting Survey). Identical pre-post ratings were also requested and collected from one physician and one nurse colleague, as well as a spouse/partner, if participants were willing to provide that personal information. These “observers” were asked to provide observations on the individual physician participant’s leader behavior in the professional healthcare setting and at home. Additionally, physician participants were asked – if they felt it appropriate – to provide the names of their spouse/partners, and those individuals also completed the pre-post ratings while observing the individual physician in a personal rather than professional setting (see Appendix D, Observer Informed Consent and Survey). The observers received the pre-course survey one week after the return of all participant surveys, and the observers received the post-course survey on the same day the participants received their survey (i.e., the final day of the course). In the post-course ratings generated by both professional and personal observers, an

added free-response question requested a description of any particular interesting leadership changes exhibited by the physician they observed. Finally, seminar participants were asked to complete a mid-course, voluntary, eight-question, free-response feedback questionnaire after lesson four (see Appendix C, Participant Mid-Course Feedback). That questionnaire reinforced a “development of the team” objective taught in lesson four, wherein they were trained on the proper methods of critiquing members of their team. All participants and observers were required to complete an informed consent that was embedded within their respective surveys (Appendices A and D).

Description of the Course

All physicians participated in one of two Physician Leadership Development seminars scheduled to take place in five-hour monthly seminars occurring once per month for six months. Both seminars were taught by the same instructor during the same morning hours (7 a.m. to 12 p.m.). The all-physician group met on Wednesdays and the mixed group of physicians, nurses and administrators met on Thursdays. All teaching material, methods of instruction, session objectives, required assignments and discussion of theory, methodology, items for dialogue were the same for each class. Participants were only allowed to attend the seminars with their assigned groups. The only differences between the groups were the unique exchanges that occurred between the participants and instructor and among the participants within the group. All lessons were directed toward meeting various seminar objectives, and all of those were associated with understanding elements of leadership, leader attributes and competencies, influence methods, communication techniques and ensuring effective information exchange. The course’s critical learning objectives centered on ensuring the individual’s understanding of his/her role in the medical

profession, the attributes and competencies described in the leadership model provided in chapter 2, and the responsibility of leaders for the effective execution of team leader roles within a healthcare organization. Additionally, the course had the objective of ensuring participants understood how leadership excellence in health care is primarily focused on effective patient outcomes, meeting the challenges outlined in the triple aim (plus one), and organizational cultural and strategic effectiveness.

The first two seminar sessions – a total of ten hours of seminar work over two months encompassing lesson one and two – required participants to explore the profession of healthcare, the definition of leadership, the attributes and competencies required of leaders, and to become familiar with how leaders and followers interact in high performing organizations. These first two sessions focused on developing the attributes of a leader, with participants being introduced to leader self-awareness, strengths and weaknesses of leaders, leadership styles and leader’s character, values and presence. The objectives were to describe and discuss the attributes of effective leaders while introducing the requirements for effective communication, methods of information exchanges, and the dynamics of leadership needed on successful teams. The third and fourth seminars explored the various dynamics of dyadic leadership, one-on-one engagements and interactions with patients, and the leadership dynamics needed to build healthcare teams. These two seminars centered on assisting those in leadership positions understand various influence methods, the requirement to know the motivations of each team member, and the leader’s requirement to achieve a desired result with various members who contribute with diverse skills in various ways to his or her respective team (e.g., overcoming interprofessional fault lines). Seminars five and six focused on understanding the role of the leader in building and leading both

small and large teams and in contributing to the strategies and objectives of the organization and of healthcare at large. Participants discussed the various methods and dynamics necessary in leading high-performing teams in various environments, and they also received an introduction to the elements of situational leadership, strategic framing, models of team development and the understanding of how leadership, communication, and information exchange contribute to effective team-building. As part of the final seminar, participants attended briefings regarding the strategies of the organization and participated in an extended panel discussion with key C-Suite leaders regarding the physician's role in leading interprofessional healthcare teams.

Prior to the start of the course, each participant received a course pamphlet with assigned reading related to the objectives and subject matter for every lesson, an outline of each seminar, the anticipated focus of discussions for the seminars, and the participant responsibilities. During each seminar, the instructor engaged participants to generate discussion and dialogue and assigned teams within the group to provide information briefings regarding their observation of seminar topics observed in their work environment. After each seminar, participants were tasked with homework linked to further exploration of the topic discussed during the seminar, with activities observed within their own work environment. At the beginning of the following session, physician participants were required to report their observations in a shared briefing with their seminar-mates.

Measures

Quantitative data. Course seminar participants in both groups received an email with and informed consent and a 16-question survey 30-days prior to the start of the class (Appendices A and B). This survey was adopted from research addressing how leadership

is related to team-building, completed by Smith-Jentsch, Johnston, and Payne (2008). The rating scale of the survey allowed physicians to self-report elements aligned with the course objectives on a 6-point Likert scale ranging from 1 (very rarely) to 6 (almost always). Ten questions reflected the various attributes and competencies required of leaders and elements of influence and developmental requirements that all are considered critical to successful transformational leadership (e.g., “I exhibit values and behaviors that others admire,” “I take time in helping other people develop and reach their potential,” and “If members of my team make errors, I take appropriate action to correct them and hold them to professional standards.”). Three questions focused on methods and styles of effective communication (e.g., “I provide clear direction when communicating to others” and “I communicate using the most effective mode, given the nature of the message”). Finally, three questions also pertained to information exchange (e.g., “I proactively provide information to team members who need it” and “I provide big-picture summaries to my team to help them understand the situation”).

The participants were told the survey would take between 10-15 minutes, and the survey included an informed consent document. The survey asked class participants to provide their name, their position at the hospital (i.e., physician, nurse, administrator), and job title or physician specialty (i.e., radiologist, charge nurse, vice-president of marketing, etc.). Within the participant’s survey, physicians were also asked to provide the email address of a physician colleague, nurse colleague, and spouse/partner (if applicable) that they would request to serve as observers. These individuals would also be asked to voluntarily participate in the evaluation of the individual physician participants using identical pre-post surveys with an embedded informed consent (Appendix D). The

questions asked of the observers mirrored those asked of the physician participants, with the only difference being appropriate use of pronoun descriptors (e.g., instead of “I provide clear direction when communicating to others,” the observer questions were “This physician provides clear direction when communicating with others,” or “my spouse/partner provides clear direction when communicating with others.”).

Email reminders were sent every three days requesting participants and observers return their survey prior to two weeks before the start of the course, and similar reminders were sent upon completion of the course requesting return of surveys within two weeks of the end date.

Data collected via qualitative approach. A qualitative data set was collected in the course from the seminar participants. As a *voluntary* homework exercise posted after seminar four, participants were asked to provide a critique of the course by answering an email that listed eight questions (Appendix C, Participant Mid-Course Feedback Questions). Questions one through six of this questionnaire requested participants’ perception of their personal behavioral changes associated with the three course themes of leadership (attributes and competencies), communication methods, and information exchange. Question seven was administrative in nature, requesting feedback on which seminar topics were most interesting and which topic areas did the participants think might be eliminated or reduced from the course in future lessons; this question was not part of the themes or the coding but will be used to adjust future leadership course offerings. The final question (question eight) requested the participants’ views regarding how the course might contribute to increasing healthcare collaboration and interprofessional teaming within their organization.

This questionnaire was designed to collect comments that would supplement and provide additional insights to the data collected via quantitative approaches in the pre- and post-course surveys. Physician participants were assured anonymity in their submissions of this free-form survey and were only asked to identify their class (blue or green group, or the homogenous or IPE seminar, respectively).

The participants perceived this requirement as an exercise inherent to one of the seminar objectives of “developing others.” The responses from physicians were collected and filtered and separated by class, and both sets of data was consolidated by question. All data from participants was collocated into a summary word document. Codes were generated based on the three research themes of “leadership, communication and information exchange” and the additional theme of “collaboration.” NVivo software from QSR International was used to find and contextualize key words from these themes, as shown in Appendix E (Code Book: Themes and Key Words), and to help organize the analysis as suggested by Strauss and Corbin (1990) and Creswell (2009).

CHAPTER 4 – RESULTS

This chapter provides analysis of the data collected in the study. The first section reviews the data results while also providing an assessment of the reliability of the questions used in the quantitative survey. The next section presents an overview of the pre- and post-test survey responses that were collected from the physician participants and the voluntary observers. That self-reported data portrays how all participating physicians perceived their leadership attributes, the ability to communicate effectively, their level of information exchange and an overall compilation of these three areas at the start of the program. Data on those same questions were collected from the physicians at the completion of the six-month seminars, and those results will also undergo analysis. Additionally, the pre- and post-course data collected from the physicians' colleagues (peer doctors and peer nurses), as well as observation from the physicians' partners or spouses was analyzed for insight into any change of observed behaviors of the physician participants. The data collected from both physician participants and their selected observers was then separated to allow for a comparison of any differences between those in the "blue group" (the class consisting only of physicians) and the "green group" (the interprofessional class of physicians, nurses and administrators) in the measured elements. Finally, the limited

supplemental qualitative responses collected after seminar four is coded to assess how the learning environment may have contributed to any differences in physician behavior that would provide additional insight.

Data Collection

As discussed in the methods sections, eighty-five physicians began the course, split between 50 doctors in the homogenous course and 35 doctors (with 10 nurses and 5 administrators) in the interprofessional course. All but two physicians completed the pre-course ratings (one physician withdrew from the course after being selected due to a job opportunity in another hospital, and another physician requested he be allowed to not complete the survey due to personal issues). Of the 84 physicians who participated in this study, 83 physician participants completed the pre-course ratings, and 76 physicians completed the post-course ratings. Overall return rate for ratings by physician colleagues was 60 pre-course, with the same number and same individuals completing the post-course ratings. Nurse colleagues provided 41 pre-course ratings, and 39 post-course ratings. There were 63 physicians who provided names and emails for spouses/partners, and the overall pre-course spouse return rate was 45/63, or 71%. Interestingly, that number increased to 50/63, or 79% post course.

To determine overall change and in comparing the homogenous class to the interprofessional class, only participants for whom both pre and post training ratings were obtained from a particular source (i.e., self, physician colleague, nurse, spouse/partner) were used in the final analysis. Overall, 42 physician colleagues, 22 nurse colleagues and 30 partners/spouses provided both pre and post training ratings, allowing for matching. The breakdown by experimental condition was as follows. For the homogenous class, 24

physician colleagues, 9 nurse colleagues and 15 partners/spouses provided both pre and post ratings that could be matched with a specific physician participant in that class. For the IPE class, 18 physician colleagues, 13 nurse colleagues and 15 partners/spouses provided both pre and post ratings that could be matched with a specific physician participant in that class.

Scale Reliability

To measure internal consistency, and with the desire to generate trustworthy results within and between healthcare professionals, it is useful to apply Cronbach's α analysis – the most common measure of internal consistency reliability of the ratings using a Likert scale (Tavakol & Dennick, 2011).

Measurements shown in Table 1 (Survey Reliability Analysis), below, indicate the 8-question leader attribute and 3-question information exchange questions fall within the “excellent,” “good,” or “acceptable” internal consistency category in both pre- and post-test survey. However, the pre- and post-test self-report and post-test partner/spouse responses in the “communication” variable indicate measures of .54, .58, and .43, respectively. Those measurements place the responses in that result in the “poor” internal consistency area, as defined in the Cronbach α analytical assessment. Upon further review of the questions found in that particular survey element, it was determined that one of the three questions – addressing the use of professional medical terminology used during communication – may have contributed to a reading of $\alpha < .6$ on the scale due to some physicians having specific medical terms in their specialty that may be unfamiliar with physicians not of that specialty. Given the design of the “communication” portion of the survey, this unidimensional question interpreted as addressing specialty-specific medical terminology connected to the small number of questions in that part of

the survey likely contributed to the “poor” α value in those three areas evaluating communication. All other Cronbach α values indicate survey reliability.

Table 1.

Survey Reliability Analysis

Question/ Respondent	PreCourse/ PostCourse	N	Cronbach's Alpha
Leader Attributes			
Physician Self-Report	Pre	83	.82
	Post	76	.84
Physician Colleague	Pre	60	.88
	Post	60	.85
Nurse Colleague	Pre	41	.96
	Post	39	.95
Partner/Spouse	Pre	45	.80
	Post	50	.75
Communication Effectiveness			
Physician Self-Report	Pre	83	.54
	Post	76	.58
Physician Colleague	Pre	60	.68
	Post	60	.67
Nurse Colleague	Pre	41	.78
	Post	39	.83
Partner/Spouse	Pre	45	.74
	Post	50	.43
Information Exchange			
Physician Self-Report	Pre	83	.77
	Post	76	.69
Physician Colleague	Pre	60	.79
	Post	60	.76
Nurse Colleague	Pre	41	.91
	Post	39	.87
Partner/Spouse	Pre	45	.80
	Post	50	.78

Correlation Among Study Variables

Quantitative data generated from the self and peer ratings were entered into SPSS version 25 to determine correlations between the variables of leadership, communication, and informational exchange, as shown in Table 2 (Means, Standard Deviations, and Correlation of Model Variables). Pre-course ratings for the physician participants in the subscale variables of “lead,” “communicate” and “information exchange,” (shown as “PrSL,” “PrSC” and “PrSI” on Table 2) show that these subscales are highly correlated. Specifically, the average correlation among the three pre-training self-ratings was .60. The same computations conducted with ratings obtained from the three peer sources show even higher correlations between leadership communication and information exchange (average correlation for physician-peers .63, nurse-peers .87, and partners/spouses .75), indicating the scales are highly correlated within sources. The same computations of average correlations among leadership, communication, and information exchange ratings post-course were .62 for self, .35 for physician-peers, .75 for nurses, and .56 for spouses, indicating a mid-to-high range of correlation of subscales within sources.

Correlations among ratings from difference sources, however, were relatively low. In the pre-course comparisons, physician participants' ratings of themselves correlated with ratings obtained from physician-peers on average .21, indicating a low correlation of self-perceived behavior with observed behavior by colleague physicians. The average correlation between self-ratings and ratings obtained from colleague nurses was -.22, a negative correlation indicating an inverse assessment occurring in several survey questions regarding leadership, communication and information exchange. The average correlation between self-ratings and ratings obtained from partners/spouses was .01, indicating views between physicians and partners regarding the overall elements of the survey were not in alignment.

Post-course comparisons showed some shifts in the correlations. Physician participants' self-ratings correlated with peer physician raters at a -.02 level, indicating a slight trend towards negative correlation between participant self-awareness and the relative view of doctor colleagues. The physician participant self-ratings correlated on average with post-course nurse ratings and partner/spouse ratings .31 and .23, respectively, showing a shift in the correlation from the pre-course survey and indicating an overall improvement in alignment between the physician participants' self-assessment the behavior observed by the raters in these two groups.

Given the high correlations of leadership, communication, and information exchange ratings within source and the low correlations of ratings between sources overall ratings (average of all 16 items) were computed for each source. These overall ratings also showed higher coefficient alphas than did the subcategories of leadership, communication, and information exchange broken down (see Table 2). Therefore, all subsequent analyses were conducted using overall ratings collected from the participants themselves, physician-peers, nurses, and spouses/partners prior to and after training. Correlations among these ratings were then

computed using only ratings in which both a pre and a post score were obtained from the same person. In analyzing the “matched” correlations between specific physician participants and their specific raters, there are several measures that show unique correlations, which in some cases were statistically significant. With an $n=42$, the correlation between overall self-ratings and physician colleague ratings prior to training was .26, and the post-course correlation was -.08. With an $n=22$, the correlation between self-ratings and ratings obtained from colleague nurses was -.08 prior to training and .49 (significant at $p < .05$) after training. With a $n=30$, the correlation between self-ratings and partner/spouse ratings is .11 prior to training and .43 after training (significant at the $p < .05$ level). In these matched correlations, the data reflects that physician participants’ self-awareness of their behaviors became more aligned with the perception of those behaviors by nurses and spouses, and less aligned with how other physicians in the organization saw their behaviors.

Separating the correlations by the homogenous and the IPE group provides additional insight. In assessing the correlation between self-ratings and ratings collected from physician colleagues, the homogenous group of ($n=24$) showed a correlation of .33 prior to training and a correlation of .25 after training, indicating little change in perceptions versus observed behavior alignment. But the physician participants in the IPE group went from a .24 pre-course correlation to a -.37 reflection in the post-course correlation, indicating a shift in self-perceived versus observed behavior assessment.

The pattern of self-other correlations was different for nurse colleague and partner/spouse observations in the two groups. In the homogenous condition self-ratings correlated with nurse-peer ratings -.06 prior to training and .50 after training in the homogenous group, and from -.10 to .49 in the IPE group, indicating a closer aligning with perceived versus

observed behaviors. Similarly, the correlation between self-ratings and ratings from partners/spouses changed from .10 to .32 in the homogenous group and from .12 to .50 in the IPE group; both of these self-other correlations after training were significant at $p < .05$ level.

Test of Hypotheses

Hypotheses were tested using a mix-model Analysis of Variance (ANOVA) with pre-post training being the repeated measures variable and condition (homogeneous or IPE) being the between-subjects variable. The same method was used to examine self, and peer-ratings separately. Table 3: Descriptive Statistics Combined and by Group, Pre- and Post-Survey Results, provides the sample size, means and standard deviations for these ratings.

Hypothesis 1: Self-Ratings of Perceived Behavioral Change. Results from the first mixed-model ANOVA demonstrated that overall self-ratings from physician participants showed significant improvement from pre- to-post training ($F = 53.37, p < .01$). Thus, H1 was supported. Specifically, the mean change from pre-course to post-course self-ratings for participating physicians rose from 4.76 to 5.07, with a standard deviation of .07 and .06, respectively.

Hypothesis 2: Peer Ratings. Results of the mixed-model ANOVA for physician-peer ratings also showed improvement from pre to post training ($F=4.97, p < .05$), as did the mixed-model ANOVA for nurse-peer ratings ($F= 5.36, p < .05$), and spouse/partner ratings ($F= 6.90, p < .05$). Therefore, Hypothesis 2 was also supported.

Table 3.
Descriptive Statistics for Overall Pre- and Post-ratings by Group

Group	Self Pre/Post	Doctor Colleague Pre/Post	Nurse Colleague Pre/Post	Partner/Spouse Pre/Post
COMBINED (Both Groups)				
N	76	66	31	45
Mean	4.76/5.07**	5.63/5.77 *	5.44/5.71 *	5.52/5.67*
SD	.07/.06	.06/.05	.13/.11	.07/.05
Homogeneous				
N	43	42	22	30
Mean	4.67/5.06	5.49/5.78	5.52/5.72	5.56/5.65
SD	.09/.08	.07/.07	.19/.17	.09/.07
Interprofessional				
N	33	24	9	15
Mean	4.64/5.08	5.78/5.76	5.36/5.72	5.49/5.70
SD	.10/.09	.09/.08	.17/.15	.11/.08
*p< .05, **p< .01				

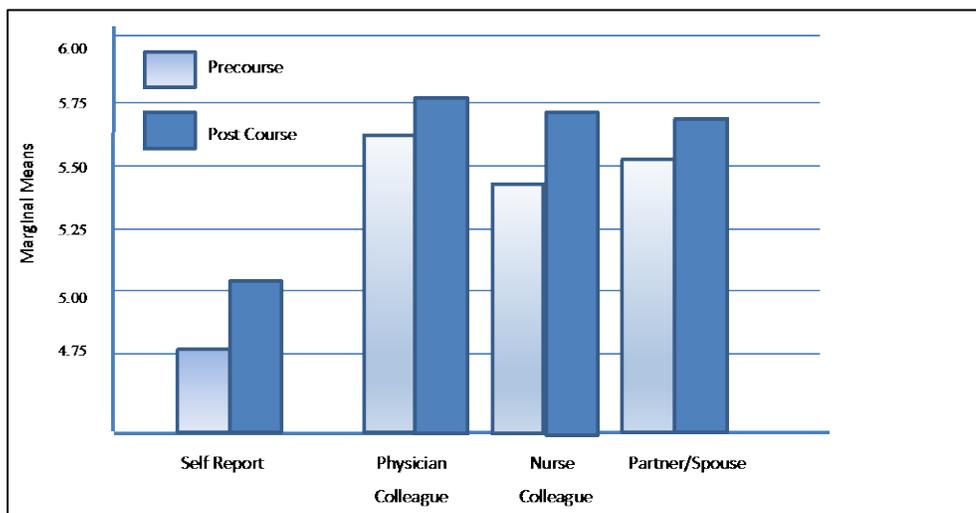


Figure 4. Marginal Means Related to Hypothesis 1 and 2

Hypothesis 3, Pre-post Self-Ratings by Class. H3 investigated whether self-rated behavior changed to a greater degree for those in the IPE class. As shown on Table 3

(Descriptive Statistics by Overall and By Groups) and in Figure 5 (Marginal Means Related to Hypothesis 3 and 4) the pre-post change in self-ratings from the homogeneous group (class with all physicians) was slightly less than the change in self-ratings for the IPE group. However, results from the mixed-model ANOVA demonstrated that degree of improvement between the two conditions was not significantly different ($F= .25, p = ns$). This finding failed to support H3.

Hypothesis 4, Pre-post Colleague Ratings by Class. Pre-post improvement in physician-peer ratings was found only in the homogeneous group (which moved from 5.49 pre-course to 5.78 post-course), but not the IPE group. In fact, physician-peer ratings for the IPE group declined slightly, from a mean of 5.78 at the beginning of the course to 5.76 in the post-course ratings. This difference in pre-post change between the two groups was significant ($F=6.44, p < .05$). This finding goes in the opposite direction from H4. Pre-post improvement in nurse-peer ratings was seen in both conditions and this change was slightly greater for the IPE group. However, this effect was not significant ($F=.46, p = ns$). The same was true for spouse/partner ratings ($F=.94, p = ns$). Thus, nurse and spouse ratings showed the expected trend, however results did not support H4.

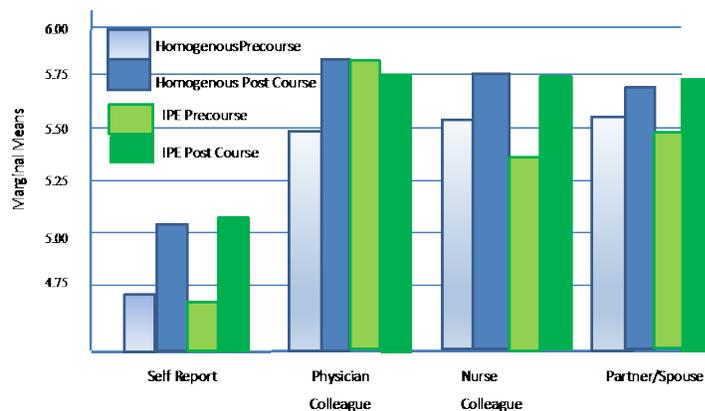


Figure 5. Marginal Means Related to Hypothesis 3 and 4

Ratings on “Burnout.” While not part of any of the hypotheses, as mentioned in the methods section the hospital requested physician participants complete an additional four questions related to physician burnout as part of the pre- and post-course survey. Though physician “resilience” was never discussed in the seminars, and there was no comment regarding stress related patient care or work-life balance, the combined class data and the individual classes all show a decrease in burnout metrics. Results of a mixed-model ANOVA revealed an overall drop in burnout pre- to post-training ($F= 11.50, p < .01$). Moreover, inspection of the means revealed that participants in the IPE condition reported greater change than did those in the homogeneous condition. However, this difference between the two conditions was not significant ($F= 1.08, p = ns$). These data can be found in Table 4 (Physician Burnout Results), and in the associated graph in Figure 6 (Marginal Means Related to Physician Burnout).

Table 4.

Physician Burnout Results

	COMBINED	Homogeneous	IPE
N	76	43	33
Mean (pre-post)	2.99/2.68 **	2.94/2.72	3.05/2.63*
SD (pre-post)	.14/.13	.18/.17	.21/.20
*p< .05, **p< .01			

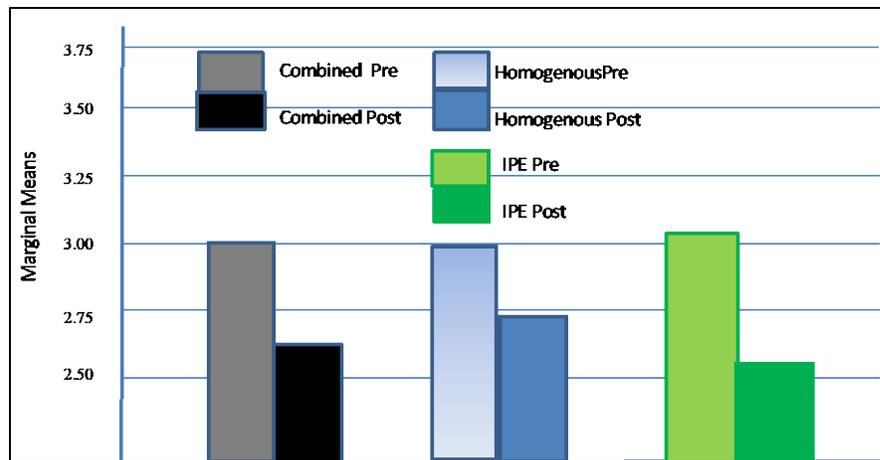


Figure 6. Marginal Means Related to Physician Burnout

Supplemental Qualitative Data

The raw narrative responses from the physician participants who answered the voluntary homework exercise sent after seminar four was collected and filtered, then consolidated by question and separated by class. All response data was placed into a summary word document according to class. The text was analyzed using the three key course themes with an additional theme of “healthcare collaboration,” using defined code words (Appendix E, Code Book: Themes and Key Words). NVivo software from QSR International was used to search for the key words and organize the analysis. Those patterns were further dimensionalized for comparison between the two classes as suggestion by Strauss and Corbin (1990) and Creswell (2009).

Responses provided insight into how physician participants were viewing the three research areas of leadership (attributes and competencies), communication techniques, and influence techniques. The query also requested comments regarding course participants perceived changes of leadership behavioral patterns regarding engagement with others inside the

healthcare organization culture and outside of work with partners and spouses. The various qualitative comments regarding the three themes of leadership, communication and information exchange showed little difference between the two classes, an indicator that the seminar topics regarding these elements of leadership growth were shared by participants in both classes, irrespective of the demographics of the respective homogenous or IPE class makeup. The similarity in type of responses were interchangeable, with no perceptible difference between classes. However, under the theme of healthcare collaboration, there were numerous comments indicating a different view of team collaboration, the nurturing of a commitment to the organization, and the improvement of mutual respect and trust between members of the two dissimilar classes. Elaboration on these supplemental qualitative comments regarding healthcare collaboration are discussed in chapter five.

CHAPTER 5 – DISCUSSION

This chapter discusses the analysis of the pre-post change in physician participants' self-perceived behavior as well as the change in behavior observed by physician colleagues, nurse colleagues, and spouse partners that occurred overall and as the result of attending one of two healthcare leadership courses. The first section of this chapter provides a summary of the results: how a leadership development program – collaboratively designed by hospital executives, Chief Medical Officers, and a leadership subject matter expert – produced change in physician leadership competencies in the area of leadership behaviors, communication delivery, and information exchange. Section two provides an analysis of the four hypotheses and participants' supplemental qualitative contributions. The third section provides limitations of the research study and recommendation for future research.

Summary

The objective of this research study - its primary purpose - was to first analyze change in self-reported and observed leadership behaviors that may contribute to physicians not just believing that they are becoming better leaders but understanding that others – peer physicians and nurse colleagues in the hospital and partners/spouses at home – also observe their leadership growth.

Ratings of leadership, communication, and information exchange were highly correlated within rating source and were thus, combined into an overall score before testing hypotheses. In support of the first hypothesis, the quantitative analysis of self-ratings revealed that physician

participants perceived that they had improved. In support of H2, that change was also observed by each of the three peer raters. This quantitative analysis is reinforced within supplemental qualitative data indicating physician participants were aware of their leadership growth. While not included in this research design, the sponsoring hospital also conducted a procedural post-course feedback survey with the participants as to the value of this (new) healthcare leadership course. In this survey, 39 of the 83 (47%) physicians participated and responded that what they learned in the course will “make me a better leader” (with 94.7% responding with strongly agree or agree) and “what I learned in the leadership course will lead to improved engagement” (86.8% strongly agree or agree).

Since the publication of the Institute of Medicine’s (IOM) 1999 study, *To Err is Human*, professionals within the healthcare industry have attempted to find ways to counter negative medical outcomes. One recommended way to accomplish that is through replacing traditional methods of learning with interprofessional courses, and it is with that recommendation in mind that this study was designed. In hypothesis three and four, this study attempted to compare the effect of training on physicians trained in a homogenous group (all physicians) with that of physicians trained in an interprofessional class (nurses, physicians, and administrators).

The physician-nurse-administrator relationship is complex as a result of different training methodologies and diverse business and professional cultural approaches to patient care and building a more collaborative relationship must include ways and means to develop additional trust, improve communication, and ensure more efficient information exchange between doctors and their teammates. All of these actions contribute in their own way to effective healthcare leadership. Training and education courses within healthcare must seek opportunities and find methods to build bridges over established professional faultlines to ensure each individual’s

contributions is valued and each member of the team is mutually understood and respected in their own contributions to healthcare (Kaissi, 2005; Rico et al., 2012; Nelson et al., 2008).

Although the pattern of the means showed slightly greater improvement in self-ratings of burnout and of behavior and in ratings obtained by nurses and spouses for the IPE group than the homogeneous group, these differences were not statistically significant. Thus, placement in either course resulted in essentially the same amount of behavioral change for participants in either class. Counter to what was expected, significantly greater improvement in ratings obtained from physician-peers was shown for participants in the homogeneous group than for those in the IPE group.

Incorporating the data of observed change from colleagues and personal partners that is posited in H4, however, suggest there are some dynamics that require further assessment to determine implications. That quantitative data is reinforced with some of the supplemental qualitative commentary generated by participants during and after the course and will be described in the implications of the research results.

Finally, supplemental analyses revealed that self-ratings were more correlated with ratings obtained from nurses and from spouses after training than they were before training. This suggests that participants may have gained greater self-awareness of their own behavior as a result of the course.

Implications of Research Results

The healthcare leadership seminars developed for this program focused on the elements of leading in the medical profession and the associated attributes desired in a transformational healthcare/physician leader. While interested in how healthcare teams might be managed for utmost efficiency and effectiveness, the individuals who collaborated in designing the leadership

program for this hospital system placed a priority on strengthening the organizational culture through the empowerment of physician leaders. Executives in this organization were supportive of a program that incorporated individual physician desires to develop as leaders and those who were interested in contributing to addressing the challenges faced in the industry. This healthcare organization actively collaborated on setting objectives, determining course subject content, and selecting a diverse set of physicians with potential and desire to be leaders that would participate in the course. The organization also established metrics that would allow for post-program evaluations linked to the hospital objectives for their physician leaders. While this approach is an example of the model for establishing and evaluating training programs, as described by Kirkpatrick and Kirkpatrick (2006), research has shown designing leadership programs in this manner is not the norm within the healthcare industry (Black & Earnest, 2009; McAlearney, 2006; Makary et al., 2006; Hertling et al., 2018; Lipsitz, 2018; Lerman & Jameson, 2018; Kaplan et al., 2012). The results from this program – which achieved measurable physician leadership improvements and positive observation from colleagues of the evolution of those leadership traits in their peers - is indicative of the type of approach healthcare organizations might attempt to incorporate within their organization.

The use of pre- and post-leadership development course program metrics (the survey used in this research) that measure leadership attributes, communication skills and information exchange dynamics to determine improvement in participants' skills is also a model that other healthcare organizations considering a program for physicians might apply. Given that failure to measure results, failure to measure leadership activities and failure to focus on the correct leader competencies are three of the top five reasons for failure in leadership development programs

(Stevenson, 2014), ensuring objectives and metrics similar to those used in this research are valuable for healthcare organizations to consider.

The correlations between self-ratings and ratings from nurses and spouses increased from pre- to post-training suggests that the training not only improved behavior but also increased self-awareness. Supplemental analyses indicated that it also significantly reduced participants' burnout. Comments from the supplemental qualitative questionnaire responses by physician leaders of both groups, such as "this program gave me new methods of continuously assessing my role as a leader of my multidimensional team and the other interprofessional teams within the organization," "the insights into my own leadership style, and the style of others, based on the model and the course objectives were extremely valuable," and "insights into the elements of my personal character and behavior and how those contribute to influence strategies," reinforce the positive effects of having this particular program design.

Physicians participants, in both the homogenous and IPE courses, reported statistically significant change in their behaviors as a result of the course. These behaviors fell under the categories of leadership, communication methods, and information exchange techniques that were the learning objectives of the course. In reviewing the qualitative comments of physicians from *both* the IPE and the homogenous course, the three themes of leadership, communication, and information exchange are addressed with specific comments and phrases when asked "what are your insights," and "have you changed your approach" during the mid-course questionnaire:

"The most important insight I've gained relates to defining and establishing a personal set of values that will drive my decision-making and my behavior."

"I had never addressed the requirement for leaders to develop others...but I also now realize that to develop others, I must first understand the attributes that I possess, and whether they're strong or need work."

“The course has been enlightening in helping me truly assess (and reassess) our attributes/competencies, but also understand how others see those as positives (and/or negatives) and how that helps (or hurts) our common goal and our ability to lead toward that goal.”

“It’s been interesting to learn that good leaders are first good human beings...and knowing that good leaders need to listen more than they speak. I have begun to learn to listen more fully to others....”

“It became clear early on that I would need to approach influencing different and more effectively communicate. I realized before I need to do that, but this course helped me realize this was a leadership requirement. It was also particularly valuable to correlate my values to how I communicate them through words and actions.”

“Leadership is influencing others - if you don’t have the ability to influence (people, situations, etc.), you don’t have the ability to lead. And influence is always most effective through example.”

“My leadership perspective has changed since the first meeting, when you defined leadership as an art. Before that, I thought it was just telling people what to do. But then understanding that the goal of developing this art around motivation, influencing, team building and communicating has helped me to narrow the how I see my leadership focus outside of organizational goals and objectives.”

“I have been communicating more effectively with my team. I have been far more sensitive to explicitly endorsing behaviors and actions that I believe promote better care of our patients.”

“The communication aspect of the seminars has been the most important component for me. The realization that communication is always difficult and often fraught with people that have different agendas, different motivations, has led me to be very aware of situations that require good communication, more empathy, more listening. And sometimes, as a doctor, more effectively communicating things that some people don’t want to hear.”

“The Healthcare Leader Model is the most important takeaway. This framework was new to me and allowed me to assess my own leadership capabilities along these different qualities.”

There are myriad comments that reflect an inculcation of the key learning objectives designed as part of the program and that were also related to the course and research objectives.

In all areas, the comments equally reflect shared observations from physician participants in both the IPE and homogenous seminar group. This improved leadership understanding likely contributed to the change in behavior detected by raters.

Additionally, research has shown that an individual's perceived improvements in personal leadership behavior provides increased confidence in decision-making, team-building and effectiveness in project management and completion (Randall, Kwong, Kuivila, Levine & Kogan, 2018; Moldy, 1979; Kolb, 1999). Confidence, rather than cockiness, was discussed as part of the element of "presence" in the "attributes" category of the leadership model (Figure 1. Leader Attributes and Competencies). In part, this connection between leadership perception and leadership behavior may also contribute to related improvement in the change in observation and related change in survey ratings indicated by colleagues and partner/spouse. The resulting improvement in self-confidence was not measured in this research but may be an area of future research using this design.

In analyzing the data from the two different classes (Table 3. Statistics by Group, Pre- and Post-Survey Results; Figure 5. Marginal Means Related to Hypothesis 3 and 4) the descriptive statistics show improvement in every pre- post- category except one: ratings obtained from physician-peers in the IPE class (5.78 to 5.76). These results are in contrast to those obtained from physician-peer ratings of participants in the homogeneous group (5.49 to 5.78) Having observed the interaction in both classes, it was apparent there was a candid exchange of ideas as to how physicians lead *each other* in the homogenous class, and a continuing discussion of how physicians were often asked to submit to the demands of administration when the latter may not have had all the needed information. The dialogue in the IPE class – enhanced by candid comments and (usually) respectful feedback from nurses and administrators regarding

their perspective and approach to healthcare issues – was different and appeared to provide the physician participants with a new outlook on interprofessional engagement. Several examples from the mid-course questionnaire from physicians in the two different classes provide interesting and additional insight of the effects of the demographics. Throughout the seminars, the exchanges between doctors, nurses and administrators in the IPE class appeared to grow in respect, appreciation and even shared humor while the dialogue in the all-physician remained mostly physician centric. Remarks from the physicians in the IPE group in the qualitative survey contained no disparaging comments about their healthcare teammates, as the overwhelmingly mentions indicated a changing and increasingly positive view of their non-physician professional colleagues:

“Having an environment to opening discuss physician motivations and then clearly seeing the communication gaps with administration and nurses has been helpful and, for me, one of the more important elements of this program. If we’re going to build strong healthcare teams, we need to better understand each other. Our connection in this class – to include some of the heated discussion and even one of the fights! – help us to do that. Developing this relationship with our nurse and administrator colleagues is almost like a good marriage... sometimes you need to get into a little quarrel before patching things up and growing.”

“The best learning for me has been to hear perspectives from our physicians and to realize the great sense of distrust many/most have for administration. At times I can tell this is well-deserved based on past actions and decisions being made without physician input. At other times physicians have not had the benefit of this type of training and often struggle with leading others and leading up. For this insight alone, the program has been hugely valuable!”

“While the lectures, dialogue and engagement on leadership issues has been extremely helpful, what I have liked the most about the course has been meeting other MDs from around the organization who possess different specialties and who experience difference issues than me. But I have also really been surprised in meeting an engagement with the nurses and administrators in our class who clearly have a different view than I thought they had about what is important about patients and what we need to do in healthcare. Spending the time and doing projects in class has helped me

establish a different relationship with some of them, and that has already been helpful in our hospital. It's a whole lot better than just the informal meet and greets at a conference, or seeing others at an occasional dinner that we are asked to attend"

"Everyone's time is valuable. I was struck by what you said in the last session - about the CEO who said that physicians now know how to communicate to him, to bring relevant details to the table. I think that speaks a lot for the physicians who have taken the time and effort to learn and make time in their schedules to do so. So, during one of our meetings, I was surprised and humbled when one of our administrators said that he had read up on a medically complex issue, so he could understand what I as a physician, would face in caring for that patient. I know physicians can try to do what administrators do, but it is hard for administrators to do what physicians do. That leader made the attempt to do so and that was incredible. He earned my respect and trust that day."

The comments garnered from the homogenous group were different. There were certainly some positive qualitative comments in the post-lesson four critique from physicians in the homogenous group, with observations such as "the ability to connect with other physicians to better understand their perspective was a huge benefit of this program," "I enjoyed the intense dialogue about topics that physicians would never otherwise talk about," and "I most of all enjoyed meeting with physicians from other parts of the medical system and learning professional perspectives from them." But these appear to be related to the physician-centric exchanges expected in the homogenous group. Other statements from those in the all-physician seminar were different from the IPE group, indicating that there remained at least an element of ongoing distrust between physicians and non-physician professionals:

"I'd like to think that these sessions will lead to building trust between physicians and administrators, but I am not sure why they would. Honestly, the best I can hope for is that our future physician leaders who are in the course will work closely with the administration and that will give us a better understanding of the complex world of healthcare...."

"I certainly hope this course will create a better environment within the organization. I believe physicians have been craving some input, but it's up to the Administration to truly allow a partnership. This has been a great

course for the doctors, but the administrators need to be in here with us. I am not optimistic that higher levels of our hospital's bureaucracy understand us, so they will not change their controlling and non-collaborative approaches."

"I am currently trying to match the influence technique you provided with the appropriate groups I work with. I find that nurses are pretty responsive to "authoritative requests" and "pressures," but I'm still trying to figure out what technique works well with specialty physicians and administrators. Physicians tend to be a data driven group so "rational persuasion" would be the presumptive best technique. My job is to match the data with the values of the specific physician group I am trying to persuade."

Again, while these beliefs from the homogenous group physician participants may be anomalies, there were no similar comments from the IPE group. The IPE physician participants' qualitative comments were overwhelmingly positive and indicated a changed approach and an increased willingness to see non-physician professionals as a valuable element of the healthcare team. Comments such as "meeting and collaborating with professionals I would have otherwise not known was the most critical part of the seminar," "learning in the mixed cohort with administrators was particular critical, as I saw their point of view for the first time in my medical career," and "ability to interact with hospital leadership and the nurses in a very collegial and collaborative forum really opened my eyes to their perspective" were more indicative of the changes in behavior of those in the IPE group, both perceived and observed.

The data, when combined with elements of the qualitative commentary, provide an example of how interprofessional education may provide added benefit of countering existing professional faultlines of the nature described by Rico et al. (2012), Brewer (1999) and Barr et al. (2005). While the overall improvements of both perceived and observed transformational leadership behaviors in both groups occurred in the area of improving leadership traits, communication techniques and information exchange, there remains a requirement to assess how dynamics in other events might also contribute to interprofessional leadership growth and an

increased generation of trust between different healthcare professions: physicians, nurses and executives.

Healthcare requires teaming – at every level – to provide solutions to complex issues, overcoming faultlines require accepting the professional diversity of subgroups within the healthcare team. Like members of any professional body, physicians are more likely to enjoy engagement with other physicians, until provided with the opportunity to engage with other members of an interprofessional team allows them to understand how incorporating diverse approaches may enhance problem solving. Some of this dynamic may account for physicians in the homogenous group receiving improved ratings in observed leader behaviors from colleague physicians – as they continue espousing the “us” versus “them” dynamic that research shows exists in healthcare while simultaneously learning additional leadership techniques - while those in the IPE group garner better ratings from nurses and spouses, as evidenced by data in Table 3 and Figure 5.

There is extensive research and a long history of dysfunctional professional relationship between physicians and nurses (Manojlovich & DeCicco, 2007; Schmalenburg & Kramer, 2009; Stein-Parbury & Liaschenko, 2007). Assessment of the data related to correlation of model variables and the pre- post-nurse colleague ratings indicate a unique dynamic in the nurse colleague observations of participant physicians that occurred during this study. The correlation of pre-course self-ratings with nurse pre-course ratings indicates a negative correlation, suggesting that in the pre-course survey nurses found those who rated themselves the highest to be the least effective and those who rated themselves the lowest to be the most effective. These correlations changed in the post-course nurse observations (overall), as pre- post-course descriptive statistics show positive correlations and improved ratings of physician participants by

their nurse colleagues in both groups. Though the IPE group shows a slightly greater change, this was not statistically different from the homogeneous group. Seminar discussion, class exercises and interprofessional engagement that addressed appropriate leadership skills, understanding and using proper communication techniques, the requirements of precise information exchange, and building leadership self-awareness may have contributed to this change in correlation and growth in positive observations.

As noted in Chapter 3, the hospital requested the inclusion of four items related to physician burnout in the pre-course leadership survey. The intent was to provide the executives an indicator of the extent of the issue of physician burnout within the organization. Given physician burnout and related physician suicide is an increasingly disturbing issue within healthcare and many organizations are attempting to find new approaches to determine the extent of the challenge (Swenson, Kabcenell, & Shanafelt, 2016), the survey included that sample of four questions from the Maslach Experience Burnout Survey (Maslach & Jackson, 1980) in the post-course survey. While the leadership program of instruction did not address physician resiliency or burnout explicitly, it was interesting to see that participants in both conditions reported a decrease in burnout with a non-significant trend toward those in the IPE condition showing a greater decrease. This may be an indicator that growth in leadership attributes (reinforcement of values, concentration on the development of character, renewal of professional mission, increased trust in teammates, learning methods of personal and professional development) may correlate to decreased emotional exhaustion, professional cynicism, dehumanization of others and negative self-evaluation, all of which have been shown to contribute to burnout in those who are involved in extensive “people work,” such as healthcare professionals.

Another aspect of the study that has implications for physician well-being involves the improvement of ratings from the partner/spouse observations. Physician participants in both the IPE and homogenous group provided comments regarding how the course contributed to changes in leadership approaches to colleagues, friends and especially partners/spouses, and a majority of the comments reinforce the quantitative data generated from the partner/spouse observers. Physicians from both groups provided the following comments, and others that were similar, regarding changes in their family life:

“I think that the changes outside of my office have been even more pronounced than what I’ve seen at the hospital. My attitude towards my wife and teenage children has evolved and (I believe) we are all stronger for it. Dinner table conversation and introspection/self-reflection in the [name] family have never been better.”

“I have been using the learned strategies and behaviors at home and with other personal relationships. I have found that engaging others in a conversation or discussion about shared solutions – and listening more than talking (as suggested in class) to issues as a means of improving communication and information exchange - has been more effective at relationship building rather than simply giving opinions or orders or impressing others with what I say.”

“As a byproduct of this class, my wife and I have committed to sharing information differently. We have become much more intentional about writing down what is important to each other holistically and listening to each other more attentively when making decisions about our life and our children.”

“I completely changed my approach in interactions with my wife of 17 years because of some of the things I learned in this course. The focus on values and appreciating differences in other’s values, understanding other people’s motivations and attempting to use other ways of communication and influence versus the one I always relied upon, is something I had never addressed before, but I’ve taken it to heart.”

Finally, while not all of the research hypotheses indicated statistically significant changes the study shows the importance and potential for using formal and informal interprofessional integration mechanisms – in this case, a physician leadership development program – to advance

multidimensional and interprofessional collaboration in healthcare. The simple concept of educating physicians in the norms of leadership was novel to this particular institution and to most healthcare organizations. Hopefully, this study will encourage other hospitals to implement similar programs that will promote cross-level collaborations, reduce faultlines, improve interprofessional dynamics, and overcome culture issues within the industry.

Limitations of the Study and Recommendations for Research Design

There were several limitations to this research study, but also exciting potential opportunities for future study design and approaches.

With a desire to ensure a robust response from both participants and observers who are busy healthcare professionals, the ratings collected were limited to three specific subgroup variables (leader traits, communication, and information exchange) with an associated total of sixteen questions (with the additional four addressing physician burnout, desired by the host hospital). The desire for balance – having a limited number of the *right* questions that could be addressed in a short period of time – became a critical part of the project design. While the ten questions regarding leader traits allowed for adequate statistical analysis of responses, the three questions each on leader communication and ability of the leader to execute appropriate information exchange may not have adequately addressed those key aspects of leadership. In hindsight, the number of survey questions – especially in the areas of leader communication and leader information exchange -- could have been expanded for more accurate analysis of these critical topic areas.

The initial pre-test for participating physicians appears to have skewed high in some areas based on the assessment of knowledge at the beginning of the course of instruction. An indicator that individuals may be overestimating their skills prior to receiving training or

education in the subject, this is a common occurrence in surveys that rate “soft skills,” such as perception of leadership abilities (Pratt, McGuigan, & Katsev, 2000; Howard et al., 1979). It may be appropriate in future leadership surveys to apply this retrospective pre- and post-test methodology, whereby participants reflect on the growth of their skills and knowledge over the course of the leadership education program and are asked to rate *before starting* and *at completion*, simultaneously, to achieve a different view of perspective.

While scores for participating physicians skewed higher than appropriate in some areas due to an assumption of skill, knowledge or competency that had not yet been gained, pre-course responses from physician colleagues also appeared to skew particularly high, with several respondents universally checking the right-side box for the entire survey (i.e., what some who have used the Likert scale call “checking the straight sixes”). This is likely a result of the time constraints faced by busy physicians, the physician observers not receiving training into the various perspectives of what they were being asked to rate (given senior physicians have also received little leadership training), and the associated human nature to provide high skew to any personnel evaluation to avoid potential for conflict or embarrassment. To counter this bias, it may be appropriate to ask participants to provide more than one physician and nurse observer raters in future studies to generate a more accurate mean observation.

In this study, administrators were not asked to rate physician participants. In hindsight, this was a missed opportunity. In addition to increasing the number of colleague observers for each physician participant, it would be beneficial in future studies to request administrator observers for the physicians to provide additional leadership insight. This may prove challenging in that many administrators of large hospitals do not know all of

their physicians but requesting observer ratings from business executives might generate interest in the program and contribute to the interprofessional dynamics within the industry that is an objective of the industry.

Participant physicians provided qualitative responses as part of the course design, but there was no qualitative input from observers. The qualitative questions that were provided as part of reinforcement of learning objectives proved beneficial and it was not onerous to include data from these answers as part of the research findings. These physician participant answers also contributed to a refinement and a better understanding of the qualitative survey responses, meeting the desire to insightfully capture the complexities associated with the issues and providing a deeper understanding of the scientific data (Reio & Werner, 2017).

Finally, this study is limited on its external validity and generalizability. Data were collected from one large healthcare organization in the Midwest which had recently merged two dissimilar (Adventist and Catholic) faith-based medical hospital systems, each possessing a strong internal organizational culture. This is a unique healthcare system in the midst of organizational change, with physicians who desire to contribute to leading. While the numbers of physicians in the study was appropriate for research, future research in this area might increase sample size of physicians by comparing two or more hospitals that are executing the program simultaneously – in both non-profit and for-profit organizations -- to determine similarity and differences in the results.

Recommendations for Future Research

There are several possibilities for future research as a result of conducting this study, but two seem to possess particular advantage.

After the completion of the leadership course, and after the submission of the post-course survey data, the CMO at the host hospital assigned all participants to various groups that were tasked to develop solutions to specific hospital challenges. Those teams were formed using participants from within the classes, and all eventually would present briefings to hospital leadership on their proposal and recommendations. Graduates of the course were put in leadership roles on their team, shared responsibility for completion of the projects, and raters who had previously completed their surveys regarding the physician leadership skills were provided with additional opportunities to evaluate the leadership potential of these individuals. Given that, the first recommendation for future research would be to conduct a similar leadership class and associated research project, incorporating many of the recommendations addressed in research limitations noted in the previous section of this paper, but extending the post-course timeline for rating by the various and assigned observers. This approach would provide additional insight into true leadership development in a pragmatic problem-solving situation.

The second recommendation for future research involves expanding on the limited research associated with the data generated on physician burnout. The recommendation would be to incorporate many of the recommendations addressed in the previous section regarding research limitations in this study, incorporating the complete Maslach Measurements of Experience Burnout (Maslach, 1981) to determine the correlation of leadership develop programs to reduction of physician burnout. Such research would advance the engaged scholar approach to a critical issue in healthcare leadership.

Conclusions

“We need doctors to lead” will continue to be a mantra in the healthcare industry, as

medical professionals seek the help of physicians in finding solutions to the challenges of the triple aim plus one. While the leadership training conducted within the boundaries of this study was proven to contribute to significant and positive perceived leader behavioral change in the physician participants and the related changes in leadership behavior as observed by doctor and nurse colleagues and the physicians' spouses, there were no significant quantitative differences that could be attributed to class demographics between groups that consisted of all physician or a mix of doctors, nurses and administrators. Qualitative comments may indicate that an interprofessional approach to training and education may contribute to improved cooperation and understanding between members of the team, while homogenous training may contribute to cultural gaps between medical professionals and their non-medical colleagues.

Along with improvements in perceived and observed behavior, however, are some early indicators that appropriate and contextual leadership training - presented with an emphasis on personal values, self-awareness, insight into character, and an understanding of team and organizational influence methods - may stimulate a reduction in burnout. Given the scourge of this psychological affliction in the medical ranks this result requires further study.

Finding the most effective and efficient way to educate and train physicians on leadership fundamentals is important to addressing the elements of the triple aim plus one. As the healthcare industry continues to face increasingly complex challenges, and as those in the medical profession search for ways to complement the science of medicine they are taught as physicians with the art of leadership they need to achieve interprofessional team results, it is the hope that this study will provide some insight.

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Appendix A

Participant Informed Consent

Informed Consent for Healthcare Leader Course

INTRODUCTION: *My name is Mark Hertling, I am a doctoral student in the EDBA Program at the Crummer School of Business at Rollins College. I am conducting research regarding the changes in leadership development traits as a result of a program conducted with one hundred healthcare professionals at a major hospital in the United States. As a participant in that leadership development programs, I will be collecting survey data from you and your colleagues and partners.*

INFORMATION REGARDING PARTICIPATION IN THE STUDY:

- 1) *You are associated with one of two hospitals asked to participate in this study.*
- 2) *Along with participation requirements for the course, this study will request your actions in the following areas:*
 - a. *You be asked to complete a pre- and post-course survey that consists of 22 questions regarding leadership skills and work engagement. That survey should take no more than 15 minutes.*
 - b. *As a participant you will also be asked to provide the names of three people – a colleague, a nurse you work closely with, and your spouse/partner (if applicable) – who will also provide input regarding their perception of your leadership attributes and competencies. That survey will consist of 16 questions; the results will be anonymous and remain confidential and will only be used for this study.*
 - c. *You will be asked to complete a mid-course questionnaire of eight questions, asking your thoughts on the topics and approach of the course*
- 3) *At the end of the leadership development course, you may be asked to be a volunteer for telephonic or face-to-face interviews. Those interviews will be recorded, but they will also remain anonymous and will be used solely for the purpose of the study. While I am requesting that all participants fill out the pre- and post- course surveys, this semi-structured interview will be voluntary. That interview will take no longer than 15 minutes and will be scheduled at your convenience.*
- 4) *If at any time you become uncomfortable with participating in the study, or you wish to withdraw from participation for any reason, that action will not affect your participation in the Healthcare Leadership Program, and it will not affect any benefit you will receive within your healthcare system as a result of participation and eventual graduation.*

BENEFITS OF PARTICIPATION IN THIS STUDY:

- 1) *You will receive a copy of the finished study describing the changes in leadership attributes and competencies as a result of this program.*
- 2) *All of this information, which may be helpful to you, will be anonymous and consolidated to describe overall change trends associated with the course.*

3) *It is anticipated that the results of this research will allow you to gain insight as to the programs while also providing insight as to how your hospital's leadership development program will contribute to benefitting the medical profession writ large.*

RISKS/DISCOMFORTS/CONFIDENTIALITY:

- 1) *As with all research, there is a chance that confidentiality could be compromised; however, I will take every precaution to minimize that risk.*
- 2) *Your answers, and the answers of those who participate in any survey or interview, will remain confidential and used only for the purpose of this study on leadership development.*
- 3) *When results of the study are published or presented, individual names and hospital identification and other identifiable information will not be used.*

COMPENSATION:

You will not be paid for taking part in this research.

QUESTIONS/AGREEMENT:

I have already agreed to participate in areas related to paragraphs 2 a-b and 3, above, and have submitted a "yes" answer on the electronic survey form as a testimony to my informed consent in May 2018. My signature below attests to my willingness to participate in the additional measures identified in paragraph 2 c-d, above.

Signed:

Signature

Date

Name

Position (Physician/Specialty; Nurse; Administrator)

Appendix B

Participant Self-Reporting Survey

Please indicate on a scale of 1 (very rarely) to 6 (almost always) how common it is for them to exhibit the following behavior:

<i>Very Rarely</i>						<i>Almost Always</i>
1	2	3	4	5		6

1. *I exhibit values and behaviors that others admire*
2. *I request and listen to other's opinions and recommendations*
3. *Other people trust me*
4. *I request assistance from others when I need it*
5. *I take time in helping other people develop and reach their potential*
6. *I offer assistance to others when they need it*
7. *I actively monitor and check for errors made by my team*
8. *If others on my team make errors, I take the appropriate action to correct them and hold them to standard*
9. *I provide clear direction when communicating with others*
10. *I communicate using the most effective mode (i.e., face-to-face, text, email, etc.) given the nature of their message*
11. *I state priorities when communicating with others*
12. *I use terms, phraseology and acronyms that are familiar to others*
13. *I proactively provide information to team members who need it*
14. *I seek and use information or data from all available sources to solve problems.*
15. *I provide "big picture" summaries to my team to help them understand the situation*
16. *I accept recommendations, input and corrections from others*

Appendix C

Participant Mid-Course Feedback Questions

1. We've discussed leader attributes and competencies. Have you gained any particular helpful insights when discussing those areas of character, presence and intellect, and building trust, developing others and taking action?
2. We've spent two seminars discussing influence techniques and how to best communicate and inspire, both to our teams and to our bosses. Any particular valuable or useful insights from these lessons?
3. Assessing your actions, do you believe you have changed in your approach to leading, communicating and passing information with *your team* based on what we've discussed in class? (If you have examples of something that has happened in your life where you have used something from class, please provide details).
4. Do you believe you've changed in your approach to leading, communicating and passing information with colleagues, friends, spouses/partners (outside of work) based on what we've discussed in classes? (If you have examples of something that has happened in your life where you have used something from class, please provide details).
5. In thinking about leadership/followership, communicating, and passing information, what particular insight has been new to you, or what issue have you seen in a different way, based on our seminars and discussions?
6. What has been the most interesting take-away from the class that you are attempting to apply in your personal leadership style?
7. What has been the least interesting topic that we've discussed that you think we ought to eliminate or spend less time discussing (in future sessions)?
8. Do you believe that our seminars will contribute to improving [name of the organization] organizational and cultural approach to healthcare by increasing partnership, trust and improved communication with other members of the healthcare team?

Appendix D

Observer Informed Consent and Survey (Combined in singular email)

- 1). Objectives: The objective of this survey is to gather information as to how participants in the Healthcare Leadership Development Course are viewed by their professional colleagues, their healthcare teammates, and their spouse (as applicable) as leaders in the profession of healthcare.
- 2). Researcher: This survey is being requested and will be analyzed by Mark Hertling. Mark is a retired Army Lieutenant General who has recently served in the private sector as Senior Vice President at Florida Hospital in Orlando, Florida. Mark is pursuing a doctoral degree at the Crummer School of Business, Rollins College and is using the results of this research as part of the requirements for that degree.
- 3). Importance: All information collected in this survey will contribute to a research thesis to better understand the state of healthcare leadership in the U.S. as well as to better understand the outcomes of leadership training for healthcare professionals.
- 4). Selection: The participants of the Healthcare Leader Course have been asked to provide the name and email of a peer, a nurse teammate, and their spouse (if married). *A participant in the course has provided your name as someone who knows them well and who observes their leadership style on a regular basis. They have asked if you will complete this survey prior to participant starting the healthcare leadership course, and again at the end of the course in December 2018.*
- 5). Completion: It is critical that you answer all questions honestly and accurately so that it reflects your views regarding this individual. All answers will remain anonymous and confidential. The individual you are rating will not see these results. These data will only be used for the purpose of a study on healthcare leadership styles and changes in approaches. *If at any time you feel uncomfortable answering any of the questions, or your chose not to participate, you may stop taking the survey. Neither you nor the participant in our healthcare leadership development course will be penalized for your decision. If you are comfortable providing this information, you will be asked to say “yes” on the survey questions before submission and that will constitute your informed consent approval.*
- 6). Results and incentives: When all pre- and post-course surveys have been collected, compiled, analyzed, and assessed in the research study, a copy of that research will be sent to each individual participant. The findings will allow participants to see the state of healthcare leadership change as a result of healthcare leaders’ participation in the program.
- 7). Time: This survey should take no longer than 15 minutes to complete and return.

8). **Directions:** The survey questions are relatively self-explanatory, and answers should reflect your views regarding the question to the best of your ability. Upon completion, please press “submit” and the survey will automatically be sent to a data base. If there are any questions, please contact me at mark.hertling@flhosp.org or call or text my cell phone at 253-318-0777. Please return within 3 days of receiving this email.

Thank you in advance for completing this survey!

OBSERVER SURVEY

Name of the participant you are rating (doctor/nurse/administrator): _____

How long have you known the participant? _____

Relation to the participant ____ colleague ____ nurse teammate ____ spouse

Based on your observation of this participant, please indicate on a scale of 1 (very rarely) to 6 (almost always) how common it is for them to exhibit the following behavior:

<i>Very Rarely</i>						<i>Almost Always</i>
1	2	3	4	5	6	

1. Participant exhibits values and behaviors that others admire
2. Participant requests and listens to other’s opinions and recommendations
3. Other people trust the participant
4. Participant provides clear direction when communicating with others
5. Participant communicates using the most effective mode (i.e., face-to-face, text, email, etc.) given the nature of their message
6. Participant states priorities when communicating with others
7. Participant uses terms, phraseology and acronyms that are familiar to others
8. Participant proactively provides information to team members who need it
9. Participant seeks and uses information or data from all available sources to solve problems.
10. Participant provides “big picture” summaries to his/her team to help them understand the situation

- 11. Participant requests assistance from others when he/she needs it*
- 12. Participant takes time in helping other people develop and reach their potential*
- 13. Participant offers assistance to others when they need it*
- 14. Participant actively monitors and checks for errors made by his/her team*
- 15. If others on the participant's team make errors, participant takes the appropriate action to correct them and hold them to standard*
- 16. Participant accepts recommendations, input and corrections from others*

Appendix E

Code Book: Themes and Key Words

Theme and Respective Key Words	Definitions
Leadership (Attributes and Competencies)	
<ul style="list-style-type: none"> • Values • Character • Presence • Influence Techniques 	<p>The principles, standards and qualities that contribute to ethical and professional decision making.</p> <p>A leader’s moral and ethical qualities based on background, culture, approach; who a person is.</p> <p>The impression a leader makes on others based on a variety of factors.</p> <p>How a leader creates and relays their message, behavior and attitude to affect intention, behaviors and attitudes of others when attempting to achieve results.</p>
Communication	
<ul style="list-style-type: none"> • Communication • Active Listening 	<p>Achieving shared understanding through written or oral transmission of ideas, new or better awareness of information.</p> <p>Fully comprehending the sender’s message; involves avoiding interruption, noting important points, ensuring clarification of message.</p>
Information Exchange	
<ul style="list-style-type: none"> • Identification of “those who need to know” • Information sharing 	<p>Determining those who need information for the effective accomplishment of their duties.</p> <p>Providing information to those who contribute to reaching the objectives of the organization.</p>
Healthcare Collaboration	
<ul style="list-style-type: none"> • Increasing team collaboration • Developing trust with hospital team • Exhibiting mutual respect • Nurturing organizational commitment 	<p>Empowering diverse teams to set and accomplish goals together, using all elements of the team.</p> <p>Encompasses reliance on and confidence in others, based on shared understanding; identification of common interests and goals.</p> <p>Understanding the diverse contributions of others to the team or organization; treating all as valued members of the team.</p> <p>Contributing to goals and objectives of those who are part of the organization and the organization’s values and goals.</p>