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Why doctors lead multidisciplinary prostate cancer clinics: a grounded theory study of leader motivation

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WHY DOCTORS LEAD MULTIDISCIPLINARY PROSTATE CANCER CLINICS: A GROUNDED THEORY STUDY OF LEADER MOTIVATION

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In 2010, I traveled to India with a small group of doctoral students. As we visited the country's universities, clinics and microenterprises, several of our hosts inquired why I would return to school at an age when India's people traditionally retire. Rather than answer that very reasonable question, I would like to acknowledge those individuals who supported my research without ever questioning its value. They either knew me so well they had no need to ask, or they shared my passion for the subject and found that to be motivation enough.

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ABSTRACT

The purpose of this grounded theory study was to develop a construct that describes the motivations of physicians to lead multidisciplinary prostate cancer clinics (MPCCs). Medical leaders play a key role in increasing the number of MPCCs, which are not yet widely available to patients in the United States. Understanding what motivates these physicians to lead is an important dimension of developing, recruiting, and retaining MPCC leaders.

This study collected qualitative, empirical data from 12 MPCC medical leaders located throughout the United States. Utilizing theoretical sampling and constant comparison, the data derived from face-to-face interviews were used to create a new construct of MPCC medical leaders' motives called *Leader-Stage Motivation* (LSM).

In the LSM construct a physician experiences 11 motivational factors while leading a multidisciplinary prostate cancer clinic. These 11 factors are grouped into 5 motivational patterns: mentored self-efficacy, purpose-driven goal, multidisciplinary relatedness, time-moderated challenge, and achievement-driven goal. Each of these 5 patterns is directly related to the leader's role during 3 stages of MPCC development: leader-creator, leader-sustainer, and leader-renewer.

The LSM construct is distinct from other leadership motivation theories such as leadership motive pattern (McClelland, 1975), role motivation theory (Miner, 1978) and motivation to lead (Chan & Drasgow, 2001). Unlike these previous theories LSM establishes a relationship between the leader's motivations and changing leadership roles during the life cycle of an organization. The LSM construct also provides a new model of leadership motivation that is specific to medical leaders.

This study contributes to leadership motivation research by modeling physicians' motivations to lead in one type of multidisciplinary, patient-centered environment. The LSM construct gives health care providers a development, recruitment, and retention framework for future multidisciplinary prostate cancer clinic medical leaders. Results of this study may also contribute more broadly to an understanding of what motivates physicians to lead their peers.

Chapter 1: Study Overview

Some have said that all medical doctors are leaders (Chaudry, Jain, McKenzie, & Schwartz, 2008; NHS Leadership Academy, 2011; Tuso, 2003.) Yet, as physicians confront sweeping changes in American health care, they too need leadership. Law and tradition dictate that it takes a physician to lead physicians (Schyve, 2009). The doctor who becomes a medical leader faces a demanding role as a change agent with clinical credibility that is also responsible for financial performance and medical excellence (Mountford & Webb, 2009). For a physician the transition from healer to leader can also result in changes to personal beliefs and identity (Birrer, 2002; McAlearney, Fisher, Heiser, Robbins, & Kelleher, 2005; Quinn, 2010). In the face of such challenges what motivates physicians to lead their peers? That question is the subject of this study which examines physicians who lead in one type of highly collaborative environment: the multidisciplinary prostate cancer clinic.

Background

Over 1,600,000 Americans were diagnosed with cancer in 2012 (American Cancer Society, 2012a). Of those, more than 240,000 men learned they had prostate cancer (National Cancer Institute, 2012a). While prostate cancer patients diagnosed 30 years ago faced a 5-year survival rate of 75% (Denmeade & Isaacs, 2004) early detection and advances in treatment therapies allow 91% of men diagnosed today to live at least 15 years (American Cancer Society, 2012b). However, the growing number of prostate cancer treatment options creates a dilemma for many newly diagnosed patients who are faced with over 150 combinations of prostate treatments and outcomes (Nguyen &

Kattan, 2009). Each of these treatment alternatives has a range of side effects, some of which can substantially affect a man's quality of life.

The prostate cancer patient's physician plays an important role in helping him to choose between alternative therapies (O'Rourke, 1997; Wong et al., 2000). As recently as the 1980s, physicians were inclined to direct their patients toward cancer therapies with which they were most familiar, with limited input from the patient himself. This practice has changed over the last 30 years and there is a growing emphasis on patient-centered care and shared decision making (Beauchamp & Childress, 2009). Studies have shown that more than 60% of prostate cancer patients prefer to understand their treatment options and share treatment decisions with their physicians (Steginga & Occhipinti, 2004; Wong et al., 2000).

The complexity and rapid evolution of cancer therapies challenges physicians to continuously build their knowledge and to collaborate widely with other professionals from other disciplines (Porter & Teisberg, 2007). For example, a single case of prostate cancer diagnosis and treatment may involve as many as seven medical specialists, including oncologists, pathologists, psychologists, radiation oncologists, radiologists, surgeons, and urologists (Gomella et al., 2010). As new cancer therapies have developed, so too have new organizational structures that expand collaboration among treating clinicians (Fennell et al., 2010).

Accrediting organizations play an important role in describing the preferred structures for multidisciplinary care. The National Cancer Institute (NCI) provides treatment and research requirements for NCI-designated cancer centers, which give patients access to care and clinical trials within a multidisciplinary environment (Simone,

2002). The NCI designation requirements are so stringent that only 67 such centers currently provide patient care in the United States (National Cancer Institute, 2013). Many more cancer programs across the country are accredited by the American College of Surgeons Commission on Cancer (COC) which publishes standards that participating organizations must follow. COC guidelines for cancer centers also emphasize collaboration between physicians including disease-specific multidisciplinary cancer conferences, also known as tumor boards (Commission on Cancer, 2012).

Tumor board conferences allow a diagnosing physician to present a patient case to colleagues from a range of cancer-related disciplines and seek diverse input on the best treatment for the patient. These conferences are widely used by cancer centers throughout the United States, Canada, and Europe. However, tumor board conferences' exclusion of the patient's perspective limits the utility of this process in creating treatment recommendations for diseases such as prostate cancer, where patient preferences are a critical element of treatment decisions (Fennell et al., 2010; Lamb et al., 2011).

As an alternative to tumor board conferences, the NCI has historically supported a multidisciplinary team approach that includes the patient in the treatment decision process (Fennell et al., 2010; Swanson et al., 2011). The multidisciplinary cancer clinic (MDCC) visit offers patients and their families an opportunity to meet with a range of physician specialists at one location and quickly obtain a comprehensive cancer treatment recommendation – often on the same day. These clinics are particularly appropriate for prostate cancer cases, where treatment options are broad and patient preferences are an important decision component (Hudak et al., 2007).

From an ethical perspective, multidisciplinary prostate cancer clinics address two prostate cancer patient concerns: a lack of understanding of the treatment being recommended and a fear that physicians are biased toward recommending their own specialties (Hudak et al., 2007). When multiple physicians communicate directly with a patient regarding treatment decisions there is limited opportunity for a single physician to control the sharing of information or to exert a paternalistic influence on the patient's decision process (O'Rourke, 1997; Payne, 2008). In addition, having multiple specialists who are committed to finding the most effective treatment for each patient, rather than the most profitable one, reduces the likelihood that a treatment will be recommended strictly due to financial incentives (Payne, 2008; Reiling, 2009).

Multidisciplinary prostate cancer clinics (MPCCs) also provide practical benefits when compared to traditional cancer care. While outcomes for MPCC patients treated for early stage cancers are similar to outcomes found in other care delivery settings, some MPCC patients with advanced cancers have shown improved 5-year outcomes when compared with the national average (Gomella et al., 2010). In addition, patients have reported high levels of satisfaction with multidisciplinary cancer clinic treatment (Gomella et al., 2010; Hudak et al., 2007; Litton et al., 2010). Strategically, the MPCC structure is consistent with a move toward value-based competition spurred by U.S. health care reform, which favors integrated practice units (IPUs) where providers with different disciplines are organized around specific diseases (Porter & Teisberg, 2006).

Despite their apparent advantages, the availability of MPCCs is limited. Challenges to the formation and ongoing success of multidisciplinary clinics include physicians' difficulties with prioritizing shared clinic hours over individual schedule

commitments (Grusenmeyer, Petrelli, & Strusowski, 2006) and physicians' concern over relinquishing autonomous patient relationships (Bellardita, Donegani, Spatuzzi, & Valdagni, 2011). Both of these challenges are symptoms of the conflict between the multidisciplinary approach to care and the medical tradition of physician independence.

The United States has a history of laws and cultural norms that have guarded the physician's right to make independent decisions regarding patient care and treatment. Since the 1980s health care reimbursement changes and access to electronic information have eroded physician independence, leading some doctors to feel burdened and frustrated (Mechanic, 2003). As multidisciplinary teams and evidence-based protocols become more prevalent, physicians in the U.S. have a growing need for medical leaders who can lead them through this transition in practice design (Krasna, 2009; Mechanic, 2003; Reiling, 2009).

The medical leader's role is distinctly different from that of the clinical manager (Quinn, 2010). Medical leaders are generally physicians who have risen to a position of influence through their clinical accomplishments (Holmboe et al., 2003; Kusy, Essex, & Marr, 1995; Mountford & Webb, 2009). While the primary responsibility of a clinical manager is to streamline complex procedures for the entire clinical team, the medical leader's role is to inspire physician colleagues to embrace change and adopt new processes and organizational structures (Lee, 2010).

Recruiting medical leaders can be challenging. Formal leadership training has historically not been incorporated in medical school curricula (Blumenthal, Bernard, Bohnen, & Bohmer, 2012; Porter & Teisberg, 2006). As their careers mature accomplished clinicians are not necessarily eager to engage in leadership development

and activities at the expense of their extant practices (Beresford, 2006). To successfully engage physicians in medical leadership activities, individuals who recruit, develop and retain medical leaders need to understand the factors that motivate physicians to embrace leadership roles (Snell, Briscoe, & Dickson, 2011). Those factors have not been widely studied in health care settings.

In a broader sense, work motivation research in the early twenty-first century has transitioned from an earlier competition between theories to the productive coexistence of studies regarding multiple sources of motivation (Latham & Pinder, 2005). Specific studies regarding leader motivation have yielded similarly diverse results. Some studies have emphasized cognitive factors such as self-efficacy (Chan & Drasgow, 2001) and self-regulation (Kark & Van Dijk, 2007) while others have focused on basic needs such as competence (Csikszentmihalyi, 2003) and power (McClelland, 1975). Chan and Drasgow (2001) acknowledged that a leader's work environment influences motivation and suggested that future studies should examine "how motivation to lead interacts with situational factors to affect a person's decision to lead in specific circumstances" (p. 496).

As health care organizations address the growing demand for effective physician leaders, considering leadership motivation in development and retention programs will become increasingly important. The ability to define a leader's core motivations may allow organizations to anticipate how well individuals will fit particular leadership roles (Barbuto, 2005; Miner, Crane, & Vandenberg, 1994; Miner, Smith, & Bracker, 1989). Further, the ability of leaders to understand and modify their own motivations can positively impact their leadership behaviors (Barbuto, 2005; Deci, Connell, & Ryan, 1989; Johnson, 2008). A deeper understanding of what motivates physicians to accept

and perform leadership roles may help evolving health care organizations develop, recruit, and retain medical leaders in multidisciplinary settings.

Problem Statement

Despite empirical research which validates the benefits of Multidisciplinary Cancer Clinics (MDCCs) to patient outcomes and satisfaction (Aizer et al., 2012; Gomella et al., 2010; Hudak et al., 2007; Litton et al., 2010), access to this standard of care is not widely available. Studies have identified the importance of medical leadership to the foundation and ongoing success of multidisciplinary clinics (Bellardita et al., 2011; Hudak et al., 2007; Grusenmeyer et al., 2006). However, these studies have not specifically researched MDCC leader characteristics such as motivation, which is an important element of leader development, recruitment and retention (Chan & Drasgow, 2001; Day, 2001).

There is a lack of consensus regarding the sources of leadership motivation. Additional studies are necessary to understand what motivates individuals to lead in specific workplace contexts and situations such as MPCCs (Chan & Drasgow, 2001). Given the recognition that leader motivation is an important element of leadership performance and the lack of prior research regarding motivation to lead in the health care environment, there is a need to explore what motivates physicians to serve as medical leaders.

Purpose and Importance of Study

The purpose of this grounded theory study was to develop a construct that describes the motivations of physicians to lead multidisciplinary prostate cancer clinics. The study collected qualitative, empirical data from medical leaders of MPCCs

throughout the United States. The data derived from individual interviews were then used to create a substantive model of MPCC physicians' motivations to lead. This study contributes to the research by examining motivations for physicians to make the transition from a healing role to a leadership role. The resulting model gives health care providers a development, recruitment and retention framework for future multidisciplinary prostate cancer clinic medical leaders. Results of this study may also contribute more broadly to an understanding of what motivates physicians to embrace peer leadership roles.

Research Questions

In a qualitative study the central research question is framed to focus the purpose statement while also providing the researcher with the flexibility to deeply explore a central concept (Corbin & Strauss, 2008; Creswell & Plano Clark, 2011). Creswell (2007) recommended that a central qualitative research question should be open-ended, begin with the word *how* or *what* and specifically restate the study's purpose. The central research question that guided this study was: what theory describes medical leaders' motivations to lead multidisciplinary prostate cancer clinics?

Creswell (2007) recognized that a qualitative study may also have a limited number of sub-questions focused on the issue or the research process. In the case of a grounded theory study these may be procedural sub-questions that reflect the process for developing a theoretical model. This study incorporated the procedural perspective by addressing four sub-questions:

1. What categories emerged during open and focused coding?
2. What relationships between categories emerged from theoretical coding?

3. What refinements to the categorical relationships resulted from sorting the researcher's memos?
4. What theoretical model emerged when the categorical relationships were diagrammed?

Operational Definitions and Key Terms

The following operational definitions and key terms guided this study:

Leader Motivation: The factors that affect "a leader's or leader-to-be's decisions to assume leadership training, roles, and responsibilities and that affect his or her intensity of effort at leading and persistence as a leader" (Chan & Drasgow, 2001, p. 482).

Medical Leader: A credentialed physician who holds a leadership role "relevant to the practice of medicine. Physician leadership can include resource managing, decision making, recruiting and medical consulting as well as implementing changes and improvements in hospitals and clinical settings" (Chadi, 2009, p. 53). In the context of this study the medical leader is further defined as a physician who holds or has held a leadership role within a multidisciplinary cancer clinic. Mountford and Webb (2009) described physicians who lead practice units as service leaders. These leaders are advocates for their own teams and have "detailed knowledge of the relevant clinical evidence base and constantly innovate to improve patient care…accountable for the overall performance of the service, both clinically and financially" (p. 4).

Multidisciplinary Prostate Cancer Clinic: A health care program that offers previously diagnosed patients the opportunity to consult with multiple cancer specialists during a single visit, receive treatment recommendations within one week, and actively

participate in the treatment decision process. The National Cancer Institute (2012b) specifies that the primary disciplines in multidisciplinary cancer care are "medical oncology (treatment with drugs), surgical oncology (treatment with surgery), and radiation oncology (treatment with radiation)" (para. 1).

Theory: An explanation of a phenomenon using concepts or themes that are interrelated in a systematic manner (Corbin & Strauss, 2008). This study used an interpretive approach to theory which Charmaz (2006) described as "the imaginative understanding of the studied phenomenon. The interpretive approach assumes emergent, multiple realities; indeterminacy; facts and values as linked; truth as provisional; and social life as processual" (p. 126).

Study Assumptions

A research assumption is defined as "a condition that is believed to be true even though the direct evidence of its truth is either absent or very limited" (Pyrczak & Bruce, 2007, p. 73). The fundamental assumptions of this study were:

1. Participants in this study had no vested interest in influencing this study's data or analysis.
2. Participants in this study responded to questions truthfully and made a sincere effort to recall past events and experiences.
3. Participants who were identified as medical leaders by their organizations acted in leadership roles rather than purely managerial capacities.

Study Limitations

A qualitative study's limitations represent weaknesses that may limit the trustworthiness of the research findings. Limitations of this study included:

1. The researcher's inherent biases resulting from prior experience in health care governance and from the academic study of leadership. The use of prepared interview questions and verbatim transcripts limited these biases during data gathering. A structured approach to coding was used to ensure the researcher did not superimpose pre-conceived ideas on interview data during data analysis. Member checking also allowed participants to reflect on whether the contruct developed from the data was reflective of their own experiences.
2. The use of theoretical sampling. While initial participants were selected from a cross section of Multidisciplinary Cancer Clinics and represented a variety of clinical backgrounds, the grounded theory study design called for additional participants to be selected based on questions and ideas which arose during the data analysis process. The researcher used memo-writing to document the basis used for selection of study participants.
3. The small sample size. The researcher identified 30 multidisciplinary prostate and genitourinary clinics in the United States and interviewed leaders from 12 of these. Although the researcher estimated that less than 100 such clinics exist in the U.S., the sample size and unverified total number of clinics prevent this study's results from being generalized to all MPCC medical leaders.
4. The dependence on self-report as the primary tool for data collection. There may be a lack of congruence between what individuals reported their motives to be and what their behaviors or expressions indicated as their motives. This limitation was addressed by incorporating the researcher's physical observations of each participant's actions in this study's data.

5. The limitation of the data to participants' conscious motivations. There was no attempt to obtain or consider unconscious motivations in this study's data-gathering or analysis.
6. The dependence on each participant's own interpretation of leadership and leading. The researcher did not define the term *leader* for participants, but rather allowed each individual who was interviewed to describe his or her activities, thoughts and feelings when acting in a self-perceived leadership role.

Study Delimitations

In contrast to limitations, a study's delimitations represent boundaries which were deliberately set by the researcher (Pyrczak & Bruce, 2007). This study intentionally restricted participants to those physicians who founded, currently lead, or previously led a multidisciplinary prostate cancer clinic (MPCC). The population was narrowed due to the researcher's specific desire for the study's results to inform the recruitment, development and retention of MPCC leaders. Based on this delimitation, study results are not generalizable to other health care or leadership populations.

Organization of the Study

This study contains five chapters. Chapter 1 begins with an introduction to the research problem, followed by a summary of the study's purpose, research questions, assumptions, and limitations. Chapter 2 provides an overview of the literature which supports this study's importance and also includes a review of theories that are relevant to the study's findings. Chapter 3 presents the rationale for the study design; describes the emergent methods for sampling, instrumentation, interview procedures, and data analysis; and examines human subject considerations. Chapter 4 details the study's results by

addressing each of the research questions and presenting a visual depiction of the study's construct model. Finally, Chapter 5 presents this study's implications for theory, practice, and future research.

Chapter 2: Literature Review

The timing of a grounded theory study's literature review is controversial. Glaser and Holton (2004) stressed that pre-study review of theoretical constructs may impede the researcher's ability to induce novel theories from a study's data. Corbin and Strauss (2008) countered that becoming familiar with study-related literature before data analysis could make the grounded theory researcher more sensitive to subtle nuances. However, they cautioned that a researcher should not become "so steeped in the literature that he or she is constrained and even stifled by it" (Corbin & Strauss, 2008, p. 36). Charmaz (2006) encouraged the grounded theory researcher to become immersed in leading studies and theories within the field before beginning data collection, set aside the materials during the study, and describe how the resulting theory relates to prior research after the study's theoretical model is complete. While each of these grounded theory experts advocated completing the literature review after a study's empirical data are collected and analyzed, they varied widely in their opinions about how much, if any, of that review should be written before the study begins.

In a comparison of two dissertation literature reviews, McGhee, Marland, and Atkinson (2007) acknowledged the tension between the ideal state of approaching grounded theory without preconceived ideas and the practical reality of academic standards which require review of the literature before a study begins. The authors recommended that each grounded theory researcher consider four factors before deciding on the breadth, and depth, of their pre-study literature review. First, the ontological perspective of the researcher is important since it informs the study approach and analytical process. Expertise and topical knowledge in the field also impacts the

researcher's ability to acknowledge the influence of that expertise and knowledge. Further, the degree of experience with grounded theory methods is considered an important decision factor, as are the requirements of the researcher's institutional ethics committee.

For this study the researcher selected the constructivist approach to grounded theory proposed by Charmaz (2006) whose methodology favors a balance of pre- and post-study literature review. The study's primary research question – what theory describes medical leaders' motivations to lead multidisciplinary prostate cancer clinics? – required a review of three specific bodies of research. Before the study began a detailed examination of multidisciplinary prostate cancer clinics (MPCCs) provided the basis for understanding the roles their medical leaders play, as well as the leaders' challenges and rewards. Given this foundation, which narrowed the review of leadership to the MPCC context, the researcher next examined medical leaders from the perspective of three leadership constructs. Finally, the researcher investigated several theories of motivation that align with these three leadership theories. Based on this study's results the review of motivation literature was later expanded to incorporate additional research in the area of leader motivation.

Multidisciplinary Prostate Cancer Clinics

A multidisciplinary prostate cancer clinic (MPCC) offers previously diagnosed patients the opportunity to consult with multiple cancer specialists during a single visit and to receive treatment recommendations quickly thereafter (Gomella et al., 2010; Hudak et al., 2007). Those specialists include, at a minimum, three disciplines: surgical oncology, radiation oncology and medical oncology (National Cancer Institute 2012b).

As further defined by this study, the MPCC supports active participation of patients and their families in the treatment decision process which includes education and counseling.

The multidisciplinary, clinic-based approach to cancer treatment is a recent alternative to traditional care delivery, in which a patient was historically referred to one or more specialists by his primary physician (Fennell et al., 2010). It is estimated that there are currently less than 100 multidisciplinary prostate cancer clinics in the United States. The oldest of these clinics in continuous operation was founded in 1996 (Gomella et al., 2010). Growth of the MPCC care model has been influenced by three primary factors: medicine, ethics, and economics. These influences have created both the impetus to develop MPCCs and barriers to the model's widespread adoption in the U.S.

Medical factors. Although one in every six American men will be diagnosed with prostate cancer in their lifetimes (Brolley, 2010) the disease was thought to be extremely rare when first identified in Europe early in the 19th century (Denmeade & Isaacs, 2004). During the 20th century a dramatic increase in prostate cancer diagnoses triggered growing interest in new treatment modalities. The evolution of five medical technologies drove progress in prostate cancer treatment: surgery, hormone therapy, radiation therapy, chemotherapy and chemical screening. These technologies developed at different paces over 100 years, yet all five have reached maturity levels that support extensive outcomes research.

Several treatments, or treatment combinations, are considered to create equally good outcomes in many prostate cancer cases (Hudak et al, 2007; Moul, Armstrong, & Lattanzi, 2010). However, the potential for these treatments to impact sexual, urinary, and bowel function create a complex decision environment for patients and their families

(Denberg, Melhado, & Steiner, 2006; Spencer et al., 2003; Zeliadt et al., 2006). MPCCs allow specialists to collaborate closely with each other and with patients in evaluating treatment options (Fennell et al., 2010).

A recent study at Thomas Jefferson University indicated that patients with advanced prostate cancer had better outcomes than the national average when treated in a MPCC (Gomella et al., 2010). Other studies have indicated that the multidisciplinary clinic structure enables patients' enrollment in clinical trials that advance new cancer treatments (Grusenmeyer et al., 2006; Hudak et al., 2007; Madsen, Craig, & Kuban, 2009; Reiling, 2009) and increases the utilization of active surveillance by low-risk patients (Aizer et al., 2012). Together these studies provide a medical rationale for the multidisciplinary, clinic-based approach to prostate cancer care. A review of the primary prostate treatment modalities helps to create an understanding of the rate at which these treatments have advanced in recent years, and recognition of multidisciplinary care's complexities.

Surgery. The earliest known treatment for prostate cancer was surgical removal of solid tumors for palliative relief of urinary obstructions (Denmeade & Isaacs, 2004). The first surgical removal of the prostate gland was performed at Johns Hopkins Hospital in 1904, using a technique that required a small incision in the pubic area. This surgery was largely used to control symptoms and became the standard for prostate cancer care until 1945, when retropubic prostate removal was introduced. The new surgical technique, in which both the prostate gland and adjacent lymph nodes could be removed through an abdominal incision, allowed the cancer to be graded based on the number of affected nodes and helped to control the metastatic spread of cancer. Since both of these surgical

approaches generally caused patients to become impotent due to nerve damage, they were not widely adopted for prostate cancer treatment (Denmeade & Isaacs, 2004).

In 1983 a surgeon at Johns Hopkins Hospital demonstrated a new technique for retropubic prostate removal. This procedure, which allowed most patients to retain sexual function, became known as *nerve-sparing prostatectomy* (Walsh, Lepor, & Eggleston, 1983). More recently, adoption of robotic-assisted prostatectomy allowed surgeons to remove the prostate gland, surrounding capsule and adjacent lymph nodes using a series of small incisions. Since robotic techniques have been in widespread use for a limited time, long-term research on outcomes is not yet available and nerve-sparing prostatectomy continues to be widely used. However, the shortened recovery time resulting from robotic techniques represents another advance in surgical treatments, controlling disease and preserving a patient's quality of life (Moul et al., 2010).

Between 1974 and 1993, the percentage of men with prostate cancer who were treated with removal of the prostate gland, capsule and lymph nodes – a procedure known as radical prostatectomy – increased three-fold (Jemal et al., 2003). Although these procedures are still widely performed by general surgeons the increased demand for robotic procedures has created a niche for surgeons with special training in robotic prostate cancer surgery, which has a long learning curve involving up to 250 surgeries (Moul et al., 2010). Virtual reality surgical simulation can assist in this learning process for both novice and expert robotic surgeons (McDonough, Tausch, Peterson, & Brand, 2011).

Cryotherapy is an alternative to surgery in both new and recurrent cancers that are confined to the prostate gland. Though originally introduced in the 1960s, this therapy

created significant complications until the evolution of ultrasound imaging allowed a greater level of precision in its application (Finley & Belldegrun, 2011). The use of multiple fine needles to insert freezing gas into the prostate gland kills the gland's cells, which are gradually absorbed into the body. Although this minimally invasive and low toxicity procedure may be a good alternative to surgery in some patients, additional clinical trials are needed to confirm its long-term effectiveness (Finley & Belldegrun, 2011).

Radiation therapy. The first attempts to use radium as a prostate cancer treatment occurred early in the twentieth century, not long after Madame Curie's discovery of the radioactive substance (Denmeade & Isaacs, 2004). Between 1909 and 1917 there were several published reports of radium being applied internally using catheterization. These were followed by an improved technique which inserted the radium into the prostate gland through needles. Both methods improved symptoms of localized prostate cancer but were difficult procedures that caused patient discomfort (Denmeade & Isaacs, 2004).

Internal radiation treatments did not significantly advance until the 1980's, when brachytherapy was introduced. This therapy, which inserts radioactive seeds in the prostate gland using a needle guided by ultrasound imagery, is used to treat localized cancer (Ragde, Grado, Nadir, & Elgamal, 2000). The implanted seeds deliver a dose of radiation directly to the prostate over a period of several weeks with minimal damage to surrounding tissue. However, this targeted dose does not effectively treat cancer cells which are not contained within the prostate (Moul et al., 2010).

Until the 1960s, external beam irradiation of localized and metastatic tumors was limited by a lack of equipment that could deliver a powerful, concentrated dosage

(Denmeade & Isaacs, 2004). Introduction of machines for Cobalt-60 therapy in the 1950s, followed by development of the linear accelerator in the 1960s, provided the tools to advance prostate cancer treatment using external beam radiotherapy (EBRT). Subsequent advancements included proton beam therapy for treatment of localized prostate cancer, stereotactic radiation to target high doses more accurately, and intensity modulated radiation therapy (IMRT) using three dimensional imaging.

Radiation therapies may be used as a primary treatment in localized prostate cancer, or in combination with hormone therapy, chemotherapy, and surgery. Most radiation requires complex and costly equipment, as well as radiation oncologists and technicians trained in the operation of each specific technology. The exception is brachytherapy, which is significantly lower in cost and may be administered in a local clinic (Saul, 2006). In spite of good outcomes and low cost, the use of brachytherapy has declined in areas where more advanced technologies such as IMRT are available. In some cases the significant investment required to acquire advanced radiation equipment is thought to affect physicians' inclinations to recommend one therapy over another (Saul, 2006).

Hormone therapy. Although physicians in the 1700s recognized a relationship between male hormone production and the prostate gland, conclusive evidence that a reduction in testosterone could inhibit prostate cancer was not published until 1941 (Denmeade & Isaacs, 2004). Initial hormone therapies involved the administration of oral estrogen or the surgical removal of the testicles to shrink tumor size and reduce prostate cancer symptoms. Subsequent research resulted in additional treatments which had similar palliative effects with fewer side effects. Both Charles Huggins in 1966 and

Andrew Schally in 1977 were awarded Nobel prizes for their development of these hormone therapies for prostate cancer (Denmeade & Isaacs, 2004). In the years since, significant advances have been made in the use of drugs which complement testosterone suppression by inhibiting the hormone's chemical receptors. Today this treatment is known as androgen-ablation therapy (Moul et al., 2010).

As research continues into the 21st century, hormone therapy is not considered a curative treatment for prostate cancer. However, androgen-ablation provides more than palliative relief for advanced disease. It is increasingly used in conjunction with electronic beam radiotherapy, where it can reduce prostate size to minimize the extent to which surrounding tissues are irradiated (Moul et al., 2010). There is also growing interest in immunotherapy in aggressive and metastatic prostate cancers. Recent clinical trials of cancer vaccines have indicated that certain immunotherapy treatments provide improved survival, particularly when administered in conjunction with hormone therapy (Gulley & Drake, 2011). In advanced prostate cancer a close relationship is needed between urologists, radiation oncologists and the medical oncologists who administer hormones and immunotherapy (Sternberg et al., 2007). These linkages not only serve the patient well in minimizing the symptoms of advanced disease, but also enable enrollment in clinical trials that further treatment research.

Chemotherapy. Over time, patients treated with androgen-ablation therapy develop a resistance to treatment known as *androgen independent disease* or *castration resistant disease* (Denmeade & Isaacs, 2004; Moul et al., 2010). When hormone therapy is no longer effective against prostate cancer, chemotherapy offers an alternative that may control the speed of disease progress and resulting pain. Since 1947 researchers have

tested chemical agents specifically targeted to kill prostate cancer cells when administered intravenously. Similar to hormone therapy, chemotherapy treatments for prostate cancer have thus far proven to be palliative rather than curative. However, recent clinical trials indicate that newer combinations of chemotherapy can also increase the life span of patients with advanced disease (Sternberg et al., 2007).

Like hormone therapy, chemotherapy treatments are generally administered by a medical oncologist. Since the use of chemotherapeutic agents is currently limited to advanced, castration resistant prostate cancer, there is an emphasis on identifying the point at which hormone therapy loses its effectiveness (Moul et al., 2010). This creates an environment where frequent interaction between medical oncologists and urologists is critical for mitigating the pain and side effects of advanced prostate cancer, particularly when hormone therapy is being delivered by urologists who may not have access to beneficial chemotherapy or clinical trials (Sternberg, et al, 2007).

Active surveillance. The process known as active surveillance was made possible by three advances in prostate cancer screening and diagnosis that were developed between 1966 and 1987 (Denmeade & Isaacs, 2004; Moul et al., 2010). The first of these was the process known as Gleason scoring, which predicts the aggressiveness of a particular cancer by adding two cell pattern values from a tumor biopsy. Although this system was developed and published in 1966 by a physician in the Veterans Administration, it was not widely adopted until 1987, when its uniform use in scientific publications was recommended by a group of leading pathologists (Altman, 2009).

Needle biopsies of prostate tissue were in use prior to the advent of the Gleason score, but they were difficult to perform and had unreliable results (Kaufman, Rosenthal

& Goodwin, 1954). In the 1980s, development of an ultrasound-guided process to accurately take multiple prostate biopsies enabled high quality scoring of prostate tumors (Denemeade & Isaacs, 2004). In 1985, the Food and Drug Administration's approval of the prostate specific antigen (PSA) test introduced a new era of early prostate cancer diagnosis. This test, which detects changes in prostate activity through elevated PSA levels, continues to be used for both pre-diagnosis screening and post-diagnosis monitoring (Moul et al., 2010). Collectively, the PSA test, needle biopsy, and Gleason score facilitated early prostate cancer identification and accurate patient risk analysis.

For a patient with low risk, as indicated by low PSA, Gleason and tumor staging numbers, active surveillance through frequent PSA testing may be an option (Moul et al., 2010). This approach is often used with prostate cancer patients when the disease is expected to progress slowly or another cause of death is likely. It is also recommended for the first two years following surgery in cases where small numbers of cancer cells are found immediately adjacent to the prostate gland (Moul, 2009). A recent study showed that patients who made treatment decisions in a MPCC environment selected active surveillance twice as often as those who consulted with individual practitioners (Aizer et al., 2012).

In some medical environments, competition exists between surgical oncologists, radiation oncologists, medical oncologists and urologic oncologists (Payne, 2008). This can be particularly intense when incentives exist for physicians to recommend a particular treatment to their patients. Such incentives include higher reimbursements for one procedure versus another and ownership interest in a costly treatment technology (Harvard Prostate Knowledge, 2009; Makarov, Yu, Desai, Penson, & Gross, 2011; Saul,

2006). MPCCs have created a decision environment in which physicians agree to collaborate in the best interest of their patients rather than competing for their business. According to surveys conducted at one MPCC, many patients find "great comfort and relief in seeing that the specialists are working side-by-side on their behalf" (Hudak et al., 2007, p. 496).

Ethical factors. From the early 1900s through the mid 1980s, older prostate cancer treatments fell out of favor as new technologies were introduced (Denmeade & Isaacs, 2004). This pattern of a single, preferred prostate cancer treatment experienced a significant shift by 1990. The nearly simultaneous advent of PSA screening, nerve-sparing prostatectomy and ultrasound-guided needle prostate biopsy, followed closely by advances in radiation therapy, spawned an era of choice between multiple treatments with similar outcomes. This era coincided with a higher awareness of ethical decision making which considered patient autonomy, shared decision making between physicians and patients, and the importance of patient preferences (Beauchamp & Childress, 2009). The emergence of multidisciplinary cancer clinics provided an environment where patients could become more engaged in choosing between multiple treatment options (Fennell et al., 2010).

Patient autonomy. Historically, medical ethics in the United States and Europe focused on the physician's credo to *do no harm* (Beauchamp & Childress, 2009). For over 2,200 years, from the fall of Greece until the mid-twentieth century, the principles of doing no harm known as *nonmaleficence* and promoting good known as *beneficence* remained the core principles that guided physicians' ethical behavior. (Beauchamp & Childress, 2009; Katz, 2002). This changed with the Nuremberg trials of 1945 and 1946,

which exposed the atrocities of medical experimentation in German concentration camps and focused international attention on the rights of patients and research subjects. Eleven years later, in *Salgo v. Leland Stanford Jr. University Board of Trustees*, the phrase *informed consent* was used to describe the patient's or subject's right to understand a medical or research procedure and to explicitly consent or refuse such a procedure in advance (Katz, 2002). Over the next 20 years, a series of United States court cases and state laws created the standards which now define western medical ethics and describe a patient's right to autonomy (Beauchamp & Childress, 2009).

Quill and Brody (1996) proposed that the underlying concept of patient autonomy is a fundamental respect for the person and that "respecting a person means taking the time to listen to that person's unique story and ensuring that medical decisions are integrated into the current chapter of the patient's bibliography" (p. 766). The core elements of patient autonomy are liberty, in which the patient is independent from outside control, and agency, which represents the capacity to act intentionally (Beauchamp & Childress, 2009). Yet the expression of autonomy can vary with the state of wellness or disease. A patient with full physical and mental capabilities may wish to cede health decisions to physicians, family members or institutions, which does not constitute relinquishing autonomy. Or an elderly patient with diminished mental capacity may not be capable of determining when and where to eat, but still fully able to decide which foods are preferred. There are narrowly proscribed conditions under which a patient is found incompetent to make autonomous decisions which include the inability to describe a preference, the inability to comprehend information, the inability to appreciate a situation, and the inability to show reason in making a decision with consequences. The

lack of ability or willingness to make some decisions autonomously does not constitute permission to otherwise remove a patient's right to autonomy (Beauchamp & Childress, 2009).

Some theorists have argued that patient autonomy generally, and informed consent specifically, is not reasonable given the complexities of modern medicine (Thiroux & Kraasemann, 2009). Beauchamp and Childress (2009) countered that the proper standard should be adequate information as compared to full information, and that the health care provider is responsible for adequately conveying the risks and benefits of a procedure at a level that the patient can comprehend. Katz (2002) proposed that the physician must not only inform the patient, but also reflect on the patient's consent and engage the patient in conversation. The author described this as the difference between asking "To what extent should an individual's choices be respected?" or asking "To what extent should an individual's thinking about choices be respected?" and "Can and should a person's capacity for reflection be enhanced through conversation?" (Katz, 2002, p. 111).

A similar approach, called the enhanced autonomy model of clinical decision making, was proposed by Quill & Brody (1996). The authors considered enhanced autonomy distinct from and more beneficial than the independent choice model. Independent choice is dominated by the patient's experience and values, and assumes that the patient's gain in power has a corresponding loss in power by the physician. Enhanced autonomy emphasizes dialogue between the patient and physician to share knowledge. The physician admits any biases and guides the patient through a decision process while maintaining the level of clinical leadership expected by the patient.

Quill and Brody (1996) proposed six actions for physicians to enhance patient autonomy: sharing medical expertise while also carefully listening to the perspective of the patient, making recommendations that balance clinical facts with the patient's values and experiences, focusing on learning the patient's goals rather than discussing technical options, using disagreements as an opportunity to explore creative solutions through dialogue, allowing final decisions to be made by patients who are fully informed, and learning to communicate without under or over influencing patients. The authors concluded that ultimately "choices belong to patients, but these choices gain meaning, richness, and accuracy if they are the result of a process of mutual influence and understanding between physician and patient" (Quill & Brody, 1996, p. 768). This mutual influence and understanding is widely known as shared decision making.

Shared decision making. Studies consistently show that cancer patients want to share decisions with their physicians. Wong et al. (2000) studied 101 men with prostate cancer and found that patients faced with difficult and controversial decisions chose to share decision-making with their physicians over 60% of the time. Bruera, Sweeney, Calder, Palmer, and Benisch-Tolley (2001) studied 78 terminally ill cancer patients and discovered that 63% preferred shared decision making. This contrasted sharply with physicians' expectations that only 30% of patients would prefer to share in medical decision making. In their study of 111 men with localized prostate cancer, Steginga and Occhipinti (2004) concluded that 68% of patients preferred to share decision making with their doctors. While the nature of decision sharing varied by patient, a consistently high percentage of participants in all three studies desired active involvement in determining their treatment.

Holmboe and Concato's (2000) qualitative study of 102 prostate cancer patients showed that clinical information played a strong role in their decision process. Over 70% of the patients cited a reason other than physician recommendation as strongly influencing their decision, though 74% had received such a recommendation. Only 36% of participants explicitly stated that their urologist influenced their decision of treatment modality, and 71% chose a treatment other than surgery in spite of receiving that recommendation from at least one physician.

Wong et al. (2000) used quantitative methods to study the decision factors of prostate cancer patients. The research results indicated that patients had "an overwhelming desire for both physical and psychological information and for knowledge about the disease and treatment issues…and a wish for detailed explanations from the doctor" (Wong et al., 2000, p. 18). The authors noted that psychological variables amongst patients were shown to affect the nature of the desired information but did not influence the preference for shared decision making that over 60% of the men expressed.

Patient preferences. Bensing (2000) called personal significance the third source of information in evidence-based medicine. He asserted that physicians need to develop a discipline to ask for, and listen to, the patient's story. Yet it has been reported that physicians wait an average of only 18 seconds before they interrupt a patient's story and change the discussion to a physician-centric topic (Borkan, Miller, & Reis, 1992). In the words of Quill and Brody (1996), "to use medicine's power in a personalized way, physicians must become expert not only in the science of clinical medicine but also at learning about patients as unique human beings with life histories and values that must be used to guide treatment" (p. 766). The inclusion of patient preference in assessing

treatment options becomes even more essential in the face of multiple options, inconclusive evidence of efficacy or unknown side effects (Parascandola, Hawkins, & Danis, 2002). Such are the uncertainties that face a large percentage of prostate cancer patients (Denberg et al., 2006; Spencer et al., 2003; Zeliadt et al., 2006).

Although the importance of patient preferences may be accepted by physicians, it is not clear that the basis for valuing preferences is consistent amongst patients and doctors. In their qualitative study of prostate cancer patients, Muller-Englemann, Keller, Donner-Banzhoff, and Krones (2011) revealed two areas in which patients and physicians substantially disagreed on the value of patient preferences. The physicians who were studied believed the importance of treatment compliance was a strong indicator for considering patient preferences, while patients rated this as a weak indicator. Physicians also believed that a patient's preference for exerting control over his or her life was a strong indicator for shared decision making, while patients regarded this as a weak indicator.

Many physicians believe that patient preferences are an important element of treatment decisions, yet some lack the expertise to draw out those preferences (Elwyn, Edwards, & Kinnersley, 1999). When physicians and patients were asked to provide rank ordering of the importance of prostate cancer treatment side effects from the patient perspective, patient and physician rankings showed a minimal relationship – even when patients felt they had communicated these preferences to their physicians (Knight & Latini, 2009). A qualitative study of oncology specialists in one multidisciplinary prostate cancer clinic indicated that the physicians recognized the value of collectively sharing

information between patients and multiple specialists in that environment, yet still preferred one-on-one consultations with their patients (Bellardita et al., 2011).

According to Knight and Latini (2009), even though “a man’s goals and values are critical considerations in prostate cancer treatment, men need information about the treatments and their expected outcomes to fully understand or predict their own preferences” (p. 42). Parascandola, Hawkins, and Danis (2002) concurred that patients wanted information in spite of the fact that it might cause them distress. Though many sources of disease-specific information are available, patients generally show a preference for receiving this information directly from their physicians (Elwyn et al., 1999; Patel, Mirsadraee, & Emberton, 2003). When patients in two clinics were asked their preferences, they consistently valued the opportunity to gain full understanding of their disease and its treatments and to have a multidisciplinary review of their case above all other advantages of the multidisciplinary cancer clinic approach (Janjua, Lee, Studts, & Kloecker, 2010).

In the face of multiple treatment options for life-threatening disease, multidisciplinary prostate cancer clinics provide an optimal environment for shared decision making and consideration of patient preferences. The primary role of MPCC physicians is to educate patients, “setting the stage for the patients and their family to become an integral part of the decision-making process” (Basler, Jenkins, & Swanson, 2005, p. 55). By publishing patient expectations and creating formal physician agreements, MPCCs clearly communicate this commitment to patient centered care and shared decision making (Basler et al., 2005; Brolley, 2010; Gomella et al., 2010; Hudak et al., 2007; Reiling, 2009).

Economic factors. As the delivery of health care in the United States steadily evolves toward higher quality at a lower cost, Porter and Teisberg (2006) have contended that the most successful health delivery structures will be those organized to address a single disease and composed of medical specialists experienced in treating that disease. This premise springs from the authors' belief that providers will eventually be required to compete based on their patients' outcomes rather than the services they deliver, and that the best outcomes are the result of dedicated, multidisciplinary teams who are highly skilled in the treatment of a specific medical condition. The authors suggested that a move from physician-centric delivery to integrated practice units (IPUs) requires several changes. Among these are that care be provided by a team of clinicians rather than a single physician, that the full cycle of care be addressed, that staff work exclusively in a single medical condition, and that the IPU accept accountability for all aspects of patient management from diagnosis through long-term follow up. While not every multidisciplinary prostate cancer clinic meets all these criteria, the MPCC structure is closely aligned with the IPU design endorsed by Porter and Teisberg (2006).

The advantages that MPCCs bring to timely, appropriate, patient-centered treatment come at a higher initial cost than traditional care delivery. Case studies frequently cite economic constraints as a primary obstacle to formation and operation of these clinics (Grusenmeyer et al., 2006; Krasna, 2009; Reiling, 2009). This is particularly pronounced in private MPCCs where physicians practice independently and must be compensated for taking time away from their own practices (Reiling, 2009). However, case studies of existing programs have shown that increases in downstream revenue, heightened productivity of affiliated clinicians, and competitive advantage can make

MPCC operation not just feasible, but also economically desirable (Krasna, 2009; Litton et al., 2010).

Downstream revenue. The revenue models of multidisciplinary prostate cancer clinics are largely dependent on their affiliations and sources of funding. The Veterans Administration and military hospitals receive their funding from the U.S. government and provide necessary services to those who qualify as patients (Kaiseredu.org, n.d.). This is also true of closed systems such as Kaiser Permanente that provide both insurance products and medical care to their subscribers (Shapiro & Smith, 2003). By contrast, private providers and academic medical centers compete for those patients with higher insurance reimbursement while also treating a number of patients in government health plans such as Medicare or Medicaid. Thus, the capture of downstream revenue from patients who have a choice of where to have high margin procedures performed has potentially greater value to academic and private institutions than to those in closed systems.

Presbyterian Cancer Center in Charlotte, North Carolina has operated a MPCC since 2001. Like other community cancer centers, Presbyterian Cancer Center created a financial model in which the MPCC does not break even, but generates significant downstream revenue (Reiling, 2009). The organization estimated that each of the 80 patients it saw annually yielded between $15,000 and $20,000 in revenue to the hospital. This is in addition to physician revenues for all non-clinic activities. Intermountain Health Care's multidisciplinary cancer clinics are also affiliated with a hospital and specifically chose a financial model that was tied to increased downstream revenue rather than a positive margin on the clinics themselves (Kane & Parkinson, 2008). After 5 years

of operation, the organization's metrics showed that MPCC patients generated significantly higher downstream revenue than patients who did not attend the clinics.

Heightened productivity. Physician productivity is important to all MPCCs, regardless of their funding sources. Whether physicians are employed by a care delivery system, or contracted to participate by a clinic operator such as a hospital, lack of efficiency is costly in both dollars and morale. MPCCs often employ a mix of technologies to improve productivity. For example, two MPCCs located in San Antonio have used an automated method to predict which specialists a patient is likely to need during his visit to the clinic and to schedule those specific physicians (Basler et al., 2005). Another MPCC created a tracking database to manage patient information effectively, and also designated a specific nurse coordinator as the primary patient contact throughout treatment and follow up (Hudak et al., 2007).

Perhaps even more important than efficiencies within the MPCC are those that benefit affiliated physicians not practicing in the clinic. Surgeons at Walter Reed Medical Center reported that shifting the responsibility of discussing treatment options with patients to MPCC physicians made those providers not working in the clinic more productive (Hudak et al, 2007). Community physicians affiliated with Intermountain Health Care's multidisciplinary clinic also found that clinic visits saved the oncologist's time by educating the patient and providing a second opinion in a single visit (Litton et al., 2010.) An important element of patient management systems is prompt follow up with the patient's referring physician. This supports continuity of care and assures physicians that the cancer clinic does not intend for patients to sever their relationships with referring physicians (Litton et al., 2010).

Competitive advantage. Porter and Teisberg (2006) described how competition waged at the level of medical conditions has the greatest benefit, but is the least common type of competition in the current delivery of health care services. The structure of medical referrals within health plans and care delivery systems has historically made it difficult to determine if patients were being referred to the best resource to address their conditions. In those situations where physicians competed on both results and price, quality was shown to improve and costs to decrease.

Comprehensive quality metrics are essential to driving performance and demonstrating value in the marketplace (Porter & Teisberg, 2006). Lee (2010) proposed that establishing a valid performance measurement system could unleash peer pressure to drive best practices. Those organizations that are committed to the highest quality have also begun to make their quality results public through the internet and social media. The Cleveland Clinic was an early pioneer in this practice and a number of other organizations have since made similar commitments (Porter & Teisberg, 2006).

Some MPCCs have indicated that performance standards and quality metrics are an important element of their operational structure (Basler et al., 2005; Reiling, 2009). However, few have published these results. This type of disclosure represents an opportunity for MPCCs to gain referral advantage as consumers of health care increase their reliance on the internet and to increase reimbursement as providers begin to be compensated based on the value they deliver (Porter & Teisberg, 2006).

Patient satisfaction metrics may be even more valuable to competitive advantage than quality outcomes. While only a few multidisciplinary prostate cancer clinics have published their quality metrics, many more have highlighted their patient satisfaction

scores. When the Center for Prostate Disease Research at Walter Reed converted its conventional prostate program to a multidisciplinary clinic its leaders reported increased patient satisfaction which resulted in a large number of self-referrals (Hudak et al., 2007). At Intermountain Health Care's multidisciplinary cancer clinic in Salt Lake City, 98% of participating patients rated their overall experience as *excellent* (Litton et al., 2010). The MPCC at M.D. Anderson Cancer Center reported similar results in patient satisfaction and increased referrals (Brolley, 2010).

Section summary. Multidisciplinary prostate cancer clinics are well positioned to deliver excellent quality at a competitive price to highly satisfied patients. The significant level of shared decision making supported by the MPCC structure not only respects the ethical constructs of patient autonomy, but also gives patients a voice to choose simple, low cost treatments – or, in some cases, no treatment at all. As prostate cancer research evolves MPCCs may become an increasingly important source of clinical trial enrollment. Yet, despite indications that this care delivery model is highly effective and well-positioned to succeed in the new American health care environment, MPCCs remain a relative rarity in the United States.

Medical Service Leaders

Mountford and Webb (2009) grouped the many ways in which physicians lead into three categories: the institutional leader who stewards an organization with strategic thinking, the service leader who passionately accepts responsibility for a clinical service using deep medical knowledge, and the frontline leader who focuses on delivering high quality patient care using team-based quality improvement. Based on their research at the consulting firm McKinsey and Company, the authors proposed that medical leaders in

service leadership roles have an identity of passionate advocacy for that particular service with a feeling of responsibility for both clinical and financial performance, yet still retain a level of direct connection with patients. These leaders derive power from their clinical credibility with colleagues, coupled with their willingness to take risks and innovate. They are also able to balance detailed knowledge in their clinical area with strong strategic, financial and interpersonal skills. Mountford and Webb's (2009) service leader profile provides a basis for examining the attributes of physicians who lead integrated practice units (IPUs) in general, and multidisciplinary cancer clinics (MDCCs) in particular.

Case studies have addressed the importance of medical leadership in the formation and operation of MDCCs. Several of these studies emphasized the medical leader's crucial role in building a case for their clinic and recruiting physician support (Grusenmeyer et al., 2006; Hudak et al., 2007; Krasna, 2009; Litton et al., 2010; Reiling, 2009). Case studies of MDCCs also described the medical leader's responsibility for patient care quality, citing the use of teams to create clinical standards and the development of processes to enforce them (Grusenmeyer et al., 2006; Krasna, 2009; Reiling, 2009). Lee (2010) observed that the transition to patient-centered, multidisciplinary care requires physician leaders who articulate the organization's vision and values, build collaborative teams, organize for performance, improve processes and develop effective measurement systems.

Collectively, the actions and behaviors described by MDCC case studies and Lee's (2010) analysis capture many dimensions of the medical service leader as defined by Mountford and Webb (2009). However, they fall short in their lack of focus on the

leader's knowledge and skills on the one hand and the leader's identity on the other. This omission is consistent with Avolio's (2007) contention that much of the recent research regarding leadership has focused on leaders' behaviors without "taking into account the prior, current, and emerging context" (p. 25). Examining the medical service leader using a number of theoretical frameworks that complement one another and incorporate the essential elements of service leadership is a more robust approach. When considered together, skills-based leadership, full-range leadership and authentic leadership are three frameworks that accomplish this goal.

Skilled leaders. The physicians who lead their peers garner a large share of their credibility from their skills in the practice of medicine (Holmboe et al., 2003; Kusy et al., 1995; Mountford & Webb, 2009). Their followers' fundamental expectation of expertise makes the leaders' skills and the knowledge that drives them an important dimension of medical service leadership. In his early research of the correlation between executive performance and skills, Katz (1955) described the skills approach as one that is "based not on what good executives *are* (their innate traits and characteristics), but rather on what they *do* (the kinds of skills which they exhibit in carrying out their jobs effectively)" (p. 33). The author further observed that "the principal criterion for skillfulness must be effective action under varying conditions" (Katz, 1955, p. 34). Though they labeled them differently, Katz (1955), Mumford, Campion, and Morgeson (2007), and Senge (2006) each identified problem-solving, technical and social abilities as essential skills of the effective leader.

Leadership skills theory. Katz (1955) segmented the effective administrator's skills into three categories: conceptual skills that allow a systems view of the

organization and its external influences, technical skills that encompass knowledge, analytical ability and the use of those tools related to a discipline's procedures, and human skills that facilitate cooperation and communication within a work team. Mumford et al. (2007) broadened the prior research by considering leaders at various stages of their careers and expanding the leader's skill set to four factors: cognitive skills that include the abilities to learn and adapt, strategic skills from a systems approach to manage ambiguity and exert influence, business skills that include operational analysis and resources management, and interpersonal skills that involve the social abilities to influence others' activities and understand their reactions.

Senge (2006) also grouped what he called "the leader's new work" (p. 317) into skill genres that he named after three professional roles: *steward, designer* and *teacher*. The steward is able to build a shared vision from purpose and personal vision. The designer can translate vision and values into structures, strategies and policies. The teacher knows how to help others better understand their current reality and the systems that created them. The author proposed that this new work requires a new skill set: systems thinking, identifying and testing mental models, and building a shared vision (Senge, 1990).

The relationship between a leader's specific abilities and the scope of the leader's responsibilities is also a consistent theme in the skills-based approach to leadership. Katz (1955) proposed that executives at the top levels of their organizations had a greater need for conceptual skills, and a lesser need for technical skills, than those administrators at lower levels. Similarly, though human skills were found to be important at all levels the

author suggested that they became less important than conceptual skills as the executive's scope of organizational responsibility increased.

In their study of 1,000 managers, Mumford et al. (2007) validated that a leader's skills varied in type and amount according to organizational position. The researchers found that, at all managerial levels, cognitive and interpersonal skills were more critical than strategic and technical skills. However, business and strategic skills increased in importance at senior leadership levels.

Senge (2006) explored what he called the "ecology of leadership" (p. 319) by examining the skills required of line level, network level and executive level leaders. According to the author, executive leaders rely on network leaders to build a broad base to enable change and line leaders to implement strategic concepts. Network leaders look to line leaders to experiment with new ideas and to executives to spread the resulting local knowledge across an organization. Line leaders rely on network leaders to enable peer-level learning and executive leaders to remove organizational obstacles to change. All three of these positions require leaders to practice the skills of the steward, the designer and the teacher in order to effect organizational growth and change.

Based on the skills framework, effective leaders build their abilities in three broad categories: problem-solving skills, technical skills, and social skills. Mid-level leaders provide essential linkages within an organization and benefit from a balanced emphasis on all three of these skill sets. While the nature of social skills is generally consistent across many industries, technical and problem-solving skills are specific to each organizational discipline. Thus, it is instructive to apply this theoretical framework to a specific industry and leadership role.

Skills theory and the medical service leader. Within the leadership skills framework, a medical service leader is similar to a mid-level or network leader. This physician's scope of leadership falls between the front-line physician who leads a small clinical team and the institutional physician who leads an entire organization (Mountford & Webb, 2009). Based on the leadership skills framework, the medical services leader would be expected to need a broad range of conceptual, technical and human expertise. Research has validated that effective medical leaders, in a range of roles, require a combination of technical skills, people skills and conceptual skills (Batalden et al., 2003; Holmboe et al., 2003; McKenna, Gartland, & Pugno, 2004; Taylor, Taylor, & Stoller, 2008; Williams, 2001).

Consistent with Mumford et al.'s (2007) research emphasizing human skills across all leadership levels, McKenna et al. (2004) studied 110 medical leaders, educators, and students and found that interpersonal and communication skills were perceived to be the most important competency for effective physician leadership. In their study of 25 members in a similar cohort, Taylor et al. (2008) reported that participants ranked social skills among the four most important leadership success factors. In 1999 a survey of 108 physician executives showed that oral communication and interpersonal skills were a current priority for medical leaders, who indicated that these skills would grow in importance in the future (Williams, 2001). This empirical evidence, illustrating the importance of the physician leader's interpersonal and communication skills, supports Mountford and Webb's (2009) contention that the medical service leader requires fluent people development abilities.

In contrast to the broad category of human skills, Mountford and Webb (2009) described the medical service leader's most valuable technical skills as narrowly focused on quality assurance and evidence-based medicine in a specific clinical discipline. A study of 45 physicians, nurses and clinical staff determined that quality improvement skills and clinical credibility were two of the four most important characteristics of medical service leaders driving better cardiac care (Holmboe et al., 2003). At the institutional leader level, physician executives have also emphasized clinical benchmarking, quality assurance and total quality improvement as their highest priorities for increasing personal knowledge (Williams, 2001). Both academic physician leaders and aspiring leaders expressed similar views, ranking clinical expertise in the top half of the medical leader's critical competencies (McKenna et al., 2004; Taylor et al., 2008).

Research suggests that one of the medical leader's most important conceptual skills is a systems approach to problem solving and strategy development. Physician executives who participated in the study described by Williams (2001) rated systems thinking as one of the six most valuable characteristics of a leader, stressed the growing importance of this ability, and identified the need for additional training in this particular skill. Academic leaders and aspiring leaders rated systems thinking as a core medical leadership competency, ranking it seventh out of nine key abilities (McKenna et al., 2004.) Stoller's (2008) review of key medical leadership competencies also included problem-solving skills in the six competency domains that aspiring leaders must develop. Mountford and Webb (2009) suggested that strategic thinking skills were most critical at the institutional leader level, while acknowledging that medical service leaders required proficiency in strategy management. Consistent with Katz's (1955) management

competency model, studies suggest that effective medical service leaders require a strong emphasis on interpersonal, communication and clinical quality skills, and a lesser, but nonetheless important, emphasis on systems thinking and strategy.

Full range leaders. In response to dramatic changes over the last decade, there has been a widespread call for medical leaders who can lead the transformation of America's health care delivery system (Lee, 2010; McAlearny et al., 2005; Mountford & Webb, 2009; Porter & Teisberg, 2007). Bass (1999) posited that effective leaders practice a full range of behaviors, complementing transformational actions in which leaders "uplift the morale, motivation, and morals of their followers" (p. 9) with transactional behaviors that "cater to their followers' immediate self-interests" (p. 9). Research has shown that those leaders who utilize both transformational and transactional attributes, with a stronger emphasis on the former than the latter, are both effective for their organizations and satisfying to their followers (Bass, 1999).

Full range of leadership theory. Although Burns (1978) first introduced the dual concepts of transactional and transformational leadership, it was Bass (1985) who expanded the theory by adding the category of the *laissez-faire* leader and articulating six specific factors that described the full range of leadership. For transformational leaders, these comprised charismatic/inspiration in which leaders energize followers through purpose and vision and provide an ethical role model, intellectual stimulation in which leaders encourage followers to question current methods and find new ways to solve problems, and individualized consideration in which leaders understand the needs of individual followers and help them to realize their full potential. For transactional leaders, these factors included the positive factor known as contingent reward in which followers

have prior knowledge of what they need to do to be rewarded, and management-by-exception in which leaders monitor followers but take no action unless a problem arises. The negative factor *laissez-faire* was characterized as passive avoidance in which no action is taken, even when a problem occurs (Avolio, Bass, & Jung, 1999).

A second model of transformational leadership developed by Kouzes and Posner (2007) during the 1980s was based on a qualitative study of over 1,000 leaders. The researchers' model differed from the full range of leadership theory in its focus on exemplary practices rather than both positive and negative behaviors. These five practices included modeling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart. To measure the degree to which leaders utilized these practices, Posner and Kouzes (1988) introduced an assessment tool called the Leadership Practices Inventory (LPI). In a subsequent study Fields and Herold (1997) validated that the LPI instrument could be reliably used to measure a leader's transformational and transactional behaviors. The research showed that the four practices suggestive of transformational leadership were challenging the process, inspiring a shared vision, encouraging the heart, and modeling the way; and that the three processes indicative of transactional leadership were encouraging the heart, modeling the way, and enabling others to act.

While the skills theory of leadership is applied differently depending on a leader's organizational level and role, the full range of leadership model is not. Bass (1985) developed the first version of an assessment tool known as the Multifactor Leadership Questionnaire (MLQ) to measure a leader's transformational, transactional and *laissez-faire* behaviors. Results of the MLQ administered to leaders of small groups, large

organizations and far-reaching populations indicated that the model is equally applicable in all situations and is not language or culture sensitive (Bass, 1999). The *Five Practices of Exemplary Leadership* identified by Kouzes & Posner (2007) are also consistent across a wide range of organizations and cultures, as demonstrated by a short survey the authors administered to over 75,000 individuals worldwide.

Full range theory and the medical service leader. Bujak (2005) suggested that transformational physician leaders are uniquely able to balance multiple strategies with a compelling, positive vision for the future. Lee (2010) concurred that vision and a multi-faceted strategy are important to physician leaders, while stressing that these factors need to be balanced by positive transactional behaviors such as the creation of performance metrics and productive competition. Multiple studies have examined the transformational and transactional behaviors employed by medical leaders and their impact on follower satisfaction and performance.

A quantitative study by Xirasager, Samuels, and Stoskopf (2005) used the Multifactor Leadership Questionnaire (MLQ) developed by Bass (1985) to correlate physicians' full range of leadership styles with positive medical outcomes in several community clinic settings. Study participants who scored high on their use of a transformational leadership approach also scored high on goal attainment. Transactional leadership preferences had a lower, but positive, correlation with reaching clinical goals. Study results showed that the leaders with high transformational qualities also utilized the transactional style to build trust and a perception of fairness. A similar study conducted by Smartt (2010) replicated these results using a population of 43 physician leaders in private practice and academic medical positions.

Menaker and Bahn (2008) administered the MLQ instrument to 314 physicians in their study of nine physician leaders at the Mayo Clinic. The researchers compared followers' satisfaction with their physician leaders and the frequency with which those leaders practiced transformational behaviors. The study's results showed a strong correlation between the frequent use of transformational leadership attributes and followers' satisfaction with their leader. Of the transformational attributes studied, instilling pride and respect while transcending self-interest and spending time developing others through teaching and coaching were most highly valued by followers. These were also the attributes least frequently displayed by the nine leaders.

Kusy et al. (1995) surveyed 94 physician executives from across the United States using the Leadership Practices Inventory (LPI) to determine their self-reported use of exemplary leadership behaviors. Participant responses indicated that more advanced age and a longer time in practice contributed to greater use of modeling the way and inspiring shared vision, both of which are considered transformational behaviors. Those medical leaders in private practice were more inclined to challenge existing processes than their academic peers, showing a higher level of this transformational behavior. In general, the study population exhibited higher use of transformational and positive transactional behaviors than the norm.

Both Bujak (2005) and Lee (2010) asserted that physicians leading change need to focus on building a critical mass rather than consensus, a strategy that Kotter (1996) referred to as *creating a guiding coalition*. By using individualized consideration, a transformational behavior, the medical leader is able to understand the needs and support the growth of each guiding coalition member. By also employing contingent reward, a

positive transactional behavior, the medical leader can address coalition members' individual self-interests. Given the critical role the medical service leader plays in recruiting the support of other physicians, this balance of transformational and transactional behaviors appears to be particularly important in the IPU environment.

Authentic leaders. Souba (2011) proposed that authenticity is a fundamental pillar of a medical leadership framework that safeguards the ethics of medicine. In such a framework, "*being* a leader" is the "basis for what leaders know, have, and do" (Souba, 2011, p. 2). This distinction of who a leader is, as compared to what that leader knows or does, is a core element of authentic leadership theory. Avolio and Gardner (2005) characterized authentic leaders as those with a deeply developed sense of self to anchor them and conscious beliefs and values that guide their actions and words. Shamir and Eilam (2005) similarly emphasized that authentic leaders are true to themselves, operating from a set of values and convictions that they have personalized through their life experiences. George (2007) further described authentic leaders as individuals with solid values and an understanding of self-purpose who lead with their hearts.

Authentic leadership theory. Although there is significant consensus on the characteristics of authentic leaders, the framework of authentic leadership has continued to evolve since it emerged as a distinct leadership theory early in the 21st century. Authentic leadership was initially described by Bass and Steidlmeier (1999) in the context of transformational leadership as a response to criticism that transformational leadership theory was not grounded in morality. The authors asserted that authentic transformational leadership must have moral values at its core. Within a short time, both scholars and practitioners began to identify authentic leadership as a separate theoretical

framework. In their discussion of the theory's evolution, Avolio and Gardner (2005) further differentiated authentic leadership as not just a separate theoretical construct, but a root construct for other positive leadership theories including servant, charismatic and transformational.

George (2003) used his own leadership experience, coupled with interviews of other leaders, to publish a model of successful leadership. Shortly thereafter, The Gallup Leadership Institute's 2004 summit on authentic leadership development culminated in a special issue of *The Leadership Quarterly* featuring a number of peer-reviewed articles presenting different theoretical perspectives (Avolio & Gardner, 2005). In their development of a leadership assessment tool, Walumbwa et al. (2008) synthesized several concepts and studies into a cohesive definition of authentic leadership:

> A pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development (p. 94).

Walumbwa et al.'s (2008) definition reiterated four core components of authentic leadership that were initially incorporated in the model proposed by Ilies, Morgeson, and Nahrgang (2005) and subsequently expanded by Avolio and Gardner (2005). The first component is self-awareness, which reflects leaders' abilities to understand how others view their strengths, weaknesses, emotions and personality, and includes the leaders' willingness to seek and consider feedback to improve their interactions with others. The second component is internalized moral perspective in which leaders' decisions and actions are consistent with their core beliefs. The third component is balanced processing, which refers to leaders' commitment to seek out and listen to views that challenge their

own and to consider those views before reaching conclusions. The fourth component is relational transparency in which leaders exhibit candor and are willing to admit their mistakes. In Walumbwa et al.'s (2008) study of 436 leaders in two countries the researchers found that authentic leadership as described by these four factors could be reliably measured using their ALQ instrument, and that authentic leadership was distinct from the ethical and transformational leadership concepts previously described.

Researchers often view authentic leadership as a dynamic process, with leaders' authenticity influenced by their life events (Avolio & Gardner, 2005; George, 2007; Shamir & Eilam, 2005; Walumbwa et al., 2008). In their analysis of leaders' written biographies, Shamir, Dayan-Horesh and Adler (2005) proposed that the organization of life experiences into a life-story allows a leader to create a self-concept that justifies the role he or she plays as a leader. Shamir and Eilam (2005) asserted that the positive attributes of authentic leaders originate from those individuals' self-concepts rather than through development of behavioral styles or skills. Klenke's (2007) model of the antecedents to authentic leadership furthered the idea that self-concept is a core element of authentic leadership development.

Authenticity and the medical service leader. In Souba's (2011) analysis of authenticity as a pillar of health care leadership, the author called on medical leaders to live and act genuinely, rejecting the mental models that compromise professional ethics and exhibiting the courage to "take a stand for something larger than themselves" (p. 6). Souba (2011) and others have explored individual elements of authentic leadership as they relate to health care and medicine. However, in light of the construct's recent introduction, there is little empirical research that specifically addresses authentic

leadership theory's relevance to medical leaders. Deconstructing the theory and individually addressing each component using extant research provides additional perspectives regarding how the authentic leadership construct applies to medical service leaders.

Wong and Cummings (2009) used LPI assessment results from 147 clinicians and 188 administrative employees in 17 Canadian cancer treatment facilities to model whether behaviors associated with authentic leadership contributed to open communication, high performance and low burnout amongst followers. Though results for non-clinicians showed a correlation between a leader's balanced processing and lower follower burnout and a correlation between the leader's relational transparency and increased follower trust, these relationships were not found in clinical participants. The study's results further indicated that none of the four core elements of authentic leadership improved communication, performance or burnout for physicians, nurses and other clinical staff.

In contrast, case studies of multidisciplinary cancer clinics (MDCCs) have indicated that the attributes of balanced processing are essential when physicians lead other physicians. A number of studies described the importance of a physician champion who could create a dialogue with participants to establish the MDCC's importance, collaboratively develop patient criteria and care plans, and design an ongoing communication process to improve outcomes and satisfaction (Hudak et al., 2007; Krasna, 2009; Litton et al., 2010; Reiling, 2009). Balanced processing behaviors by the MDCC leader appear to be particularly significant in the community cancer center setting where independent physicians are not compelled to participate in clinics.

The authentic leader characteristic known as self-awareness appears in broader leadership research as one element of emotional intelligence. Goleman (1998) described self-awareness as the foundation of emotional competence and asserted that nearly 90% of a leader's success could be attributed to emotional competence. Gardner et al. (2005) proposed that this ability to recognize emotions and how they affect others is a fundamental construct of authentic leadership. In two studies of physician leaders' emotional intelligence, researchers found that participants' levels of self-awareness were lower than other emotional competencies, though within an acceptable range (Deegan, 2002; Kaiser, 2009). Deegan (2002) also reported that physician leaders rated themselves higher in self-awareness competencies than did their peers and direct reports. Both Deegan (2002) and Kaiser (2009) suggested that physicians be provided with opportunities to develop stronger emotional competencies as they transition into leadership positions.

A physician leader's internalized moral perspective is shaped by the values and ethics that accompany medical training and practice: justice, beneficence, nonmaleficence, and respect for patient autonomy (Souba, 2011). They are also formed by "the four ontological pillars of leadership – awareness, commitment, integrity, and authenticity" (Souba, 2011, p. 1). In McKenna et al.'s (2004) study of medical leaders' competencies, leaders ranked professional ethics and social responsibility as the second most important of nine desirable attributes. Souba, Mauger, and Day (2007) similarly found that department of surgery chairs and medical school deans ranked integrity and trust among the three most essential personal values for effective medical leaders. While beliefs and behaviors that respect medical ethics are a clear expectation, established

medical leaders also view personal commitment to the broader organization's success as a core value that influences their decisions and actions (Holmboe et al., 2003; Taylor et al., 2008). This value echoes Mountford and Webb's (2009) profile of the medical service leader's identity, which emphasized the leader's passionate advocacy for his or her own service line balanced by the needs and contexts of the larger organization.

Crucible experiences are a foundational element of authentic leadership, and learning from role models is one significant experience that helps to form the authentic leader's life story (Shamir & Eilam, 2005). George, Sims, McLean, and Mayer (2007) described the life journey of Novartis Chairman Daniel Vasella who studied to be a physician after multiple childhood experiences with personal and family illness. Vasella determined that he could impact more people by joining the pharmaceutical industry than by practicing medicine and ultimately built Novartis into a global organization. He credited the physician role models of his youth for his ability to build a culture of compassion and competence.

In a study of 25 established and aspiring leaders at the Cleveland Clinic, Taylor et al. (2008) also found that physicians were significantly influenced by role models. Many of these medical leaders felt that short, focused interactions had been more impactful than long-term, formal mentoring. Although role models and mentors are just one type of influential experience that shapes a leader's life story, the researchers suggested that physicians' highly specialized career paths, time pressures and goal orientation caused them to place a particularly high value on such relationships.

There is a shortage of research regarding the application of authentic leadership theory to physician leaders and a notable absence of studies using the ALQ assessment

instrument developed by Walumbwa et al. (2008). However, related studies indicate that the dimensions of authenticity are particularly applicable to medical leadership. If authentic leadership is a root construct for transformational leadership as Avolio and Gardner (2005) proposed, then this theory may be seen as a foundation for the full range of leadership behaviors associated with effective medical leaders.

Section summary. The medical service leader's role incorporates three dimensions: what the leader knows, how the leader behaves, and who the leader is. The skills approach to leadership suggests that the medical service leader needs a strong mix of interpersonal, communication, clinical quality and strategic skills. The full range of leadership theory emphasizes the medical leader's dual use of transformational behaviors to drive long term change, and transactional behaviors to address followers' short term self-interests. The authentic leadership construct describes the medical service leader as an individual who exhibits a strong commitment to values and ethics shaped by life experiences who is able to balance the needs of the overall organization with those of individual followers. Collectively, these constructs describe the essential attributes of a medical service leader and create a basis for exploring the motivational antecedents to medical leadership.

Leader Motivation

The question of how workplace leaders motivate their followers is well researched and a number of new theories have been explored in the last three decades. McGregor's (1985) theory X and Y posited that a manager who assumed employees disliked their work was constrained by that belief, while one who believed it was natural for employees to be interested in their work created the opportunity for innovation to

thrive and the organization to succeed. Deci et al. (1989) applied self-determination theory to the workplace by focusing on "the degree to which managers' interpersonal orientations tend to support subordinates' self-determination" (p. 580) in the contexts of initiative and choice. Locke and Latham's (2002) goal-setting theory "focused on the relationship between conscious performance goals and level of task performance" (p. 705), finding that specific, difficult goals led to higher performance levels than asking people to "do their best" (p. 706). In comparison to the wide research regarding follower motivation, the question of what motivates individuals to become and remain leaders has received relatively little scrutiny.

Chan and Drasgow (2001) defined motivation to lead (MTL) as a "construct that affects a leader's or leader-to-be's decisions to assume leadership training, roles, and responsibilities and that affect his or her intensity of effort at leading and persistence as a leader" (p. 482). To date, theories of leader motivation have primarily focused on four motivational factors: power, achievement, affiliation, and self-efficacy. McClelland's (1975) leadership motive pattern described leaders' tendencies to have a high power motivation and a low affiliation motivation. Berman and Miner's (1985) extension of role-motivation theory from mid-level managers to organizational leaders characterized power and achievement motivations as valid predictors of leadership attainment. More recently, Chan and Drasgow's (2001) MTL construct identified achievement and self-efficacy as motivators for some leaders but not others. Subsequent research has tested and expanded these three theories. However, a review of the literature indicates that these theoretical constructs have not been applied to medical leaders.

Three independent studies of physician executives yield some insight into the variability of how medical leaders view their own motivations to lead. Singleton (1994) studied 170 members of the American College of Physician Executives using the DiSC assessment tool to create behavioral profiles that reflected sources of motivation. Although the results were not highly concentrated in one behavioral category, they indicated that stable, predictable accomplishments and a controlled environment were motivating factors. McKenna et al.'s (2004) survey of 110 medical leaders, physician educators and medical students employed the PIAV instrument to evaluate the importance of six motivational variables. The results of their study showed that participants ranked pursuit of knowledge and service to others significantly higher than economic results and power, while tradition and aesthetics ranked the lowest. Snell et al. (2011) used interviews to study 51 Canadian physicians' motivations to engage in health care leadership activities. These leaders related a wide variety of motivations: the need to make a difference, the desire to innovate, the influence of early childhood experiences, peer recognition, social camaraderie, and the fun that results from being deeply engaged in an activity.

Formal theories, as well as specific studies, suggest there is a broad variation in physicians' motivations to lead. This observation is consistent with Chan, Rounds, and Drasgow's (2000) study showing that motivation to lead is independent from vocational interests, and their suggestion that work role preferences may be a better indicator of leader motivations. Rather than narrowly focusing on the four types of motivation expressed in the formal MTL constructs, this literature review approaches leader motivation in the context of the three leadership theories that collectively describe

medical service leaders. As detailed in the previous section, these constructs are the skills approach to leadership, full range of leadership theory, and authentic leadership theory.

The skilled leader's motivations. The skills approach to leadership recognizes the importance of balancing a range of skills and knowledge: technical, conceptual and interpersonal (Katz, 1955; Mumford et al., 2007; Senge, 2006). To support this ongoing acquisition of knowledge, the skilled leader's motivations are expected to include competence and the achievement need for self-mastery (Mumford, Zaccaro, Harding, Jacobs, & Fleishman, 2000). Both of these needs are associated with the concept of intrinsic motivation, which leads individuals to take actions purely for the deep sense of enjoyment the activity provides rather than for an external reason or reward (Deci & Ryan, 1985).

Competence needs. Competence describes a person's psychological need to interact effectively with the surrounding environment and to use personal skills to master challenges (Deci & Ryan, 1985). Feedback on performance is an integral element of experiencing challenge. That feedback can result from whether or not a task is completed or from a comparison of task performance with past results.

Csikszentmihalyi (2003) described the experience that results from the optimal balance of challenge and skill as *flow*. In his discussion of leadership and flow, the author observed that people who reach the position of business leadership are "so determined to learn, to change, and to shape their experiences that whatever the situation in which they find themselves, they will find a way to increase the complexity of their lives" (Csikszentmihalyi, 2003, p. 81). The author's research identified three sources of leadership motivation leading to flow: the wish to do one's best, the calling to help

people, and the desire to build a better world. He stressed that leaders must not only create flow for themselves, but also must nurture a work environment that enables flow for others.

In their longitudinal study of leadership's motivational roots, Gottfried, Fleming, and Gottfried (2001) found a significant positive correlation between intrinsic motivation to learn in childhood and adolescence and enjoyment of leadership in adulthood. The study's sample was drawn from a database of 106 participants in the Fullerton Longitudinal Study, using measures of academic intrinsic motivation at ages 9, 10, 13, 16, and 17 years, and measures of motivation to lead at age 29 years. The researchers concluded that development of academic intrinsic motivation between 9 years and 17 years of age created a foundation for the desire to lead during adulthood, regardless of external consequences. This study was unique in its focus on motivation and leadership in one population over a period of 20 years.

Achievement needs. While competence is a psychological need, achievement is a social need. Mastery goals and performance goals both arise from the achievement need, but mastery goals create positive feelings and behaviors while performance goals tend to create unproductive feelings and behaviors (Dweck, 1999). Mastery is the "seeking of challenging tasks and the maintenance of effective striving under failure" (Dweck & Leggett, 1988, p. 256). Performance differs from mastery in its focus on proving competence and outperforming others.

The impact of a person's need for achievement appears to vary according to the type of leadership role that individual plays. McClelland (1965) performed a longitudinal study of 55 college graduates to determine whether those with a high need for

achievement were more likely to become entrepreneurs than those with low achievement needs. Results showed that 83% of the individuals with high achievement needs were in entrepreneurial positions 10 to 14 years later, while 79% of those who exhibited low achievement needs were later found to be working in non-entrepreneurial positions. The high achievement motive of the entrepreneurs was related to that role's ability to provide the individual with "more of the achievement satisfactions he seeks" (McClelland, 1965, p. 390).

In a study of 237 technical and non-technical managers, McClelland and Boyatzis (1982) found that high achievement needs were associated with future promotion to lower level, non-technical management positions but not to more senior positions. In addition, there was no correlation between technical managers' achievement needs and those individuals' attainment of management positions. The difference between the achievement need of the non-technical and technical managers was attributed to the latter being promoted "for technical competencies, among which was the ability to explain what they know" (McClelland & Boyatzis, 1982, p. 742) rather than for their leadership qualities.

Senge (2006) explored leadership and personal mastery within learning organizations. He described a work environment that encourages mastery as one where people are collectively committed to truth telling, challenging the status quo and visioning the future. The author proposed that people must be given the freedom to choose whether to participate in personal development programs and that the leader's level of demonstrated personal mastery is the most powerful tool to encourage that valuable trait in others.

Although the leader's personal mastery motive may be influential in that individual's organization, it does not necessarily predict who will become a leader. When Burke and DePoy (1991) researched mastery and leadership in ten occupational therapy clinicians they found no significant relationship between the two factors. The researchers observed that mastery occurs in the private domain, between a patient and a clinician, while leadership occurs in the public domain. Thus, "leaders are not necessarily master clinicians or excellent practitioners. Conversely, master clinicians and excellent practitioners are not necessarily leaders" (Burke & DePoy, 1991, p. 1031).

Boyatzis (1993) suggested that bridging the gap between skills and leadership requires an additional element: consciously choosing to be a leader. He further asserted that leaders could be more effective if they regularly chose to lead by employing the competencies they demonstrated at other points in their lives. According to the author, leaders fall into three modes of development: performance, which emphasizes job mastery; learning, which focuses on expanding experiences to generate greater variety or novelty; and development, which seeks to fulfill a higher purpose or calling. Boyatzis (1993) recommended that those leaders in the performance mode, with an achievement motive, can best develop their leadership skills through a specific focus on achieving greater success for their organizations.

The full range leader's motivations. The full range of leadership theory identifies three categories of leader behaviors – transformational, transactional, and *laissez-faire* – and specifies that the most effective leaders practice a mix of transformational and transactional behaviors (Bass, 1999). The full-range leader's self-efficacy, a cognitive motivation, affects both transformational and transactional behaviors

(Hannah, Avolio, Walumbwa, & Chan, 2012; Romano, 2008). It is also closely related to the leader's goal-setting motivations (Locke & Latham 2002). For the transformational leader the charismatic dimension has been linked to a high power need coupled with a low need for affiliation (De Hoogh et al., 2005; McClelland & Boyatzis, 1982). The transactional leader's use of extrinsic rewards, compared to the transformational leader's focus on intrinsic rewards, also suggests that these motivations are relevant to the study of full-range of leadership behaviors (Barbuto, 2005).

Self-efficacy. According to Bandura (1989), an individual's efficacy beliefs result from "a complex process of self-persuasion that relies on cognitive processing of diverse sources of efficacy information" (p. 1179). These sources include prior experiences executing a particular behavior, observing others executing that behavior, and hearing from others that one has certain abilities. Thus, self-efficacy is emergent and can be improved through new experiences and relationships. Bandura (1989) observed that personal achievement and well-being require positive self-efficacy in light of the impediments, failures and inequities that comprise human social reality. The author stressed that robust self-efficacy allows the individual to quickly recover from self-doubt and is essential to the perseverance needed to succeed.

Chan and Drasgow (2001) proposed a theoretical framework for leader motivation to lead based on the hypothesis that leadership self-efficacy is a direct antecedent to motivation to lead (MTL). In their quantitative study of 2,161 participants the researchers confirmed that self-efficacy was an antecedent to MTL in those who liked to lead and saw themselves as leaders, as well as those who were motivated to lead through a sense of social duty. However, self-efficacy was not related to MTL in those individuals who

led because they were agreeable and valued harmony but did not expect rewards or privileges. The researchers concluded that this finding was significant to the study of leadership since it demonstrated MTL is "a dynamic construct that is partially changeable through social-learning processes and experience" (Chan & Drasgow, 2001, p. 496).

Chan and Drasgow's (2001) MTL construct was developed through empirical research of student and military populations. Subsequent studies validated the construct in additional military and student populations, as well as a manufacturing setting (Amit, Lisak, Popper, & Gal, 2007; Hendricks & Payne, 2007; Kessler, Radosevich, Cho, & Kim, 2008). Romano's (2008) study of 48 management trainees, in which the researchers sought to refine Chan and Drasgow's (2001) model, found that self-efficacy predicted an individual's motivation to use transformational leadership behaviors.

Hannah, Avolio, Walumbwa, and Chan (2012) further developed Chan & Drasgow's (2001) MTL construct by creating a measure that they called leader self and means efficacy (LSME). Using a sample of 200 junior military officers, the researchers confirmed that affective-identity leaders were motivated by self-efficacy. They further positively correlated high LSME with transformational leadership behaviors and, to a lesser degree, the contingent reward behaviors of transactional leaders.

Goal-setting. Goal-setting is a cognitive motivation and is based on the premise that conscious goals affect behavior (Locke & Latham, 2002). Goals are able to act as motivators because humans are capable of forethought, which allows individuals to cognitively envision a future state in the present and act upon it (Bandura, 1989). According to Locke and Latham (2002), there are four dimensions of goals that affect individual performance. First, goals direct cognitive and behavioral energy toward

relevant activities and away from irrelevant activities. Second, goals energize activity and higher goals produce greater effort than lower goals do. Third, goals affect the time spent on activities, with difficult goals leading to a more intense or more prolonged effort. Fourth, goals lead to a complex interaction of knowledge, strategy, cognition and motivation.

Goal-setting and self-efficacy interact in several ways (Locke & Latham, 2002). Individuals who set high goals for themselves and pursue them with great persistence tend to display correspondingly strong levels of self-efficacy (Bandura, 1989). When goals are assigned to them, those with high self-efficacy tend to show stronger goal commitment, develop stronger strategies to achieve the goals and are more responsive to feedback than individuals with low self-efficacy. When high goals lead to high performance and that performance is rewarded, the resulting self-efficacy supports setting even higher goals for the future (Latham & Pinder, 2005).

An individual's level of goal acceptance affects motivation, and consequently behavior. Goal internalization, which occurs when an individual's actions are consistent with personal values, is one of five factors measured by the Motivation Sources Inventory (MSI). Barbuto (2005) hypothesized that the degree to which a leader internalizes goals is positively related to that leader's display of transformational leadership behaviors. To test this hypothesis the researcher employed the MSI with 186 leaders who also rated their own use of transformational and transactional behaviors. The study results showed a significant correlation between a leader's internalized goal motivation and the extent to which that leader employed a transformational behavior known as intellectual stimulation (Barbuto, 2005). The researcher concluded that the correlations identified by the study

could be used as motivation profiling for specific leadership traits desired by organizations but showed limited relevance in predicting overall leadership styles.

Intrinsic and extrinsic motivation. Barbuto (2005) described intrinsic motivation as an internal motivation that "embodies the person and his or her emotions, encompassing fun, trust, and self-worth, all of which are derived from internal influences" (p. 31), and described extrinsic motivation as an external process resulting from the person's surroundings in which the person is influenced by rewards, prestige and status. Self-determination theory further clarifies the role of autonomy in extrinsic motivation. When the purpose of an extrinsic event is to control behavior an individual's desire for autonomy is undermined and intrinsic motivation decreases. When the purpose of an extrinsic event is to inform and increase an individual's sense of self competence intrinsic motivation increases. An individual's perception of the degree to which an external event's primary purpose is either control or information determines whether that event decreases, or increases, that person's intrinsic motivation (Deci & Ryan, 2008).

In Barbuto's (2005) motivation analysis of 186 leaders the MLQ assessment was provided to those leaders as well as 759 of their followers. This study showed a significant correlation between leaders' intrinsic motivations and their perceptions of their own transformational behaviors. The leaders who were intrinsically motivated also were perceived by their direct reports to use inspirational motivation behaviors. However, these followers perceived intrinsically motivated leaders to be more transactional than the leaders' self-perceptions. Those leaders who were extrinsically motivated perceived themselves to be transactional, utilizing management by exception, passive management and contingent rewards, as did their direct reports. Barbuto (2005) concluded that

intrinsic and extrinsic motivations were antecedents to full range leadership behaviors, but advised that the small effect indicated this was only one of several variables.

Power. Raven (2008) described social power as the potential for one person to influence another to bring about change using one or more bases of power: coercion, expertise, informational, legitimate, referent, and reward. The author noted that selecting the basis of power to use in a particular situation is often a clear choice of which resource will work best. However, power strategies may also be influenced by the motives that determine leadership behavior. For example, a need for affiliation might lead to the use of referent or reward power while a strong power need could make legitimate or coercive power more desirable (Raven, 2008).

The leadership motive pattern (LMP) is a personality construct in which leaders are motivated by a pattern of needs which is high in power, low in affiliation and high in self-discipline (McClelland & Boyatzis, 1982). In a longitudinal study of technical and non-technical managers McClelland and Boyatzis (1982) found that a strong LMP accurately predicted managerial promotion after eight and sixteen years for non-technical participants. However, the LMP for technical managers did not positively or negatively correlate with managerial advancement.

De Hoogh et al. (2005) studied 73 leaders of for-profit and not-for-profit organizations to determine the relationship between charismatic leadership and leader motives. The study results showed a positive correlation between charismatic leader behaviors and power motivations. Leaders with high power motivation were seen to be somewhat more charismatic in not-for-profit settings than in for-profit companies. House and Aditya (1997) proposed that “since charismatic leaders advocate change and, thus,

challenge the status quo, they are likely to be strongly resisted" (p. 416); therefore they require the motivation to assertively influence others.

The authentic leader's motivations. Authentic leadership theory recognizes the influence of life events on the leader's values, and the high congruence between those values and the leader's actions (Avolio & Gardner, 2005; George, 2007; Shamir & Eilam, 2005). Avolio and Chan (2008) proposed an authentic leadership development model that emphasized the importance of relatedness, a psychological need, and self-regulation, a cognition motivation. Highlighting the growing realization that emotions are important to the understanding of leadership, Avolio and Gardner (2005) recognized the dual influence of cognitions and positive emotions in the formation of authentic leaders. Relatedness, self-regulation and emotion, three internal sources of motivation, are balanced by the external experiences that shape the authentic leader's life story which Bennis and Thomas (2002) referred to as crucible experiences.

External experiences. An unplanned, intense, defining experience that transforms an individual's values and assumptions is known as a *crucible* (Bennis & Thomas, 2002). The crucible experience is part of a leader's evolving life-story, which Shamir and Eilam (2005) called "a major element in the development of authentic leaders" (p. 395). The authors asserted that the positive attributes of authentic leaders originate from those individuals' self-concepts, which are developed through construction of their own life-stories rather than through development of behavioral styles or skills.

While a crucible experience is not a discrete motivator, it is an important element of motivation because of its significant impact on personal values. An individual's values "influence behavior because they are normative standards used to judge and choose

among alternative behaviors" (Latham & Pinder, 2005, p. 491). When Bennis and Thomas (2002) studied 43 leaders who were either born before 1925 or after 1970, those leaders consistently described a crucible experience that had shaped their values. Some of the leaders' experiences were negative, encompassing prejudice, illness or violence. Others crucibles were high expectations from mentors or family that drove the individuals to emerge as leaders.

Relatedness. All people have the psychological need to create and maintain relationships (Baumeister & Leary, 1995). The first form of relatedness, an exchange relationship, is essentially a business arrangement for mutual gain; the second form, a communal relationship, is one in which both parties are committed to each other's welfare and attend to their needs without the expectation of reciprocity (Clark, Mills, & Powell, 1986). Individuals differ in the number of relationships required to satisfy their relatedness need and the context of those relationships (Rogers & Holloway, 1993).

Relatedness is a key variable in Fiedler's (1967) contingency theory of leadership, which addresses the degree to which leaders are driven to develop workplace relationships with their followers. This theory suggests that individuals may be motivated by both relationships and tasks, and that their suitability to lead in certain situations is affected by these motivations. Specifically, Fiedler (1967) described those with a high need for relatedness as well-suited to lead organizational environments where the leader had limited position power and where tasks were either structured or somewhat unstructured. Conversely, individuals with a low relatedness need were better suited to lead in situations where tasks were highly structured and position power was high or where tasks were highly unstructured and position power was low (Fiedler, 1967).

While Fiedler (1967) focused on a leader's relatedness in the context of his or her followers, Rogers and Holloway (1993) explored workplace relationships between professional equals by contrasting collegiality with professional intimacy. The authors described professional collegiality as a relationship between professionals within or amongst disciplines characterized by sharing, collaboration, mutual support, flexibility and compassion. Professional intimacy also offered these benefits, but differed in that it provided a stronger emotional bond with a greater degree of self-disclosure than the collegial relationship (Rogers & Holloway, 1993). Self-disclosure plays an important role in peer-to-peer and leader-follower relationships and is considered an essential element of relational transparency, one of the four components of authentic leadership (Gardner et al., 2005).

***Self-regulation*.** The cyclical process of self-regulation is composed of three steps: self-observation in which realistic goals are set and progress toward them is evaluated, the judgmental process in which personal standards and comparisons with others are used to evaluate self-behavior, and self-reactions in which positive incentives motivate further action and negative reactions prevent it (Bandura, 1991). Bandura (1989) observed that "the prospects of healthy survival would be bleak if people had to rely solely on negative feedback to develop competencies" (p. 1181). Thus, the self-regulation system must combine proactive guidance with negative feedback in order to avoid unfortunate consequences.

In their exploration of motivation to lead Kark and Van Dijk (2007) utilized the theory of regulatory focus which asserts that individuals have two systems of self-regulation: promotion which is focused on achieving rewards, and prevention which is

focused on avoiding punishments. The researchers' conceptual framework proposed that leaders with a promotion focus would be internally motivated, leading for the pleasure it brings. Conversely, leaders with a prevention focus would be externally motivated and would lead from a sense of duty or obligation. Kark and Van Dijk (2007) positioned this framework as an antecedent to Chan and Drasgow's (2001) MTL construct, proposing that regulatory focus is a fundamental motivational mechanism while MTL is a higher-level motivation.

Ilies et al. (2005) addressed the potential conflict between authentic leadership in which the leader acts in accordance with personal beliefs and values, and self-regulation in which the individual actively monitors the situational appropriateness of behaviors and controls them. According to the authors, self-regulation that is highly other-directed emphasizes acting deceptively and is thus incompatible with authentic leadership. In contrast, leaders who use self-regulation that is low in other-directedness are "effective in conveying their authentic self to their followers and in projecting their own values and vision onto the followers" (Ilies et al., 2005). Authentic leaders not only demonstrate self-regulation, but also use it as a means of self-discovery to develop and refine their leadership in the context of specific situations (Avolio & Chan, 2008; Gardner et al., 2005).

***Positive emotions*.** Theorists differ regarding the role of cognition over biology in initiating the human emotional response. Panksepp (1994) proposed that some negative emotions such as fear and anger originate from a biological source, while some positive emotions arise from cultural context, social modeling and personal experience. However, most recent studies of emotion's impact in the workplace have focused on cognition or

organizational context, and negative or positive emotions, rather than biological origins (Brief & Weiss, 2002; Mowday & Sutton, 1993).

Several studies have correlated leaders' displays of positive emotions with their followers' perceptions that those leaders are effective (Bono & Ilies, 2006; Johnson, 2008). In a series of four studies, Bono and Ilies (2006) consistently found that leaders who expressed positive emotions were perceived as more effective by their followers than those who did not. Johnson (2008) also found a connection between the degree to which leaders exhibit positive emotions and the emotions of their followers. In the study's results, the researcher further identified a correlation between the degree of the follower's susceptibility to contagious emotion and the amount of influence the leader's positive emotion created.

Michie and Gooty (2005) segmented positive emotions into two categories: those that are self-focused, such as pride and enthusiasm, and those that are directed toward others. The authors posited that other-directed emotions "include feelings of appreciation, gratitude, goodwill, and concern for the well-being of others" (Michie & Gooty, 2005, p. 446). They further proposed that authentic leaders tend to prioritize positive other-directed emotions toward both internal and external stakeholders. In contrast to some views of leadership that suggest positive and negative emotions may distort the leader's view of reality, Michie and Gooty (2005) asserted that a lack of positive other-directed emotions interferes with the leader's ability to convert values into actions.

Section summary. Leader motivation is a distinct area of research that seeks to explain not only how leaders motivate their followers, but how leaders' own motivations cause them to pursue and enact leadership roles. Some motivations, such as a need for

power or a crucible life event, instigate the desire to lead. Other motivations, such as self-efficacy and competence, enable the attainment of a leadership position. Still others, such as goal-setting and self-mastery, cause leaders to persist in leadership activities. Just as a leader may be described by more than one leadership construct, the leader's motivation appears to encompass a number of needs, cognitions, emotions and external events.

Chapter Summary

This chapter's literature review explored the setting, participants and topic of the proposed study which was designed to address the research question: what theory describes medical leaders' motivations to lead multidisciplinary prostate cancer clinics? The review of extant research served two distinct purposes. First, it created sufficient topical knowledge to allow the researcher to conduct intensive interviews with study participants. Second, it identified gaps in the existing literature regarding multidisciplinary prostate cancer clinics, medical leaders and leader motivation.

Interest in multidisciplinary cancer care is growing, as reflected by multiple case studies describing the establishment and operation of multidisciplinary prostate cancer clinics (MPCCs). However, there are few published comparisons of the operational practices, medical outcomes, physician attitudes or leader characteristics that define MPCCs across the country. A number of case studies have emphasized the value of physician leadership and in some cases have also described successful leadership practices. There is a need for research that more deeply explores the attributes of effective MPCC leaders.

Medical leadership grows increasingly important as physicians make the challenging transition to new care delivery environments such as MPCCs. Empirical

research regarding physician leaders is generally segmented by behaviors, skills and identity. Some research is further targeted according to the physician leader's role as an institutional leader, medical service leader or frontline leader. In light of this study's focus on physician leaders in the MPCC environment, this literature review examined the medical service leader using three theoretical constructs: the skills approach to leadership, full range of leadership, and authentic leadership.

The need to recruit, develop and retain medical leaders will continue to grow, yet there is little empirical research that explores the role of behavior antecedents in medical leadership. One of these antecedents is leader motivation. As a relatively new area of study, research regarding the factors that motivate leaders is limited. Further, previous studies that examined physician leaders' motivations produced diverse results. Theoretical understanding of medical service leaders' motivations will help to fill this gap, assisting health care organizations as they develop MPCC leaders. Chapter 3 defines the methods the researcher used to develop a construct that describes what motivates physicians to lead in the MPCC environment.

Chapter 3: Methods and Procedures

Researchers who study leaders have historically favored quantitative, rather than qualitative, methods (Klenke, 2008). Bryman (2008) proposed that the quantitative approach views social reality as objective and external by incorporating the norms and practices of positivism while the qualitative approach allows researchers to treat social reality as emergent and constantly changing as individuals create and interpret it. Advocating for a greater emphasis on qualitative methods, Klenke (2008) alleged that quantitative leadership research methods that test hypotheses across broad settings are "poorly suited to help us understand the meanings leaders and followers ascribe to significant events in their lives and the success or failure of their organizations" (p. 4) when compared with qualitative methods.

Creswell (2007) defined five different approaches to qualitative research design: case study, ethnographic, grounded theory, narrative, and phenomenological. Each approach uses similar methods to define a problem, collect data and analyze those data. The decision to choose one approach over another is predominantly based on the focus of the study's research question (Creswell, 2007). Narrative research explores the life of one or more individuals while case study research describes and analyzes one or more activities, events or programs. Phenomenological research seeks to understand the essence of an experience by studying multiple individuals who have shared that experience and ethnographic research examines a group that shares a particular culture. Grounded theory research is unique in its intention not only to study an experience, but also to develop "an abstract theoretical understanding of the studied experience" (Charmaz, 2006, p. 4).

Based on these definitions both phenomenology and grounded theory are viable methods to study how physicians are motivated to lead. However, grounded theory has the added benefit of advancing knowledge by creating a framework on which broader theories may be built. In contrast to other qualitative research approaches, the scarcity of grounded theory leadership studies results more from its complex theory-making process and time-consuming data analysis than from its applicability to the research topic (Klenke, 2008; Suddaby, 2006).

Parry (1998) justified grounded theory as an approach to study leadership based on four criteria: prior quantitative studies that focused on the psychology of leadership have not led to an enduring and integrative theory; the theme of change is consistent in leadership, and appropriate means are needed to study leaders longitudinally; leadership is a process of social influence and requires a method tailored to investigating that process; and leadership as a social process contains a wide and deep range of variables, and its study generates broad and deep data from those variables. Parry's criteria provide a means to evaluate whether grounded theory is an appropriate approach for a given study. When physician motivation to lead is analyzed using these four criteria, there is a clear fit between the research topic and the grounded theory approach. Based on the analysis shown in Table 1 a qualitative, grounded theory method was selected for this research study.

Table 1

Evaluation Criteria for Fit Between Grounded Theory Study and Leadership Subject

Evaluation Criteria	Subject Does Not Meet Criteria	Subject Meets Criteria
A focus on psychology has not led to an enduring, integrated theory.		Motivation, and motivation to lead, are both described by a broad number of theories.
The theme of change is consistent; a longitudinal approach is needed.		Prior research indicates that motivations are changed by time and environmental events.
A process of social influence requires an appropriate means to study it.		Leaders influence others' motivations, and their own motives are influenced by their experiences.
The process contains broad and deep variables, which lead to broad and deep data.		Medical leaders have diverse backgrounds and experiences that influence their motivations.

Note: Adapted from: *Grounded Theory and Social Process: A New Direction for Leadership Research*, by Ken W. Parry, 1998, *Leadership Quarterly, 9*(1), p. 85.

Two dimensions within grounded theory methodology further define a study's specific design: the role of the researcher and the type of theory to be developed (see Appendix A). Although qualitative research may generally be considered interpretivist and quantitative research positivist, differing approaches to grounded theory emphasize these traditions to a greater or lesser degree (Bryman, 2008). In the first dimension, the researcher's role, the postpositivist approach seeks to find an objective explanation of a phenomenon and minimizes the researcher's influence on the process and conclusions while the constructivist approach emphasizes the importance of the researcher's subjective viewpoint in understanding the studied phenomenon (Charmaz, 2006; Glaser & Holton, 2004). In the second dimension, theory type, grounded theory research may be

designed to examine a single setting and generate a substantive theory with narrow application, or to study a wide range of settings and create a formal theory with broad applications (Corbin & Strauss, 2008). For this study the researcher's intention was to create a theory of leader motivation unique to one specific population and setting, which dictated that a substantive theory would result. The researcher also recognized that her past experiences would influence her present research which suggested a constructivist study. As a result this study's method and procedures were designed to produce a substantive theory using a constructivist approach. The substantive theory generated by this study may also be referred to as a *construct*, which is characterized by "simplicity, resilience, and limited scope" (Jansen & Rieh, 2010, p. 1519).

Research Questions

The central research question that guided this study was: what theory describes medical leaders' motivations to lead multidisciplinary prostate cancer clinics? The four procedural sub-questions that framed this study are:

1. What categories emerged during open and focused coding?
2. What relationships between categories emerged from theoretical coding?
3. What refinements to the categorical relationships resulted from sorting the researcher's memos?
4. What theoretical model emerged when the relationships were diagrammed?

Data Collection Process

The grounded theory data collection process has three characteristics that are considered essential elements. The first of these is theoretical sampling, in which an initial sample is augmented by additional subjects who are selected for their ability to add

data to new areas of interest, which develop from analysis and categorization of previously obtained data (Charmaz, 2006). The second is an emphasis on gathering rich data that describes a social situation through a combination of instruments, including interviews and observations made in the social setting (Charmaz, 2006; Suddaby, 2006). The third is the use of interview questions that are semi-structured, allowing researchers to "narrow the range of interview topics to gather specific data for developing our theoretical frameworks as we proceed with conducting the interviews" (Charmaz, 2006, p. 29).

Sampling and sample. This study's participants were recruited from multidisciplinary prostate cancer clinics (MPCCs) across the United States. Each participant was a medical doctor who founded, currently directed, or previously directed a multidisciplinary prostate cancer clinic. The clinics where these physicians practiced met the following criteria:

1. A dedicated prostate or genitourinary cancer clinic
2. The ability to provide evaluation and treatment recommendations, in one week or less, for at least 60 patients per year
3. Team-based consultation, including oncology, radiation oncology and surgery, available in a single location
4. Active participation of patients and families in the treatment decision process
5. Continuous operation for a minimum of 2 years

The researcher initially estimated that there were less than 100 multidisciplinary prostate and genitourinary clinics in the United States that met these criteria, and was able to locate 30 such clinics through electronic search and referrals (see Appendix B). Of these,

21 had identifiable leaders who became potential study participants. Participants were identified through one of three means: published MPCC case studies that described the individual as a physician founder or leader, peer referrals that identified the individual as a MPCC leader, or information provided by the MPCC directly in response to a telephone or written inquiry.

The researcher invited physicians to participate through a personalized e-mail that described the study's purpose and requested a response indicating the individual's willingness to participate. Those individuals who responded received a subsequent letter that further described the study's purpose and protocol and offered to answer any initial questions about the study (see Appendix C). Those potential participants who did not respond to the initial e-mail received a follow-up message from the researcher within 10 days to ensure that the correspondence was received.

The sample included physicians from academic medical centers, community cancer centers, medical foundations, and military medical centers. As data were collected and data analysis began the researcher coordinated additional participant selection using theoretical sampling methods. Corbin and Strauss (2008) described how grounded theory sampling becomes increasingly specific over time as categories become saturated with similar data from multiple participants. Charmaz (2006) similarly called saturation the point where data gathering "no longer sparks new theoretical insights, nor reveals new properties" (p. 113). Consistent with the grounded theory process, the researcher continued to refine the selection of study participants as the study's theoretical framework emerged.

The first six invitations were sent to individuals who were recognized as MPCC leaders based on their published research. Each of these individuals responded within five days to confirm their interest and tentative interview dates were established for each participant. Given that five of the six original candidates were male urologic oncologists, four additional candidates were selected based on the diversity of their gender, practice setting and oncologic specialization. These additional candidates also agreed to participate and their interviews were scheduled. After the initial round of ten interviews, one participant was eliminated when the researcher discovered this medical leader was not directly involved in the prostate cancer program. As transcription continued on the remaining nine interviews, initial coding revealed a high degree of similarity in participant responses. To validate that the study data were approaching saturation the researcher selected five additional candidates, considering the diversity of their geographic location and years in practice as well as gender, setting and specialization. Three of these candidates agreed to participate and the remaining interviews took place. The researcher concluded that theoretical saturation had been established after transcribing and coding these three additional interviews. The demographics of the study's final twelve participants are shown in Table 2.

Table 2

Study Participants Demographic Data

		Medical Oncologists	Radiation Oncologists	Surgical Oncologists	Urologic Oncologists
Years in Practice					
	10-19	1			1
	20-29	1			3
	30-39		1	1	2
	40-49		1		1
Gender					
	Female		1		1
	Male	2	1	1	6
Practice Location					
	Northeast	1		1	2
	Northwest	1			1
	South				2
	Southwest		1		1
	West		1		1
Institution Type					
	Academic Medical Center	1	1		2
	Community Cancer Center	1		1	1
	Medical Foundation		1		1
	Military Medical Center				3

Human subjects considerations. This study gained approval from Pepperdine University's Institutional Review Board (IRB) before human subjects research began (see Appendix D). The institutions where the participants were employed or contracted did not require separate, additional IRB approval since the study did not involve patients or protected patient data. Physicians did not receive compensation for their participation.

The researcher provided physician participants with informed consent before interviews were conducted and advised these participants of their right to withdraw from the study at any time (see Appendix E). To ensure interview responses remained confidential participants were identified by numbers as P1 through P12 in all study records. All study data were collected, transcribed and stored electronically. The researcher's memo notebook, which was used to reflect on the data, did not contain any

specific references to individual study participants. This notebook remained in the researcher's personal possession throughout the course of the study.

The computer used for the study was password protected and operated on a secured network. At the conclusion of the study data were stored on an external drive that was locked in a commercial safe at the researcher's private residence. This electronic data were physically separated from the researcher's original copies of the signed consent forms, which were also stored in a commercial safe at the researcher's residence. All electronic data and consent forms will be destroyed five years after the study's completion.

Data collection strategy. Face-to-face interviews, lasting no more than 75 minutes, were conducted in each physician's office or conference room. Eight interviews were conducted in person; three interviews were conducted by video teleconference; and one interview was conducted by video, followed by an in-person meeting. The researcher audio taped the participant's responses to allow verbatim transcription. Interviews were scheduled over a period of ten weeks to allow sufficient time for transcription and data analysis after each one occurred.

At least 24 hours before each interview a reminder confirming the time and location was sent to the participant by e-mail communication. Prior to the start of the interview the researcher inquired if the participant had any questions regarding the interview process. Notes taken during the interview were limited to prompts for additional questions to ensure eye contact was maintained with the participant. At the conclusion of the interviews the researcher thanked the participants for their time, reinforced the value of their contributions to the study, and inquired if they would like to

receive copies of the finished dissertation or interview transcript. Following the interview field notes were recorded electronically. These notes included impressions of the participant's behavior, mannerisms, and level of engagement with the setting and the interviewer.

Interview protocol. This study utilized semi-structured interviews to collect data from physician participants. To develop a preliminary set of interview questions the researcher used immersive exploration of physician leadership, multidisciplinary cancer clinics and motivation theory. This included reading over 100 journal articles, visiting a cancer clinic and tumor board conference, and consulting eight physicians with research experience. Reeve (2009) suggested that a study of motivation focused on understanding what causes a certain behavior should examine five general questions. These five questions are (a) Why does a behavior begin? (b) Why does the behavior persist over time? (c) What causes the behavior to be directed toward some goals and not others? (d) Why does the behavior experience a change in direction? and (e) Why does the behavior cease? Eight interview questions were initially proposed based on this background.

To ensure applicability of the initial interview questions, the researcher asked four experts to review them and to provide comments. These experts included two physicians with multidisciplinary clinical experience who were also familiar with medical or social science research and two experts in the field of psychology. Once the questions were modified, based on the experts' comments, the researcher conducted three pilot interviews with physician leaders. Pilot participants were invited to provide feedback on the questions and process after the interview concluded. Their comments were also

incorporated into the initial interview questions. The final set of core interview questions is shown in Appendix F. Each participant was asked these core questions, though the order in which they were presented varied according to the progression of the interview. Consistent with grounded theory methodology, additional interview questions evolved as data were collected and analyzed, as well as during the interviews themselves.

Data Analysis Processes

Some research portrayed as grounded theory is not consistent with the rigorous data analysis criteria developed by academic leaders in the field (Parry, 1998; Suddaby, 2006). Specifically, grounded theory emerges from a process known as constant comparison which requires the simultaneous collection and analysis of research data (Parry, 1998). This creates an ongoing interaction between the coding and categorizing of new and existing data, and the reflective process of memo-writing, as shown in Figure 1.

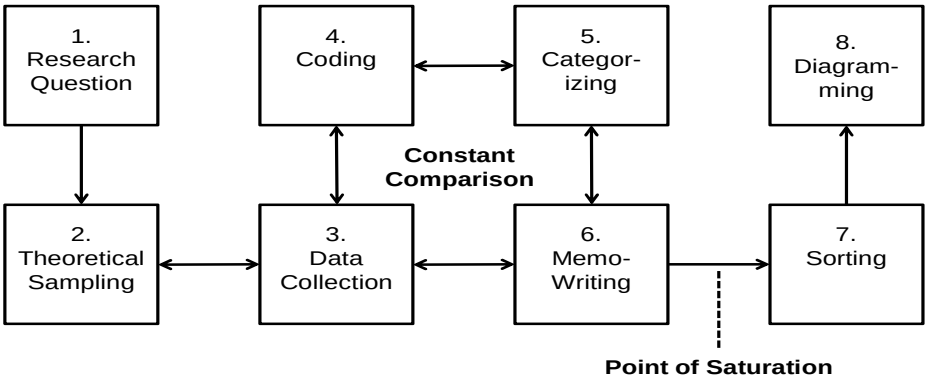


Figure 1. Grounded theory process.

Grounded theory data analysis also utilizes the process of theoretical comparison, which compares objects or incidents derived from study data with others outside the data,

based on their properties or dimensions. This discipline “forces the analyst to think at the property and dimensional level and not just at the specifics or raw data level” (Corbin & Strauss, 2008, p. 76). The progressive abstraction that theoretical comparisons provide is an important element of the theory development process.

Coding. The process of coding is the first step in data analysis and refers to labeling each segment of data in a way that summarizes and categorizes that element (Charmaz, 2006). In preparation for coding, each of this study’s interview recordings was personally transcribed by the researcher and the data from each interview was stored in an electronic text document. Although the researcher initially intended to use a software program for line-by-line coding, the nature of the transcripts suggested that creating a visual chronology of each participant’s data would be more informative. After three interviews were completed the researcher began generating a fishbone diagram for every participant. As Charmaz (2006) recommended, the individual codes arranged on these diagrams were phrased as gerunds to create a sense of action. The depictions also contained the identifying number, the medical specialty, the gender, the number of years in practice and the type of institution with which the participant was affiliated.

After eight open coding diagrams were complete the researcher began focused coding by annotating the fishbone diagrams using colors to indicate categories or themes. After identifying general categories for all open codes, a second set of fishbone diagrams was developed to reflect individual participant experiences that were consistent with each focused code. This process continued until all transcriptions were complete and had been represented on the two sets of fishbone diagrams.

Theoretical coding is the third analytical step in grounded theory. The categories identified by focused coding are woven together with theoretical codes, to identify possible connections which form the backbone of a new theory. Charmaz (2006) described theoretical coding as an integrative process that helps the researcher "tell an analytic story that has coherence" (p. 63). Although theoretical coding is contingent on establishing enough focused codes to suggest broader patterns between them, the grounded theory coding process is iterative rather than lineal. Therefore, this third analytical step was repeated several times. Through the development of focused and theoretical codes the researcher continued to refine the study's sample, interview questions, and initial coding. The complimentary process of memo-writing assisted in this iterative data analysis.

Memo-writing. Memos are a historical record of the researcher's data analysis process. These short notes that capture ideas and patterns which emerge from the data are crucial to grounded theory, providing "a space to become actively engaged in your materials, to develop your ideas, and to fine-tune your subsequent data-gathering" (Charmaz, 2006, p. 72). The researcher began memo-writing once the first interview was complete, capturing ideas by hand in a bound notebook she carried with her daily. These personal memos and their associated diagrams were pivotal in the theoretical coding process, and were ultimately the place where this study's grounded theory emerged.

Theory construction. This study's theoretical construct and associated model resulted from graphically assembling the patterns from theoretical coding in chronological order. This was accomplished through a series of hand-sketched diagrams that built on those contained in the researcher's memo journal. Diagramming creates a

visual depiction of these comparisons and linkages which can clarify "the relative power, scope, and direction of the categories in our analysis as well as the connections among them" (Charmaz, 2006, p. 118). Since there is no single, preferred form for presenting the construct which emerges from a grounded theory study (Charmaz, 2006; Creswell, 2007), the researcher chose to present the results of this study as a visual model accompanied a two-sentence narrative.

Trustworthiness. In qualitative research one measure of a study's quality is its trustworthiness, which Lincoln and Guba (1986) explained as a composition of four elements: *credibility*, *transferability*, *dependability*, and *confirmability*. Bryman (2008) described credibility as the degree to which the social world being studied is accurately represented in the eyes of its members, and transferability as the extent to which a study's rich descriptions of objects or environments allows other researchers to evaluate their relevance to different social worlds. Dependability describes the organization and accessibility of research records such that a study's procedures and inferences may be assessed by a third party, and confirmability is evaluated by the degree to which the researcher acted in good faith without being overly biased by personal beliefs or values (Bryman, 2008).

This study ensured credibility by using a member checking process in which a draft of the research findings was made available to all participants to solicit their feedback and reactions (Creswell & Plano Clark, 2011). The four participants who responded did not request any changes to the study's final results and conclusions. As Ponterotto and Grieger (2007) recommended, this study's results were presented with verbatim quotes from the interview transcripts to provide the reader with a rich

understanding of the social world and the actors it studied. Dependability was achieved with rigorous attention to the quality and integrity of data capture and analysis, using appropriate hardware and software technologies as well as hand-sketched diagrams. Confirmability was addressed through transparent adherence to the grounded theory process which balanced the objectivity of structured coding with the subjectivity of personal memo-writing.

Chapter Summary

The grounded theory approach to qualitative research is well-suited to a study of leaders and the social world in which they work (Parry, 1998; Suddaby, 2006). This study of leader motivation followed the constructivist grounded theory process of data acquisition and analysis as proposed by Charmaz (2006) whose research approach springs from the traditions established by researchers in the late 20th century. Consistent with both traditional and contemporary grounded theory methods, the study's methods built upon an initial set of study participants and interview questions. Through theoretical sampling and constant comparison the range of participants and interview questions evolved as the data were captured and analyzed. Ultimately this data informed a construct that describes what motivates physicians to lead multidisciplinary prostate cancer clinics. The study's findings and construct are presented in Chapter 4.

Chapter 4: Results and Analysis

The results of this grounded theory study evolved through the process described in Chapter 3. This process is reflected in the study's four research sub-questions:

1. What categories emerged during open and focused coding?
2. What relationships between categories emerged from theoretical coding?
3. What refinements to the categorical relationships resulted from sorting the researcher's memos?
4. What model emerged when the theoretical relationships were diagrammed?

Creswell (2007) described this type of research question as procedural and suggested that such questions "foreshadow how the researcher will be presenting and analyzing the information" (p. 114). This chapter is structured to present the study's results in the context of its four sub-questions which in turn address its central research question: what theory describes medical leaders' motivations to lead multidisciplinary prostate cancer clinics?

Categories Emerging from Open and Focused Coding

The researcher immersed herself in the words and inflections of the twelve participants' stories by personally transcribing each interview, slowly listening to each recording at least three times. As these stories wove back and forth through time and experiences, participants enveloped their lives as leaders with their identities as physicians. This was particularly apparent when the transcripts showed that up to half of each interview contained detailed descriptions of medical processes and procedures. The

participants' descriptions of their medical lives were often enthusiastic and animated as indicated by the quotations below. [1]

> It sounds kind of trite, but just taking care of people is a wonderful thing. [P11]
>
> It wasn't just elevated PSA or a lot of consults. You were doing cystoscopies, and vasectomies, and prostate biopsies. It was fun. [P10]
>
> I love it actually. That's one of the things, when I have my clinic it lasts forever. I keep talking to them, and they keep talking to me. [P5]
>
> We actually saved his testicle last night, so that was fun. [P2]

By comparison, the physicians' descriptions of their leader lives frequently suggested mixed feelings about their leadership roles.

> I'm willing to take that step in terms of the monitoring, or in terms of trying to implement multidisciplinary clinics. But outside of this, I don't know, I'm still very happy to leave leadership to people who seem to manage their time better than I do. [P3]
>
> When I came here, because of the way the program had to be built, I resigned myself to the fact that I wasn't going to do surgery. [P9]
>
> My sense of leadership, and my sense of fulfillment, is directly related to how what I'm doing in the situation impacts on a person, a patient – not on an employee. [P12]
>
> To be a leader you really have to have a service mentality with your faculty and the staff. And how do you make that balance between doing stuff to promote your own career, because you're still in academics and so trying to do your own stuff, and yet balance it to help other people? [P1]

Given the study's focus on leading and motivation to lead, the portions of each transcript that addressed a participant's work as a physician were segmented from those portions that described their roles as leaders. After highlighting the leader-life portions of each transcript the researcher diagrammed the described experiences chronologically, using one fishbone diagram for every participant. Blocks of text were coded by

[1] All direct quotes in this chapter were obtained from the researcher's personal communications with study participants between August 20, 2012 and October 29, 2012.

expressing them as gerunds, some of which encompassed *in vivo* or word-for-word phrases. The open coding process produced between 31 and 48 discrete codes per participant, with an aggregate total of 524 leader-life codes. A sample open coding diagram is shown in Figure 2.

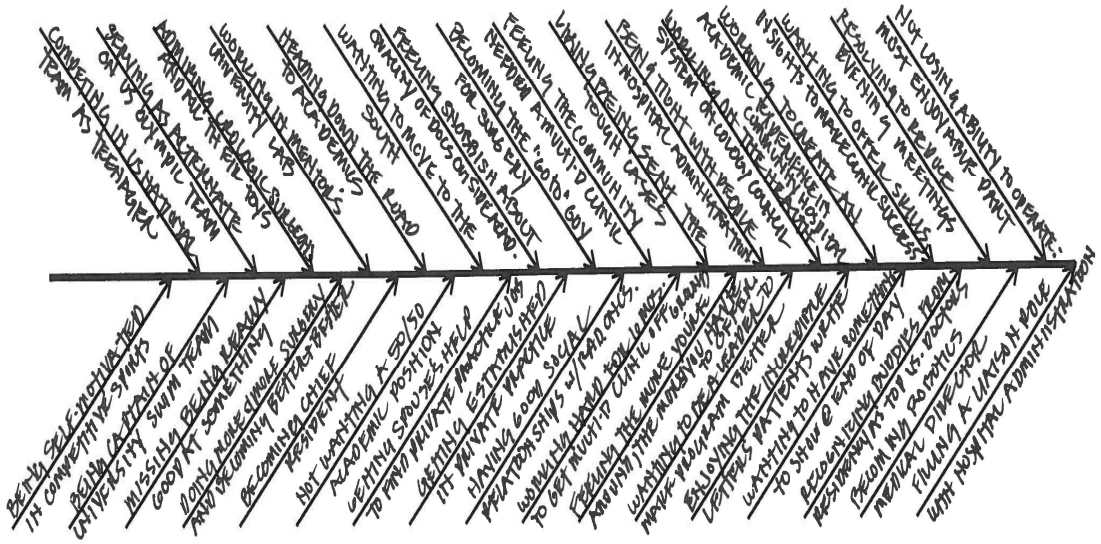


Figure 2. Sample open coding fishbone diagram.

To begin the process of focused coding the researcher highlighted each branch of text on the open coding diagrams, selecting different colors for different general categories. These annotations revealed the frequency with which each category appeared across all participant interviews. Eleven categories of similarity emerged which the researcher called *being mentored*, *believing in self*, *clarifying moment*, *living with purpose*, *setting goals*, *changing course*, *limiting power*, *enjoying collegiality*, *balancing time*, *finding flow* and *being best*.

At this point the researcher created a separate fishbone diagram for each of the eleven categories with each branch representing a relevant participant experience. These focused coding diagrams began to explore the cause and effect connections between

motivation and leadership by aggregating the data collected from all participants. A sample focused coding diagram is shown in Figure 3. The themes that emerged within each category are summarized below using the participants' own words to create rich and vivid descriptions (Ponterotto & Grieger, 2007.)

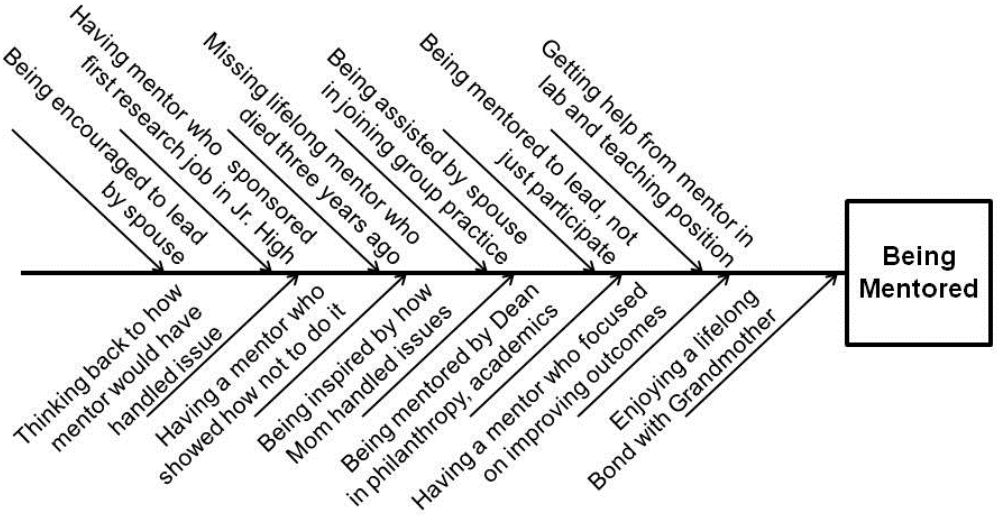


Figure 3. Sample focused coding fishbone diagram.

Being mentored. When participants were asked about past and current mentors each named one or more individuals who had made an important contribution to their lives. Some of these mentors were educators who provided encouragement and opportunity.

> My science teacher, I was actually interested in doing some radiation as summer work, and we talked a little bit about that. He asked me if I wanted to compete for a position out at [city], which was a research lab out on [place]. And so, at that time I was interested in chasing girls, and was playing football. But I did ask a lot of questions, and was willing to invest some time, and so he said he thought this was something I really should do, and spend the time if I could get that position. He saw something that he thought would develop, and it was worthwhile investing in. [P11]

> When I applied to residency I was pretty sure that I would like to work at [university], and then work with [name]. It took a while because I was in

> medicine so I had to spend two years in medicine – short track, skip the third – and went into medical oncology, take a year in clinic, and then finally I got to work with [name] in the lab. But in the lab it was more like a post doc, because I already had Ph.D. experience. And since then he's been great. I mean, he helped me get on faculty, he helps me publish papers, he's been very helpful in getting grants. [P5]

Other individuals talked about long-term relationships with mentors who provided them with guidance in both their professional and their personal lives.

> He looked straight in my eyes and he said, "Your life will not be complete, unless the last chapter of your life is with children." That's all he said. And then, I think it was about a year later, that we adopted our first daughter. So he was a great mentor for me for over 20 years. I actually miss him to this day – he died about three years ago. I actually miss him to this day. [P9]

> He's still here. He has an office downstairs, he does educational research. But the bottom line is, when I became, before I became chairman, he mentored me. And he periodically will pick the phone up and say, I've got your $50,000, you're gonna get [name's] estate money. So in other words, he continues to be – you know, he wants me to go out to lunch with him once a year and we just sit and talk about things. So he's really been my recent mentor. [P4]

Some reported that family members took a mentoring role as the participants developed into leaders.

> Sometimes as a medical leader it's trial by fire, and you don't get that formal leadership education that I saw my wife get. You often wonder how important that is. Had I done a lot of that stuff, would I have been better? It's hard to know. She helped me a lot. As I had different experiences I would bounce things off, and she'd go well, you should read this chapter in this book. And I would. Again, she was very helpful. [P1]

> The two things that definitely got me to kind of step out of the behind-the-scenes work I was doing was my illness and my husband, who's taken a lot of leadership roles himself. He's a [hospital] physician – it's a second marriage for both of us – and he's one of the few [specialists] in the region. And he kind of has made me realize that I have a lot to offer, and so it's been a combination those two have given me the confidence to do it. [P3]

Believing in self. As they reflected on their thoughts about leadership participants spoke of their growing realization that they have something to offer to others as leaders. Several cited the value of their professional experience in preparing them to lead.

> Now I think maybe the older I get, I'd be a better leader, because I wouldn't be as much concerned about my own career, that I could maybe focus on more mentorship in doing this. [P12]

> I guess the more experience I get, the more important it is to me to try to take on these leadership roles, because I feel like I have more to offer that way. And early on, I probably wasn't motivated to do it in the first place. And secondly, I probably didn't have the tools to put me in the position to do it. But the more time goes on, the more sort of institutional knowledge I have, and experience I have, to where it's important to me to try to cultivate the skill, and take on that additional responsibility. [P10]

> I think I'm more comfortable in a leadership role now. I guess the more you do, the more you've been around, the more you feel like you have to offer as a leader. You've sat through a lot of meetings, and you've seen how other people lead. And you sort of develop your own style of leadership, I guess. And I feel pretty comfortable with how I do it now. [P2]

> I had no idea how complex everything was. On the other side of the coin, it's a learning experience. And the longer you're around, the more you figure out where you put your resources. What's worth fighting, you know, it's intuitive. What do I just deal with in 30 seconds, and what do I spend five hours on? That's what I think happens to you the longer you're in the job. [P4]

> You really have to lead by example. You know, I think that hasn't really changed, but it's become really evident to me that just doing what you think is right is an important part of leadership. You don't do it because you want to be a leader. You do it because you want to do it right. [P11]

Interestingly, five of the twelve participants mentioned that they had served as Chief Resident during medical school.

Clarifying moment. All but one participant told stories of a clarifying moment that helped to shape their life's direction. In each case one or more experiences caused their perspective to shift, and in some cases they instigated a change in the course of their career. Some moments were the culmination of multiple experiences.

> I thought we could help people by designing medical equipment. So that was my undergraduate. So I didn't get that job. I didn't get a job as the guy who was designing biomedical equipment. So is said, okay, that's cool, I'll go back and get a masters. So I was working for a startup company and I was studying biomedical engineering in the master's program at [university] where I got my undergraduate. And it was really kind of like halfway through that it kind of hit me really hard, that we were not going to cure disease by building medical equipment. [P5]

> There was an M.D. / Ph.D. program that was geared to spending some time up at Cape Kennedy, or Cape Canaveral at the time. So I had a number of years of trying to innovate programs, to build some programs at Cape Canaveral. And then I suddenly realized that I enjoyed treating patients much more than treating monkeys, which is what I was doing. [P11]

> Originally I thought that the focus was on improving quality of life. Making sure that people who were having problems got the right care, and that it was better. Initially, it was all about improving treatments for patients with advanced disease, although that very quickly morphed into a realization that, despite all the to-do we have right now about who does and doesn't need to be treated, that the patients who needed to be treated needed to be cured more frequently than they were. [P12]

For other participants a single event created a moment of clarity that affected their future direction.

> I don't know if you're familiar at all with a man named [name] at [university] who does a lot of work with communication to patients about cancer diagnoses. That was a stepping stone to me. I heard him being interviewed on NPR when I was going through chemotherapy, and that's what got me started on pushing for a multidisciplinary prostate cancer clinic. [P3]

> When I was a senior in high school getting ready to leave for college and start my premed, my Dad died suddenly. He had been in pretty good health, but had been a heavy smoker and was in a relatively minor vehicle accident where he worked. Within 24 hours he died. I was home, and it was summertime, and I didn't know enough to push for him to get to the hospital quicker, and by the time he got to the hospital he had lost a lot of blood He went to the operating room and survived the operation, but died the next day in intensive care. You know, it was a very traumatic experience, and I think that that was a motivating factor to do well and to be a success. [P1]

> I remember scrubbing one night with one of the attendings, and he said "You look tired." And I said "Yeah, I'm tired." And he said, "You know, there's going to be a lot more of this." And I said, "Yeah, but I'm just looking at five years of general surgery, and then it will get better." And he looked at me and he said, "Look at

> me. Who am I?" And I said, "The attending." And he said, "Where am I?" And I said "You're with me." And I said, "It's not gonna get better, is it?" [P8]

Living with purpose. During their interviews each participant described an overarching professional purpose, though none used those specific words. Their purpose descriptions ranged from a broad vision with far-reaching consequences to a personal quest for individual excellence. Several individuals spoke of their desire to make a daily contribution through continuous improvement.

> It's just trying to help the job get done right. I think, typically in the places I've ended up as a leader, there's been a vacuum. [P10]

> What's my future? Keep on doing what I like to do. I've had the opportunity to apply for chairmanships in different places, and I get offers to go into private practice all the time, but this is really where I feel like my niche is. [P7]

> Trying to make a difference, and trying to make things a little bit better. I never thought that was much of anything, but it is somewhat difficult for me to accept people who just come in and do the same thing every day. [P11]

Other participants emphasized the importance of making broad changes that would benefit patients beyond their institutions.

> Having something that came from our research that we're offering to patients in the clinic on a real time basis is the most satisfying thing. [P12]

> There was a great need for public education. You know, the PSA tests had really just come out. Senator Dole was out there on Capitol Hill. The whole thing just started to grow up, that education was very important. [P4]

Two physicians expressed a purpose with global impact.

> When I left I was given a map of where my former fellows are. And they're spread, not only around the country, but around the world. And to me, that was the legacy that I left, was the mentoring and training of young men and women. To me, that has been the most satisfying thing in my career. And I still do that here. [P9]

> To try to cure cancer. Quite honestly, nothing else. [P5]

Setting goals. The underlying goal that drove each participant to lead a multidisciplinary prostate cancer clinic consistently related to that individual's broader professional purpose. These goals followed several general themes. The first was to facilitate research.

> I was very, very passionate about having a multi-D clinic. I don't remember exactly when it started, but we didn't have this and I was really, really upset, and the reason is, in my opinion this is becoming standard of care….First of all, patients who were initially faced with a diagnosis got a much better set of information with which to make their decisions. So that was one thing, but the other thing quite honestly is, I actually clinically believe that to take the optimal care of prostate cancer we really need to focus earlier on in the disease course. And what was happening is, medical oncology, we see patients really far down the road when everything has failed. So in order do trials and also to understand the disease earlier in its disease course, medical oncology had to be a part of this. [P5]

> The reason that I decided to do this didn't have anything to do with leadership. It had everything to do with making it more possible for patients and physicians to get something out of what we're doing. That is, I don't have any perceptions that I'm going to necessarily change the world outside of the patients that we see – although we clearly have made a difference in terms of the areas that we do research in. And I've been criticized for not thinking in the broader scale – that is, what we do is, what I do is that important. I think that the leadership was all about seeing there being a need that I could help with. [P12]

The second goal-setting theme was to improve the patient experience through better communication.

> The communication between doctors was not always that efficient. You know, what did you tell them? And you also have to remember that there was this sort of a cold war going on at the time of radiation oncologists versus surgeons....And what I realized at the time was that this was very unfair to patients. It was also unfair to the trainees, to the doctors that we were trying to teach, be they radiation residents, or urology residents, or medical oncology residents. [P4]

> Historically surgeons tend to be biased toward surgery and I particularly felt that within my department, as I think is probably typical of most urology groups, patients weren't necessarily being given a fair presentation of what all their options were. And an advantage of the multidisciplinary clinic's patients getting more balanced presentation of what their options are and by doing it the way we've done it it's a very standardized presentation that everyone's basically

> hearing the same information. Individual discussions with doctors are somewhat skewed depending on who's staffing the clinic, but at least there's a lot of the same information that everyone is hearing. [P3]

The third goal-setting theme was to make patient care more efficient.

> Our objectives were to have not just a clinic with high patient satisfaction, and to solve the access problem, but to also really have it as a high throughput clinic. [P10]

> It really was a result of our looking at what we thought was a fragmented way of delivering care – which is to some extent why I think I brought up the [name] relationship, because it grew out of our involvement and learning curve in terms of quality improvement. And so prostate cancer, specifically, is one that, as you probably already know, tends to have a lot of uncertainty. And so one of our other interests really was…I had toyed a number of years with Bayesian analysis for decision making, and the utilities associated with helping patients make decisions. [P11]

Some participants pointed out that they continued to set new goals to improve their clinics once they were operational.

> We started talking about these other ways to see more patients. Can we see twelve patients on a Thursday? I don't know. Can we do it every Thursday, instead of three Thursdays a month? [P2]

> His clinic provides a venue to conduct clinical trials effectively, as well. That's been an aspect of our clinic that I don't think we've fully utilized yet. I'm in the process of trying to open clinical trials for prostate. We have some open, but not as many as I'd like. [P10]

> We set up a special clinic on Wednesdays, after we were at this a few years. We found that we were seeing some elderly patients, and that they pretty much never had surgery, it wasn't appropriate, so that was not good use of the urologists' time. So we said, 'let's set up a special seniors clinic.' [P8]

Changing course. Participants described a change of direction that provided them with a broader view of medical practice. In some cases these changes occurred very early in life or during their college years.

> And so, while this was going on I started the ambulance corps, but I couldn't legally run the ambulance because I wasn't 18. And then when I became eighteen I ran the ambulance. I ran it from eighteen all the way through college…. When

> you move away you're sad, I don't actually want to know what happened with it. When it was really needed, we did a lot of good. [P4]

> I was doing biomedical engineering in college, and the biomaterial lab that I was working in, the research questions were really being driven by the physicians, and not the professors in lab. And I felt like, we were working on these questions that were coming from medical doctors, so I thought, maybe I'm barking up the wrong tree. I enjoy patient care as it is, and with the research that I'm doing. I decided at that point to go ahead and go to medical school. [P10]

A number of individuals told stories of changing course after their careers began.

> So, I'm going down this path toward academics, you know, urologic oncology. And I grew up in [state], and was tired of the Northeast. And my wife was from [state], and she wanted to move to the South. So I looked for academic jobs, and the jobs that were available – they were academic jobs where you could be, like 50% of the time. It wasn't what I wanted….I sent my resume and CV to these guys. And they called me back half expecting that there must be something wrong with me. Why would I be coming to [town] to practice private urology? But I came down and interviewed, and it worked out. [P2]

> After 22 years of [city], of the 120 hour work week, after a lot of surgery, I was looking for a change. And I actually looked for a dean position, but there were like 20 of them in the country that were empty – so that was a bad sign. And so, I ended up looking at cancer center directors, and fell into this one through a colleague of mine. [P9]

Other participants related changes in position or specialization that they were considering for the future.

> I do see myself as moving on to another arena, and not necessarily outside of medicine. There are a number of venture capitalists who've asked me to become medical directors of their various start up things. And so I might choose to do that, and use whatever talent I've achieved to sort of promote – because I think that it's not stultifying, but you have to kind of live with where you are. Some of the ideas here are fine, and it's a very forward-looking organization. But the other things I'd like to do would really be more challenging in terms of implementing things that really are a magnitude different than what I'm doing now. [P11]

> The other thing that I am very passionate about is end-of-life care, and being much more open with patients of what their options are. For a brief period of time I even considered branching out into palliative care, but then that didn't seem so feasible. But I'm so happy that that's a growing specialty because I feel sometimes, because we can do so many things for people, too many physicians think it's easier to just do things rather than the have lengthy discussions with

> families and patients about the fact that just because we have the ability, it doesn't mean we should be doing everything for everybody. [P3]

Limiting power. Some interview participants specifically mentioned power in the context of leadership while others discussed it more indirectly. A number said they were uncomfortable with personal power.

> I can't do this myself. So I think the reason to be a leader is not because I feel the need for power. I actually don't really like that feeling of power. [P5]

> I don't mind doing limited stuff, but there are definitely people who really, really like the power of the leadership roles, and that's just not my style. [P3]

Other participants expressed their belief that exercising power is not always compatible with medical leadership.

> It seems like the power of the committee is much greater than a single voice. [P10]

> In terms of leadership, I think it's probably this idea of taking very small baby steps, and achieving something in the environment, and then showing that. I think it's difficult unless you have the money and the power. I think that's an issue in a multidisciplinary clinic, because a lot of people have lots of responsibility but not very much authority. [P11]

Some participants also described how they learned to limit the use of power in their medical leadership roles.

> I've learned that sometimes it's important to be inclusive initially, rather than being exclusive. I've learned that it's very, very important – which took me a long time – to listen rather than to dictate. [P9]

> I like the feedback and I guess you like the power to some extent. But you know the graveyard's full of indispensable people. [P6]

> You have to have this pack mentality that you all have a vision, and a direction, and you have to understand that sometimes you have to relinquish to somebody else, and allow them to kind of step forward. You always can't be the boss of the pack. [P4]

Field observations noted that participants treated the researcher with respect and made no effort to exercise power or create a hierarchical relationship. When interviews took place in a small conference room, individuals chose a seat on the side rather than the head of the table. Most participants were dressed casually and removed their lab coats before the interview began.

Enjoying collegiality. The importance of collegial relationships with other physicians was frequently mentioned by the interview participants. Some spoke of collegiality in the context of leadership.

> Once you have a team, I enjoy the collegial aspects of that. There are a lot of people who I tend to not enjoy being around, but I've learned to live with that. But I do think the ability to work in a collegial environment and achieve something – those are two wonderful things I think you gotta have if you're a leader. [P11]

> Sometimes what you lose in leadership is sometimes the intimacy of peers that you used to have. And that tends to go away, because suddenly you're now, you're not their equal, you're their boss. So yeah, I think that's what you give up is some closeness of colleagues sometimes. So what you tend to do is you morph into closeness of other chairs. [P4]

Participants also referred to their positive relationships with physicians in other disciplines.

> I had a fairly active working relationship with the urologists. And so it seemed, because I had put all that together, had put the urologists together and our medical oncologists, and had done that on a nationwide level, it was more obvious for me to do that than for somebody else to do that. [P12]

> I have a good relationship with the radiation oncologists, which is pretty unusual. You're fighting a turf battle. But the two guys who do most of the prostate work in our cancer center are social friends of mine, our kids are friends. We rarely disagree about the path the patient should go on. [P2]

> We've gotten so busy, and the medical center's gotten so big, and there's so much electronic communication that opportunities for live interaction have become less and less. And I love being in another department working with colleagues who I

> do enjoy and respect. So it's that aspect, the patient aspect and the collegial aspect. [P3]

Balancing time. When asked what they had given up in order to lead all twelve participants emphasized the time investment that impacted other important aspects of their lives. A recurring theme was the impact this time commitment made on their personal lives, particularly on their children.

> I don't have children. I guess I gave that up. I really didn't want that – I just didn't, it's not like I really wanted kids and had to give it up. I just didn't want children. Maybe I didn't want children because I had so much else to do. [P8]

> You give up a lot of time. My new year's resolution this year actually was only one evening meeting per week. It worked for about three weeks. It's rare…it's almost always two or three meetings per week. [P2]

> It's a balancing act with my own hobbies, and what I want to do for recreation, and family time. And I like to think that I can balance them pretty effectively. But sometimes things will happen that I think need attention on one end or the other, and of course will wind up losing some in the other areas. [P10]

> My son is now 14 and finally getting to an age where he's got a lot of stuff that he wants to spend his own time doing and I think he's finally transitioning to respecting the time and energy I put into my job. But it's definitely been difficult to balance the two. [P3]

Participants also stressed the negative impact their leadership commitments had on those professional activities that provide them with their greatest satisfaction.

> It's giving up time, time to do a lot of the things that I went into academics to do: to spend more time developing new studies. It's a constant conflict of doing science. I do a fair amount of science, which is again translational, that I work closely with. I used to have a lab, I had one laboratory for quite a while, and I really enjoy asking questions and getting them answered. And it's hard to do that without enough time to design the experiments and make those things happen. [P12]

> [University] had me pegged at about 50 to 60 percent clinical effort, which means that I couldn't do as much patient care. Maybe now that also explains some of the burnout and frustration, because basically I was still expected to do about 60% of my clinical load, but then have this administrative responsibility, plus the academic. I think that was just too much. [P1]

> I don't miss [surgery] it as much as I did when I first got here. I miss it every once in a while when there's a very challenging case of morbidity, mortality. But time heals all wounds, and so I keep busy in other areas, so I really don't miss it as much as I did the first three or four years when I was here. [P9]

In spite of the participants' busy schedules the researcher consistently observed that they seemed unaware of time during their interview. Though many had expressed in advance that they had a tight time schedule none of these individuals consulted their watch or mobile device for the time while being interviewed.

Finding flow. In their interviews participants described past or present experiences where the challenge of the task, and the satisfaction of mastering that task, led to the sense of pleasurable concentration known as flow. In childhood and young adulthood these experiences often resulted from physical activities.

> Diving is actually a sort of solitary sport. You have to really be sort of self-motivated. It also was unusual for me to be…they rarely ever have divers as captains of swim teams. So I was probably the first diver at [university] that was ever the captain of the swim team. [P2]

> My Mom would tell you – she passed away a while back – it was not surprising to her that I went into surgery, because as a kid I liked to take things apart and try to put them back together. So that might make sense. [P9]

> And even when I was a kid I was really always trying to do some project; I just couldn't sit still. [P1]

In professional practice flow experiences were generated by intellectually stimulating activities or by a mix of physical and mental challenges.

> We're moving through a number of studies trying to define how likely we are to get the best drug possible before we move into, again, a very large phase III study. That actually is the most compelling thing possible. [P12]

> Once I see it, I can put the whole organizational thing together. But I've sometimes got to think hard and be led a little bit, to see this huge big picture, and then I can do it. To me that's a little bit of a challenge, but once I've got it the whole organizational thing comes together. [P8]

> I would hate not being able to operate. And maybe I'd grow out of that one day, but I think that's really the greatest part of my job, or the part I enjoy the most. [P2]

Some participants noted that the formation of their multidisciplinary clinic initially produced a challenging experience. However, that challenge generally lessened as the clinic operation grew more stable and predictable.

> There was a lot of excitement here because [institution] was cranking it up. The institution was recruiting new people, and we were getting the pieces in place to have the components of a multi-D: urology, radiation oncology, and medical oncology all here, and guys and gals who were interested in collaborating, and interested in working together. [P1]

> My other role is the multidisciplinary clinic. And to be honest with you, initially it was really – when we first started up it was getting it going. But now it actually runs pretty easily. To be frank, compared to the core with all the problems with the cells, people doing it, it actually takes much less time of mine than it initially did. [P5]

> I guess maybe I did put it into place, but I don't micromanage it, and it sort of runs on its own – I guess I'm in the background. [P6]

The researcher's field observations noted that participants increased their levels of enthusiasm and energy when talking about their flow experiences as evidenced by their tone of voice, facial expressions and body language.

Being best. Ten of the 12 interview participants mentioned the importance of accomplishment. Some participants described their desire to be the best at an individual endeavor.

> When I was growing up I got obsessed with cars, and then you get obsessed with getting good grades, and then you get obsessed to be the best at what you do. [P1]

> You go from, and I guess I went from doing something that I did really, really well…and then you know, when I stopped…you know, you miss being really, really good at something. And maybe that's what drove me to be a better surgeon is I wanted to be fairly good at something. [P2]

> I'm the program director for the residency program. It requires a lot of work but there's really no, you know, you never really float to the surface. Nobody ever gives you an award for it. The reward is actually watching it work. It's not that somebody's gonna give you something for it. It's just that, you know, I put this together and it works. [P7]

Several individuals felt it was important to not only achieve excellence but also to have that excellence publicly recognized.

> I'd rather be here, in the roles I'm in, than be a chair in some other department where I wouldn't have the resources, and the same standing in the cancer community as far as the hospital. I mean, this is the number one cancer center in the U.S. [P8]

> I would like to do this to where I retire and people say "I wish he had stayed another year" rather than retiring, and having them say "I wish he had retired last year." [P9]

> You worked really hard, people recognized the hard work, and you were able to either move ahead as an individual, or you were able to move your group ahead. And today I don't know if leadership carries the same respect or authority that it did in the past. [P4]

Patterns Emerging from Theoretical Coding

Theoretical coding provided the processes to discover connections between the categories developed in focused coding. The researcher began by segmenting each leader-life into five time periods: growing up, learning medicine, practicing medicine before forming a MPCC, practicing medicine after forming a MPCC, and looking ahead. This created a method to focus on similarities and differences across all of the participant's leader-life stories. Using the fishbone diagrams developed during open and focused coding, the researcher compared the timeframe in which the eleven categories emerged in the leader-life of each participant. It was immediately clear that not every categorical event or experience consistently occurred in one of the five timeframes. For example, one participant related a clarifying moment that occurred prior to medical

school, five described a clarifying moment during medical school and six spoke of a clarifying moment during their pre-MPCC practice. While seven participants singled out a significant mentoring experience that occurred before they entered medical practice, nine indicated that they found important mentors after they started their professional careers. Similarly, seven participants changed their professional course before or during their medical education while five chose to change course after they entered practice. Of those, four have contemplated making a change after forming their MPCC.

As an alternative the researcher examined the chronology of each individual's experiences in the context of the eleven categories, first by simply studying the fishbone diagrams and then by grouping together verbatim transcript excerpts from each interview. This process produced three consistent patterns which the researcher called *mentored self-efficacy, purpose-driven goal,* and *time-moderated challenge.*

Mentored self-efficacy. The first pattern describes a connection between the participants' mentoring experiences and their belief in self that resulted from those experiences. When an individual was mentored by a family member such as a spouse, parent or grandparent, the ongoing relationship often created a fundamental confidence in his or her ability to succeed as a professional or as a leader. When the mentoring emerged from a school or workplace relationship such as a teacher or department leader, the mentor usually opened the door to a new and challenging experience for the mentee. Over time, as the participant experienced success in that endeavor, the success created self-efficacy. Of the 12 participants, six related at least two significant mentoring relationships: one within the family that built personal confidence as well as one in school or the workplace that led to a confidence-building experience. In both cases

participants often related that their mentors saw something in them that they had not recognized in themselves.

Purpose-driven goal. The second pattern encompasses the connection between a moment of clarity that shifted the participant's perspective, a professional purpose that emerged from that new perspective, and a long-term goal that allowed the participant to enact that purpose through leading a MPCC. Participants consistently described a clarifying moment where they realized the importance of a specific purpose. They subsequently elaborated on how leading a multidisciplinary clinic became a means to accomplish that purpose, whether the desired end result was to expand research, reduce cost or improve the patient experience.

Time-moderated challenge. The third pattern establishes a connection between the negative impact of MPCC leadership on the medical leader's personal and professional time and the positive opportunities a MPCC offers to engage in challenging activities. Some participants noted that leading a MPCC consumed less time than their other leadership commitments. Most also spoke of how working in their clinic provided them with satisfying patient-centered challenges that overshadowed the time cost of MPCC leadership.

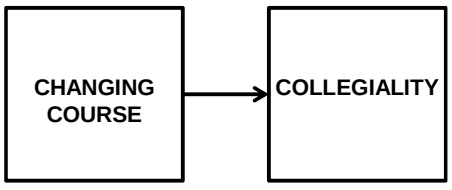
To confirm that these three patterns recurred for most or all participants, the researcher created a condensed leader-life story for each of the twelve individuals. These one-page stories contained verbatim quotes from each of the eleven categories which were then placed in chronological order. An example of one leader-life story is shown in Appendix G. This process confirmed that the categories within each of the three patterns had consistent chronological linkages as described above. However four categories

remained without a sequential pattern, raising the question of whether they were otherwise linked.

These four categories – being best, limiting power, enjoying collegiality and changing course – did not appear to be directly connected to one another. Changing course was an event that occurred at different times and was precipitated by different circumstances for each participant. Based on the participants' stories, limiting power and enjoying collegiality appeared to be learned attitudes. Being best was a fundamental desire expressed by some, but not all, of the participants. To further explore a possible linkage amongst these categories the researcher turned to memos she had created during the interview and data analysis period.

Patterns Emerging from Memo Sorting

The researcher's memos comprised 41 pages of hand-written notes created over three months. These notes proved beneficial in clarifying additional categorical connections. One page contained two boxes called *changing course* and *collegiality* with the notation that *changing course creates a greater desire for, and a broader base of, collegial relationships*. (See Figure 4).



Changing course creates a greater desire for, and a broader base of, collegial relationships.

Figure 4. Researcher's changing course memo.

The next memo contained boxes labeled *power* and *collegiality* with the note that *desire for collegial relationships drives activities where the leadership role doesn't provide or require power*. (See Figure 5).

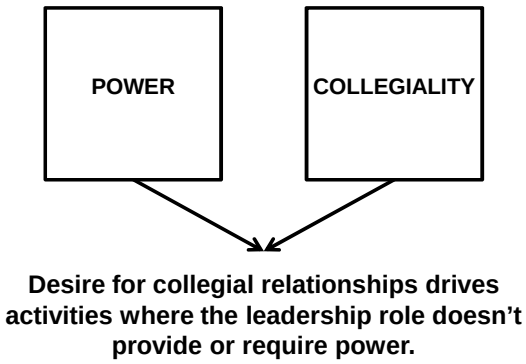


Figure 5. Researcher's power memo.

A subsequent entry observed that *it seems as though the participants migrated toward leading MPCCs because that environment was high in affiliation and low in power, which suited their styles.* Based on these memos a fourth pattern was created which the researcher called *multidisciplinary relatedness*.

Another set of the researcher's memos addressed the participants' desire to be the best. A page with three boxes labeled *setting goals*, *being best* and *flow* contained the note that *continuous improvement can result from either of two needs – competence or achievement – but both result in setting new goals.* (See Figure 6).

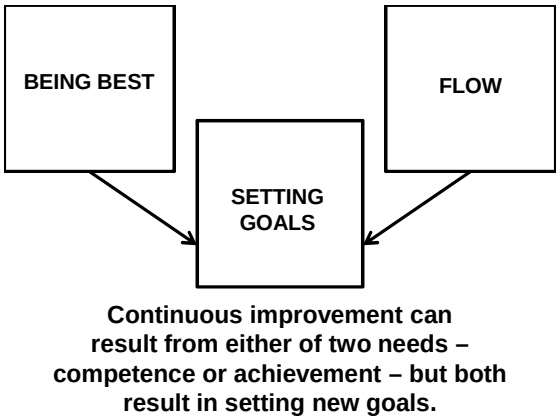


Figure 6. Researcher's being best memo.

A separate journal entry observed that *although being best wasn't a motivating factor for all participants, it may be related to the different way people experience flow. Some are content to keep challenging themselves to be better while others need to be recognized as the best.* These memos generated a fifth pattern that the researcher called *achievement-driven goal.* The two patterns defined through memo sorting are described below.

Multidisciplinary relatedness. Pattern four links the MPCC leader's desire for relationships with a range of peers due to experience with other medical disciplines, and their preference for collegial rather than hierarchical relationships. Participants related how course changes in their careers increased their exposure to, and respect for, those medical specialties that practice in a multidisciplinary environment. They also acknowledged the realization that collegiality and collaboration is more effective than power and hierarchy when leading their medical peers.

Achievement-driven goal. The fifth pattern describes the connection between the desire for continuous self-betterment, the need to be the absolute best, and setting achievement goals. Some participants expressed their desire to constantly improve their

performance and environment, while others described their need to demonstrate that their performance exceeded others at a broader scale. Both being better and being best generated short-term, specific goals for improvement. These contrasted with the purpose-driven goals described in pattern two, which tended to be long term and comprised of many sub-goals.

Emergent Theoretical Construct

With five motive patterns defined, the next analytical step was to determine if any connections existed between them. Two memos in the researcher's journal addressed the stages of MPCC development and the changing role of the medical leaders as their clinics matured. One memo read, *Until now I've focused more on the creation of the MPCCs, and less on their maintenance and improvement, yet all three phases are important. Many of the participants spoke about making changes and improvements. Where does this belong in the theory that's emerging?* In response to this question, the subsequent memo contained a diagram showing the leader-role in three stages of clinic development and suggesting that the leader's motivations might differ in each of those stages (see Figure 7). Based on the idea that the five motive patterns might be linked to the leader-roles in each stage of clinic development, the researcher returned to the original time lines shown on the fishbone diagrams to determine if a connection existed. This process confirmed that the medical leaders' motivations to create a new MPCC were different from their motivations to sustain or renew an existing clinic.

Three stages of clinic development: Creation, Maintenance, and Improvement

Figure 7. Researcher's stages of development memo.

Motivations of the leader-creator. An important antecedent to the creating stage is self-efficacy: the physician's belief in his or her ability to lead. MPCC leaders recognized those who mentored them for seeing potential before they saw it in themselves and exposing them to multiple experiences where achievements built their confidence. Personal mentors helped them to experience success in childhood and gave MPCC leaders the confidence to pursue their interests in early adulthood. Later their professional mentors challenged them to realize their greatest potential by offering unique opportunities and experiences. Without their mentors the MPCC leaders would have lacked the self-efficacy they needed to step up and lead a new form of medical practice.

In the creating stage MPCC leaders were motivated by a long-term goal congruent with their professional purpose as a healer. That purpose was the result of an external experience that provided a moment of clarity. For example, a physician researcher who realized he wanted to cure cancer through immunology rather than design biomedical equipment established the goal to found a MPCC as a means to increase early stage clinical trials. In another example, a surgeon who recognized that only 9% of the prostate

patients in his community consulted with a radiation oncologist founded his MPCC in order to expose patients to more treatment options. Their specific goals differed yet both of these two physicians were motivated to create a MPCC as a means to further their professional purpose. The leader-creator's motivations are modeled in Figure 8.

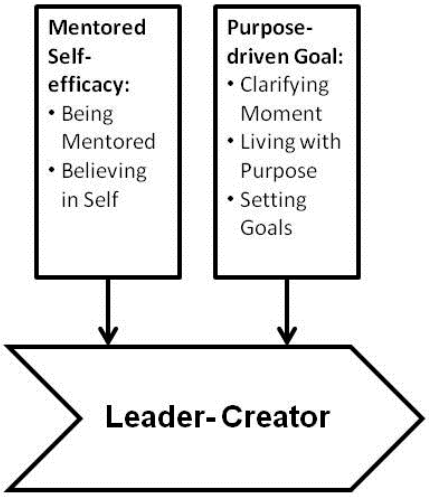


Figure 8. The leader-creator's motivations.

Motivations of the leader-sustainer. While the confidence to lead and a compelling goal were the key motivators for creating multidisciplinary clinics, another set of motivations drove MPCC leaders to sustain these clinics through their early operations. These leaders knew they could not realize their goals alone and successfully recruited their physician peers to join them in their efforts. Unlike some doctors in medical practice, MPCC leaders had deep respect for, and friendships with, physicians outside their specializations. Openness to these multidisciplinary relationships resulted, in part, from changing professional course in the pursuit of interesting challenges. However, embracing multidisciplinary practice was only one factor in the leader-sustainer's desire to lead a successful clinic. A deeper motivation arose from the MPCC leaders' need for collegial relationships coupled with a general discomfort with displays of power. The

clinic structure allowed them to lead while still enjoying collegial relationships across a broad range of disciplines. MPCC leaders reported spending about 10% of their time on clinic leadership duties, leaving them ample time to work in the clinic treating patients and collaborating on treatment plans. Even leadership activities were approached in a collegial manner by sharing decision making amongst participating doctors and resolving issues in a group setting.

The ability to minimize time-consuming leadership activities and maximize patient-centered activities also motivated leader-sustainers. When MPCC leaders became overburdened by their leadership activities they tended to eliminate other obligations but retain their MPCC leadership commitment. For these leaders, working in the MPCC created ample opportunities for flow experiences. When the initial challenge of creating the MPCC faded they replaced this with the enjoyment of their daily personal challenges as they engaged in patient interaction and research programs. Unlike many administrative roles, MPCC leaders have the opportunity to blend the duties of leadership with the pleasures of practicing their healing art. The leader-sustainer's motivations are modeled in Figure 9.

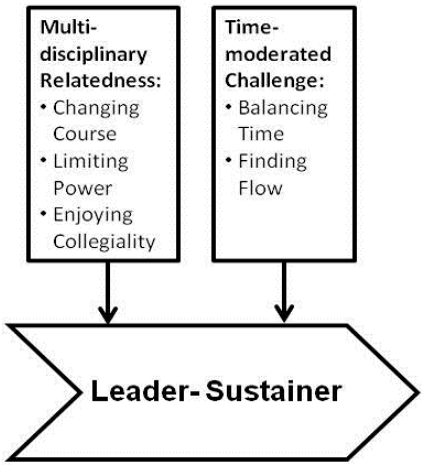


Figure 9. The leader-sustainer's motivations.

Motivations of the leader-renewer. As MPCC leaders mastered their dual roles, working on their clinics as leader-renewers and in their clinics as practitioners, they began to seek additional challenges. In this renewal stage leaders might be driven by competition, seeking recognition that their organizations were the best in categories such as patient experience or outcomes. They might also be challenged by incremental improvement of their own past performance, continuously evaluating their results. The competence motivation to be better and the achievement motivation to be best are not mutually exclusive. Alone or in combination, they continued to drive renewal in this study's participants.

The leader who seeks to continuously improve generates a series of moving goals that are measured over time, while the leader who seeks to be best may create one or more finite, short-term goals. In either case, achievement goals in the renewal stage of clinic development may differ markedly from the MPCC leader's original purpose goals. For example, the participant who initially sought a high-throughput MPCC later recognized the need to incorporate a larger number of clinical trials. The leader who focused on improving patient education and shared decision making also developed an automated system for tracking patient outcomes. The leader who first intended to increase the number of patients given a choice between surgery and radiation later sought to increase the clinic's recommendations for active surveillance. For the MPCC leaders these accomplishment goals complemented rather than replaced their purpose goals, thereby reinforcing their motivation to lead. The leader-renewer's motivations are modeled in Figure 10.

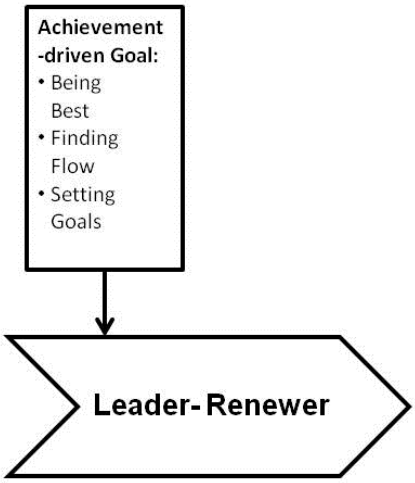


Figure 10. The leader-renewer's motivations.

Leader-Stage Motivation Construct

The aggregation of the medical leader's three MPCC roles and the motivation patterns associated with those roles produced a construct that the researcher described as *Leader-Stage Motivation*. In this construct a physician experiences five motive patterns in leading a multidisciplinary prostate cancer clinic: mentored self-efficacy, purpose-driven goal, multidisciplinary relatedness, time-moderated challenge, and achievement-driven goal. These motivations are distinctly connected to the stage of the clinic's development and the medical leader's corresponding role in its creation, sustenance and renewal. The leader-stage motivation construct is modeled in Figure 11.

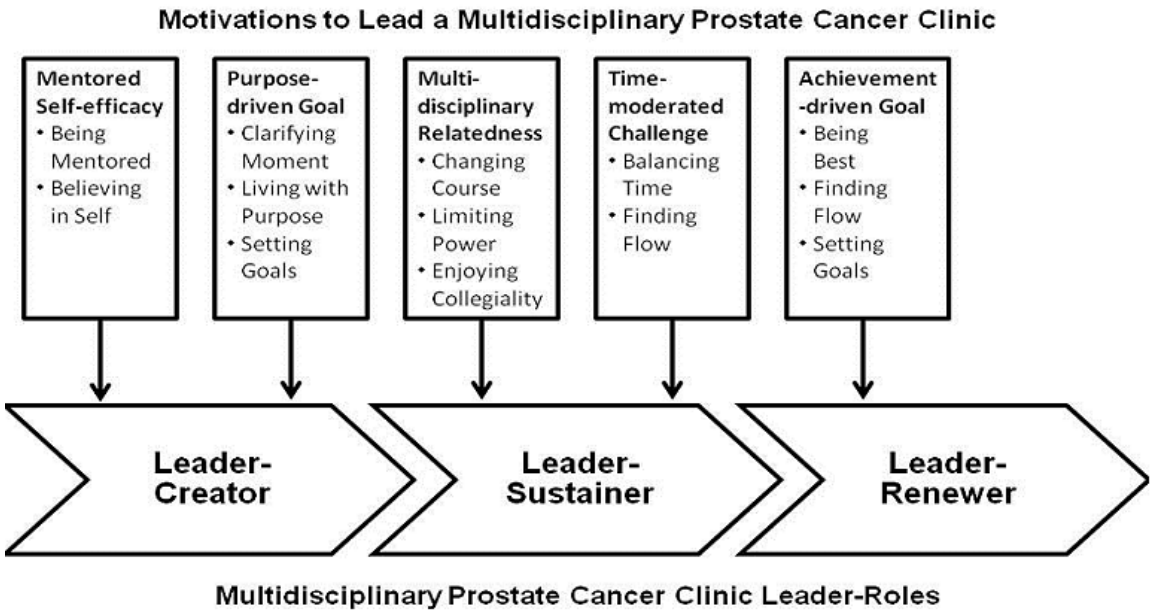


Figure 11. Leader-stage motivation construct model.

Chapter Summary

This study's four secondary research questions reflected its method of data analysis and served as a structure for the presentation of its findings. The process of open and focused coding used words as well as diagrams to create eleven categories, seven of which were grouped into three patterns that reflected their chronological connections to one another: mentored self-efficacy, purpose-driven goal, and time-moderated challenge. By incorporating diagrams and observations from the researcher's memos, the remaining categories were grouped into two additional patterns: multidisciplinary relatedness and achievement-driven goal. These five patterns were then arranged to correspond with three stages of MPCC development, creating a model of the MPCC leader's motivations to lead. This model informed the final construct called *Leader-Stage Motivation*. Chapter 5 explores this construct in the context of other leadership motivation theories, discusses its implications for recruitment, retention and development of MPCC medical leaders, and provides suggestions for further research.

Chapter 5: Discussion

The value of a grounded theory study is ultimately measured by the resulting theory's utility. Charmaz (2006) described the purposes of grounded theory research as "contributing to a better world", "transforming practice and social processes", and "influencing what we study and how we study it" (p. 185). Within this context the model and construct that addressed this study's primary research question – what theory describes medical leaders' motivations to lead multidisciplinary prostate cancer clinics? – contributes to three related spheres of knowledge. First, it expands existing theories of leader motivation to encompass medical leadership, which becomes increasingly important in this era of disruptive health care changes. Second, it creates practical applications for recruiting, developing and retaining multidisciplinary prostate cancer clinic (MPCC) leaders, which offers the potential to improve access for men with newly diagnosed disease. Third, it provides a foundation for further research with broader applicability in the realm of physician leaders' motivations. The discussion topics in Chapter 5 are structured around these theoretical, practical and research implications.

Implications for Theory

The leader-stage motivation (LSM) construct describes a combination of needs, cognitions and external events that drive physicians to pursue leadership and persist in leading multidisciplinary prostate cancer clinics (MPCCs). This construct illustrates how MPCC leaders experience five patterns of motivation – mentored self-efficacy, purpose-driven goal, multidisciplinary relatedness, time-moderated challenge, and achievement-driven goal – each of which is comprised of multiple motivational factors. These five patterns are experienced in distinct time periods that parallel a clinic's stages of

development, in which the medical leader's role changes from leader-creator, to leader-sustainer, to leader-renewer. The LSM construct can be studied at three levels: the individual motivations experienced by MPCC leaders, the linkages among the motivational factors that create each motivational pattern, and the leader-stage motivation construct compared to formal motivation theories.

Motivational factors. Among the previous studies of physician leaders' motivations, the findings of Snell et al. (2011) are significant given the broader population represented by their participants and the degree to which their research foreshadowed this study's results. Through 51 interviews with Canadian medical leaders, the authors identified eight motivations that closely parallel eight motivating factors expressed by MPCC leaders and reflected in the LSM construct (Table 3).

Table 3

Study Outcome Comparison

Motivations Identified in Snell, Briscoe, and Dickson's (2011) Study	Motivations Identified in Perrine's Leader-Stage Motivation Construct
Successful Leader Experiences	Believing in Self
Influence of Childhood Experiences	Being Mentored
The Need to Make a Difference	Living with Purpose
Choosing to be Engaged and Innovative	Setting Goals
Social Camaraderie	Enjoying Collegiality
Work-Life Balance	Balancing Time
The Fun of Deep Engagement	Finding Flow
Peer Recognition of Accomplishments	Being Best
	Clarifying Moment
	Changing Course
	Limiting Power

Since their stated intent was to understand how physician leaders experience engagement, rather than to derive a theory from the research data, the authors grouped the motivating factors into four categories rather than looking for distinct relationships between them. The LSM construct takes a step beyond the phenomenological approach of Snell et al. (2011) by describing specific patterns of motivation and linking them to an organization's stages of development.

Motivational patterns in the leader-creator stage. The LSM construct describes how a medical leader's behavior is driven by mentored self-efficacy and a purpose-driven goal in the MPCC creation stage. While the goal defines the action to be taken, self-efficacy creates the confidence to take that action. The importance of leader self-efficacy figured prominently in Chan and Drasgow's (2001) motivation to lead (MTL) construct as a proximal antecedent for individuals who like to lead and see themselves as leaders, as well as those who are motivated to lead out of a sense of duty. Further, the authors found that past leadership experiences and openness to new experiences contributed to leadership self-efficacy. These findings echoed Bandura's (1989) research showing that self-efficacy is improved through new experiences and relationships. Personal and professional mentors drive self-efficacy through both their high expectations and the access they provide to confidence-building experiences (Bennis & Thomas, 2002; Taylor et al., 2008). This study's research data validated that mentoring relationships were particularly important to building self-efficacy in MPCC leaders.

Self-efficacy creates the confidence to lead and goal-setting increases self-efficacy (Bandura, 1989; Latham & Pinder, 2005). The MPCC medical leaders who participated in this research were driven to create their clinics by a goal that reflected

their professional purpose and that purpose was catalyzed by a unique clarifying moment. Barbuto (2005) described how goal internalization occurs when an individual's actions are consistent with personal values. For leaders, significant events and experiences can be instrumental in forming those values and clarifying individual purpose (Bennis & Thomas, 2002).

Role motivation theory (RMT) suggested that professionals and entrepreneurs differ in the purposes that drive them: professionals are motivated by the desire to help others and by identification with their profession's values while entrepreneurs are driven by a desire to innovate and identify creative approaches as their own (Miner et al., 1994; Miner et al., 1989). However, in their leader-creator roles this study's participants displayed characteristics of both professionals and entrepreneurs, responding to a significant event that shaped their values by pursuing a purpose-driven goal that was both innovative and supportive of their healing profession.

Motivational patterns in the leader-sustainer stage. In the transition from leader-creator to leader-sustainer, the LSM construct indicates MPCC leaders' motivations shift from personal goal-striving to the need for collegial relationships and professional challenges. Collegiality has a dual role during this stage: it provides an essential component of the clinic's viability by building trust and commitment among the physicians who practice there and it creates personal bonds that satisfy the leader's need for relatedness (Rogers & Holloway, 1993). As health care organizations increase in size and incorporate multiple specialties, cultivating collegiality becomes more challenging (Curoe, Kralewski, & Kaissi, 2003). This study showed that MPCC leaders are drawn to a collaborative multidisciplinary environment in part through career changes that create

relationships with other medical specialties, and in part by a low need to exercise power over others. In the MPCC environment work tasks are relatively unstructured, the leader has limited authority to reward or punish followers and relationships between the leader and followers are collegial. Fiedler's (1967) contingency model of leadership effectiveness predicted that individuals with a low power motive and a high need for relatedness would be well-matched to a leadership position in an organization like the MPCC.

While the MPCC leader's relatedness needs are satisfied by collegiality, mastery needs are primarily satisfied by patient-centered activities rather than the act of leading. Role motivation theory provides one explanation of the principal drivers for practicing professionals such as physicians, which include the desires to learn, to identify with the profession, and to help others (Miner et al., 1994). The theory of flow builds on this construct by explaining how individuals derive intrinsic satisfaction by challenging themselves to increase their own professional competence (Csikszentmihalyi, 2003). In contrast to the leader-creator phase of development that demands a sizeable investment of the MPCC leader's time for non-clinical activities, the leader-sustainer role enables physicians to treat patients as well as lead their peers, minimizing the time cost of leadership and enabling flow experiences for these medical leaders.

Motivational patterns in the leader-renewer stage. As the MPCC begins to run smoothly under the management of clinical staff the medical leader seeks new challenges and enters the renewal stage. In the LSM construct motivations in the first two stages of leading are largely personal, while in the third stage leaders are also driven to achieve collective goals and rewarded by the satisfaction of seeing their team succeed. MPCC

leaders experience two types of achievement motivation: being better and being best. These motivations are consistent with the achievement goal construct (Elliot, 2005) which differentiated between mastery goals used to develop competence and performance goals intended to demonstrate competence to others. While some MPCC leaders favor one type of goal over another, others are motivated by both mastery and performance goals. From the perspective of self-determination theory both types of goal are capable of creating intrinsic motivation: mastery goals lead to flow experiences and performance goals lead to competition that provides valuable feedback (Csikszentmihalyi, 2003; Deci & Ryan, 2008).

The leader-renewer stage evokes achievement motivations that are characteristic of both entrepreneurs and skilled leaders. High achievement needs can be indicative of entrepreneurial leaders motivated by results-oriented feedback that emphasizes their personal performance (Miner et al., 1989) as well as skilled leaders who use their own achievement motivations to encourage self-mastery in others (Senge, 2006). For MPCC leaders in the leader-renewer stage, achievement goals may satisfy the social need for recognition as well as the competence need for professional challenges.

The LSM construct in theoretical context. The LSM construct identified in this study differs from the other leadership motivation theories in two distinct ways: the three specific patterns of motivation experienced by its participants and the unique connection between those motivational patterns and the MPCC's stage of development. Within the broad study of human motivation there are three primary frameworks that have been used to describe an individual's motivations to be a leader: McClelland's (1975) leadership motive pattern (LMP); Miner's (1978) role motivation theory (RMT); and Chan and

Drasgow's (2001) motivation to lead (MTL) construct. Like this study's LSM construct, McClelland, Miner, and Chan and Drasgow described theoretical frameworks that incorporated a combination of needs, cognitions and external motivations. A high level comparison of these four frameworks is shown in Table 4.

Table 4

Comparison of Leader Motivation Theoretical Frameworks

Theoretical Framework	Fundamental Theory
Leadership Motive Pattern (McClelland, 1975)	Successful non-technical managers are characterized by a high need for power, a low need for affiliation, and high activity inhibition. In entrepreneurs and low-level managers a high achievement need is also common.
Role Motivation Theory (Miner, 1978)	There are 4 types of organizations: hierarchic, task, professional, and group. Leaders' motivations are determined by the type of organization they lead.
Motivation to Lead Construct (Chan & Drasgow, 2001)	There are 3 reasons people lead: because they enjoy it and see themselves as leaders; because they feel a social duty and obligation; or because they value harmony. Leaders' motivational antecedents vary according to their reason for leading.
Leader-Stage Motivation Construct (Perrine)	MPCC leaders experience patterns of motivation that change predictably according to their organization's stage of development and the leader's corresponding role.

Leadership motive pattern. The 16-year longitudinal study in which McClelland and Boyatzis (1982) validated their leadership motive pattern (LMP) showed correlations between managerial success and a high need for power, a low need for affiliation and high activity inhibition. These LMP characteristics were typical in successful non-technical managers, but were not typical for technical managers. McClelland and Boyatzis (1982) also identified that a high achievement need was important for managerial success at lower organizational levels, but not higher levels. An earlier study

by McClelland (1965) described how a high achievement need was common to entrepreneurs, in contrast to those in professional fields. McClelland's LMP framework for managerial success appears to be in marked contrast to this study's LSM construct, which features a low need for power and a moderately high need for affiliation in the leader-sustainer stage, and a consistent achievement motivation in the leader-renewer stage. If physician leaders are considered to be operating in a technical position, this could explain the lack of consistency between the LMP and LSM constructs. The LMP framework also described management and leadership motivations based on the hierarchy within an organization whereas the LSM construct links leader motivation to stages of organizational growth.

***Role motivation theory*.** Miner et al. (1989) initially studied role motivation theory (RMT) with the intent to validate McClelland's findings regarding achievement motivation. Over time this framework evolved to encompass four versions of RMT associated with a particular type of organization: *hierarchic*, in which duties are determined by management; *task*, in which duties are based on individual goal accomplishment; *professional*, in which duties are determined by occupation; and *group*, in which duties are determined by a work group (Miner et al., 1994). The motivations for each role flowed from the roles required of the organization's key performers, and so differed substantially in each group. For example, in RMT a professional organization's key performers are motivated by the desires to acquire knowledge, exhibit independence, acquire status, help others, and identify with the profession (Miner et al., 1994). In contrast, the task organization's key performers are motivated by personal achievement,

feedback on results, moderate risk taking, personal innovation, and future planning (Miner et al., 1989).

While neither the professional nor the task roles within RMT individually reflect the motivations exhibited by this study's participants, together they represent five of the eleven motivational factors contained in the LSM construct. Unlike the LSM construct, RMT does not contemplate leaders who move from one set of motivations to another within the same organization. Instead, it considers an organization's key performers to be actors who consistently play the roles expected of them. The LSM construct proposes that a leader's role changes as his or her organization grows, and that different sets of motivations drive that leader in each successive stage.

Motivation to lead. Chan and Drasgow's (2001) motivation to lead (MTL) construct identified three types of leader based on that leader's motivational factors. The authors proposed that affective/identity leaders are individuals who lead because they enjoy it and see themselves as leaders. Their motivational antecedents are *vertical individualism* which is similar to achievement motivation, *past leadership experience*, *self-efficacy,* and *extraversion*. Social-normative leaders feel a social duty and obligation to lead. In addition to past leadership experience and self-efficacy, their motivational antecedents are *horizontal and vertical individualism, collectivism, conscientiousness,* and *agreeableness*. Non-calculative leaders agree to lead because they value harmony in their group, and expect no privileges or rewards in return. Their motivational antecedents are *vertical and horizontal individualism, collectivism, emotional stability,* and *agreeableness*. The MTL construct proposed that self-efficacy and past leadership experience can be modified through leader development while other antecedents are

inherent characteristics of the individual. Although both self-efficacy and achievement motivation figure prominently in both the MTL and LSM constructs, MTL differs in its primary focus on personality and values as motivational antecedents. Further, there is no similarity between MTL's three specific leader motivation factors and LSM's motivational patterns and leadership roles.

The contrasts between the leadership motive pattern (LMP), role motivation theory (RMT) and motivation to lead (MTL) extend beyond the constructs themselves to the populations in which they were tested. The LMP construct was developed through longitudinal studies of students and corporate managers (McClelland, 1965; McClelland & Boyatzis, 1982). The RMT task model was derived from research that used small business entrepreneurs and manager-scientists, while the RMT professional model used labor arbitrators as a study population (Miner et al., 1994; Miner et al., 1989). In the case of MTL research, participants were students, management trainees, and those in active military service (Chan & Drasgow, 2001; Romano, 2008). The lack of similarity between the LSM construct and other leader motivation theories could be due in part to its intentionally narrow focus on physicians leading MPCCs. While Chan et al.'s (2000) research with college students showed motivation to lead was independent from their vocational interests, it is nevertheless possible that individuals in similar vocations are motivated to lead by similar factors.

Section summary. The five motive patterns that comprise the leader-stage motivation (LSM) construct are individually consistent with a number of motivation frameworks, including task and professional role motivation theory, the contingency model of leadership, self-determination theory, the motivation to lead construct and the

achievement goal construct. However, the integrated LSM construct differs from other leader motivation theories in that it establishes a relationship between the leader's motivations and changing leadership roles during the life cycle of an organization. From this perspective the LSM construct enhances previous research by tying together a number of existing motivation theories. As a substantive theoretical construct its application is limited to MPCC medical leaders. Nevertheless, it provides a foundation for extending the study of leader motivation to medical leaders in all health care settings.

Implications for Practice

This study provided two important practical findings. First, physicians who lead multidisciplinary prostate cancer clinics are driven by five motivational patterns that change according to the stages of MPCC growth. Second, these motivational patterns include a number of external factors that influence the leader's willingness and commitment to lead. In practice, this allows health care administrators who wish to create and operate MPCCs to determine which potential medical leaders are well suited to a particular role; create a development plan to help those leaders be successful; and structure the position to reward the leaders with personal and professional satisfaction. To some degree the LSM construct's three stages of leading – create, sustain and renew – reflect the health care organization's responsibilities for recruiting, developing, and retaining medical leaders. However, success in these activities appears to result from a combination of current and past experiences which suggests that leadership learning should begin during graduate medical education and continue through professional development.

Recruiting MPCC leaders. The physicians who participated in this research became MPCC leaders through a variety of means. Three were recruited from outside their organizations, two were selected from internal candidates, and seven originated the idea to create their MPCC and personally drive it forward. For those health care organizations with the identified need for a medical leader to create and grow a MPCC this study suggests there are five factors that should be used to evaluate candidates: a personal purpose that is congruent with the MPCC's mission, confidence in their ability to lead other physicians, an orientation toward multidisciplinary collaboration, a balance between the drives to be better and to be best, and the desire to innovate. While dialogue and guided self-reflection could be used to determine a candidate's fit with these criteria, the MSCS assessments offer another means of measuring task and professional motivation. Incorporating some of the questions from these assessments into interviews and reflection topics is one option for determining the important balance between innovation and professionalism in MPCC leader candidates.

Given that over half of this study's participants recruited themselves as clinic leaders, the health care organization that prioritizes multidisciplinary care in an integrated practice unit structure might consider the factors named above when recruiting all physicians – not just those being considered for a leadership position. A physician's ability to successfully work and lead in multidisciplinary environments is increasingly important as U.S. health care evolves into structures that are progressively more disease-centric and patient focused (Lee, 2010; Porter & Teisberg, 2007). If future research finds the LSM construct is consistent across a broader range of multidisciplinary care models, those who recruit physicians for entry level clinical positions could use this framework to

look beyond candidates' technical skills and consider their potential to lead in a multidisciplinary setting.

Developing MPCC leaders. This study's results underscore the importance of external factors in motivating MPCC leaders to create, sustain and renew their clinics. Some experiences, such as practicing in a multidisciplinary environment, focusing personal performance on improvement versus competition, and being mentored, may naturally begin in medical school. Others, such as time management and goal setting, are professional skills that may be developed throughout a physician's career. The andragogical approach to adult learning described by Knowles, Holton, and Swanson (2005) incorporates six principles for effective development*: recognizing the need to learn; preferring self-direction; using prior experience as a learning resource; tying learning to a specific situation; centering learning on realizing individual potential;* and *emphasizing intrinsic rewards*. This approach suggests that helping physicians to develop as leaders is a long-term process and needs to address each physician's stage of readiness to learn. The LSM construct emphasizes a correlation between MPCC leaders' changing roles and changes in their motivations, which indicates that learning opportunities should parallel the three stages of leading for these individuals.

Based on the LSM construct, one might tailor a MPCC leader development program around the five motive patterns and three stages of clinic development. Ideally the process would begin in medical school with a formal mentoring program that emphasized clinical and leadership skills and included experiences designed to build self-efficacy. Rather than fostering a purely objective competitive environment, mentors and professors could help students clarify their individual values and create a life story

congruent with personal purpose. During residency leadership mentors might also be drawn from other medical disciplines in order to build an understanding of multidisciplinary collegiality. Physicians leaving medical school with strong self-efficacy and a highly developed awareness of their personal purpose would be well-equipped to set purpose-driven goals.

Once potential MPCC leaders enter the medical profession the LSM construct indicates their professional development should include skill-building in three areas: *goal-setting, interpersonal skills,* and *time management*. Goal setting skills are essential in the leader-creator stage when personal purpose is expressed by forming the MPCC and in the leader-renewer stage when a balance is needed between mastery and performance goals. Interpersonal skills are particularly valuable in the leader-sustainer stage when developing collegiality requires shared decision making and transparent communication. Time management skills are needed during the leader-sustainer stage to ensure adequate time for both clinical practice and leadership activities. Beyond creating programs that deliver the right skill-building courses to the right people at the right time, the time-honored method of learning clinical medicine – see one, do one, teach one – could also be applied to medical leadership. Giving physicians the opportunity to observe accomplished leaders through mentoring relationships, practice leadership activities that build self-confidence, and act as mentors to others is an ideal strategy for developing current and future MPCC leaders.

Retaining MPCC leaders. Research has shown that some physician leaders experience burnout when their leadership responsibilities encroach on the time needed for their clinical activities (Mirvis, Graney, & Kilpatrick, 1999; Slockett, 2012) Participants

in this study regularly reported that they were expected to lead their peers, to carry a heavy load of patient encounters, and in some cases to also perform research, publish or teach. For MPCC medical leaders whose greatest professional satisfaction is derived from patient-centered activities, streamlining leadership responsibilities so that management tasks are addressed by qualified and competent staff is a key retention tactic. Including MPCC leaders in organization-wide achievement opportunities such as the Malcolm Baldrige quality award or National Cancer Institute designation could be a complimentary strategy. Both clinical and leadership activities have the potential to create flow experiences that lead to a deep sense of satisfaction and accomplishment (Csikszentmihalyi, 2003). When developing MPCC leader retention strategies, the most important factor to consider is that extrinsic rewards such as pay and recognition do not compensate for the lack of professional satisfaction resulting from too much work to do in too little time.

Section summary. The LSM construct suggests a number of specific strategies for developing current and future MPCC leaders. Understanding individual needs and cognitions is essential to placing the right leader in the right role and retaining that leader through the organizational lifecycle. Further, if additional research confirms that LSM's motivational patterns are consistent across a broad population of medical leaders, developing leaders should be a priority that starts in medical school, continues through residency and pervades professional practice.

Implications for Research

This study's findings represent a much-needed first step in creating a theoretical framework for understanding why physicians are motivated to act as leaders. Future

research might take either of two general directions to build on the leader-stage motivation (LSM) construct presented here. The first approach would be to test the LSM model more widely with medical leaders of other disease-specific integrated practice units (IPUs). The second would be to use grounded theory research methods to study medical leaders in other institutional roles. Specific recommendations for these two approaches are described below.

Testing the LSM construct in other IPUs. The current study intentionally restricted participants to multidisciplinary prostate cancer clinic leaders. As integrated practice units become increasingly prevalent in caring for patients with chronic diseases such as cancer, congestive heart failure and renal failure, the need for IPU leaders will increase. One option for exploring the application of the LSM construct is to conduct a qualitative study with participants in diverse multidisciplinary settings, using an *a priori* coding scheme that mirrors the LSM motivational patterns. Such research could further refine this study's methods by including individuals who are not leader-creators of their organizations, defining leadership for the participants prior to data collection, and specifically tailoring interview questions to focus on LSM's eleven motivational factors.

The LSM construct could also be used to build a quantitative assessment tool. This would allow a broad population of IPU medical leaders to be studied in order to determine if their motivations are consistent with those of MPCC leaders. A quantitative approach to future research would mitigate two of this study's limitations: the researcher bias inherent in interview-based qualitative research and theoretical sampling dictated by grounded theory research methods. Since a core element of the LSM construct is the parallel between the medical leader's motivations and the organization's stages of

development, a quantitative assessment might be structured as a longitudinal study to validate this connection. A quantitative study could also incorporate other assessment tools to determine potential correlations between leader motivations and factors such as leadership styles, followers' perceptions of their leaders' effectiveness, and the extent of participants' leadership and management learning.

Replicating the research with other medical leaders. While this study focused purely on physicians leading IPUs, and specifically on MPCC medical leaders, there is a broader need for research on the motivations of all physician leaders. The grounded theory qualitative method used in this study could be replicated with physicians in a range of organizational structures and roles. These groups might include hospital administrators such as physician chief executive and chief medical officers, department chairs working in academic medical centers, and managing partners of single specialty medical practices. Medical leadership roles in clinical settings might also be compared with a cross section of physicians leading in other settings such as research organizations, ancillary medical services and the non-profit sector. Repeating this study with other physician leaders might provide the basis for a more comprehensive theoretical model, allowing the LSM construct to be generalized to other medical leader populations.

It is possible that wider research would show motivations to lead align more closely with organizational roles than with professional vocations, and that the LSM construct is unique to MPCC leaders. Research might also show that some motivational patterns are consistent across all physicians who lead while others are unique to physicians whose leadership roles support their ongoing active engagement in patient care; that certain specialties have a greater incidence of some motivational patterns than

others; or that the pace of change in a particular health care practice affects its medical leader's motivations. Such variations from the LSM construct could form the basis for hypotheses in future quantitative research.

Section summary. As a foundation for further studies of medical leaders' motivations, the LSM construct provides both a hypothesis that may be tested and a study methodology that may be repeated. More extensive research regarding leader motivation is needed within the realm of integrated practice units as well as throughout the universe of medical leader populations. A combination of qualitative and quantitative studies focused on physician motivations to lead would significantly enhance the knowledge base regarding this important field of study.

Conclusion

Although this study's implications for theory, practice, and research have been presented as separate discussions, the three are strongly interdependent. Theories of leader motivation provide the foundation for quantitative research to better understand diverse populations of medical leaders. Empirical research can validate these theories, creating the basis for best practices in recruiting, developing, and retaining medical leaders. Practical applications can provide valuable feedback to refine best practices and generate new research in the form of case studies about medical leaders. There is much to learn about why physicians lead, and much to consider as today's physicians develop into the medical leaders of tomorrow. Leader-stage motivation is a unique construct specific to medical leadership that provides a first step in the iterative process of building a body of knowledge about medical leaders' motivations.

The candid self-reflection of this study's twelve medical leaders should be useful for those readers committed to building a multidisciplinary prostate cancer clinic as they develop their own physician leaders. Discovering the intricate collection of internal needs, cognitions, and external events that transformed these twelve physicians into leaders may provide other readers with a new appreciation for motivation's importance and complexity. For the researcher, the most striking discovery was that a diverse group of doctors experienced so many similar motivations in their leadership journeys when they had just one thing in common: the desire to lead a MPCC that delivers the best care to prostate cancer patients. Precisely because this study's focus prevents its findings from being applied to other medical leaders, it underscores the need for ongoing research with physicians in different settings. In this era when medical leaders at all levels are a critical link in transforming the patient's health care experience there is no better time to ask the crucial question: what will motivate today's physicians to become tomorrow's leaders?

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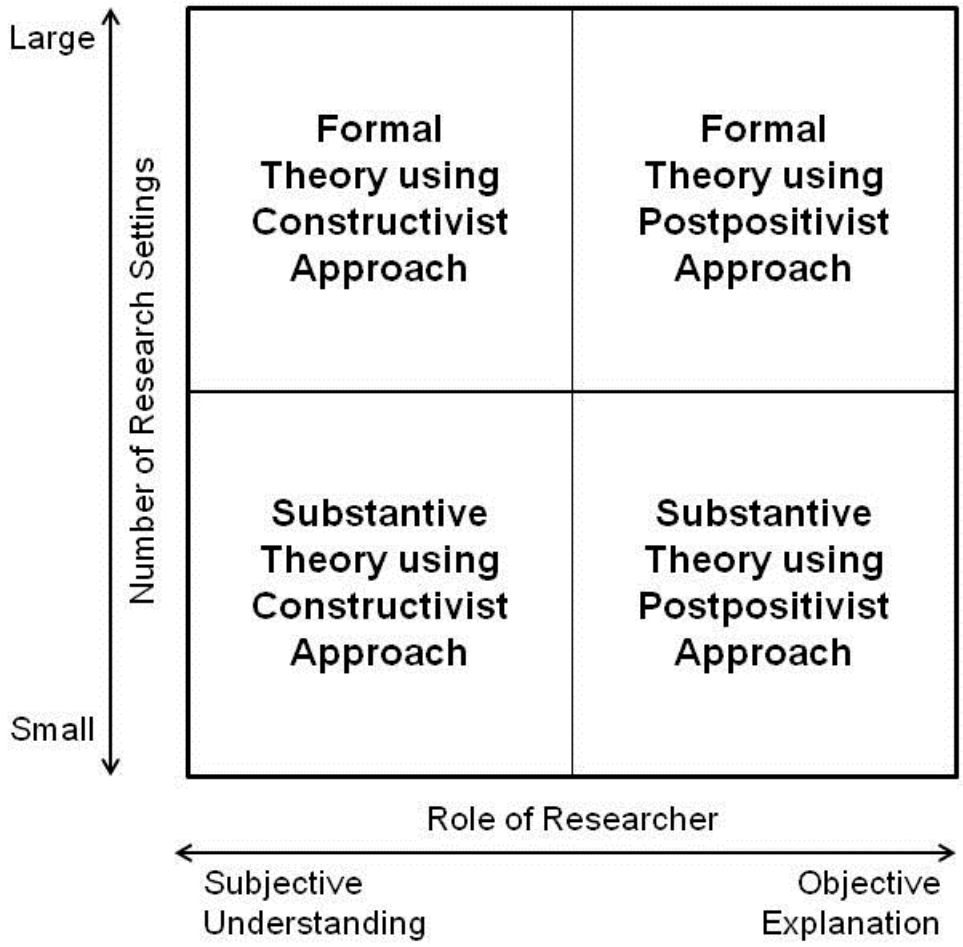
APPENDIX A

Grounded Theory Study Design Dimensions



APPENDIX B

Multidisciplinary Prostate and Genitourinary Cancer Clinics Identified by Researcher

	Sponsoring Organization	Geographic Location
1.	Beaumont Health System	Royal Oak, Michigan
2.	Boca Raton Regional Hospital	Boca Raton, Florida
3.	Boston Baskin Cancer Foundation	Germantown, Tennessee
4.	California Pacific Medical Center	San Francisco, California
5.	Christiana Care	Wilmington, Delaware
6.	Dana-Farber Cancer Institute	Boston, Massachusetts
7.	Duke University Medical Center	Durham, North Carolina
8.	Intermountain Healthcare	Salt Lake City, Utah
9.	Johns Hopkins Medicine	Baltimore, Maryland
10.	Kaiser Permanente	Santa Clara, California
11.	M.D. Anderson Cancer Center	Houston, Texas
12.	Madigan Army Medical Center	Tacoma, Washington
13.	Massachusetts General Hospital	Boston, Massachusetts
14.	North Shore-LIJ Health System	Lake Success, New York
15.	Oregon Health and Science University	Portland, Oregon
16.	Palo Alto Medical Foundation	Palo Alto, California
17.	Presbyterian Healthcare	Charlotte, North Carolina
18.	Rush University Medical Center	Chicago, Illinois
19.	Seattle Cancer Care Alliance	Seattle, Washington
20.	Stanford Hospital	Palo Alto, California
21.	Thomas Jefferson University Hospital	Philadelphia, Pennsylvania
22.	University of Alabama	Birmingham, Alabama
23.	University of Arizona	Phoenix, Arizona
24.	University of Michigan	Ann Arbor, Michigan
25.	University of North Carolina	Chapel Hill, North Carolina
26.	University of Texas	San Antonio, Texas
27.	Veterans Administration Health Care System	San Antonio, Texas
28.	Veterans Administration Health Care System	Miami, Florida
29.	Virginia Commonwealth University	Richmond, Virginia
30.	Walter Reed Army Medical Center	Washington, DC

Note: Some clinics may no longer be in operation

APPENDIX C

Participant Invitation Letter

Dear Dr. *(Insert Name)*:

You are invited to participate in a dissertation research project that is designed to study physician leaders, and their professional motivations. I am a doctoral candidate under the supervision of Kent Rhodes, Ed.D., a professor in the Organizational Leadership program at Pepperdine University. You were selected for this study because you have been a physician leader within a multidisciplinary cancer clinic that treats genitourinary patients.

Your participation in this study is completely voluntary. If you choose to participate, I will ask you to complete a one hour face-to-face or video interview. The interview will be audio recorded for transcription purposes only, and the recording will be destroyed after the transcription is complete. During the interview, you will be asked to answer questions that provide information about your leadership activities, and your motivations to lead.

Your identity and the name of your organization will be kept confidential at all times, and in all circumstances any research based on this interview is presented. The only foreseeable risk to your participation is the amount of time needed to complete the interview. You will be free to discontinue participation at any time, and to decline to answer any interview question I ask.

Although you may not directly benefit from this study, **the benefits to the medical profession may include a new framework for the development, recruitment, and retention of physician leaders involved in multidisciplinary cancer care**. Upon your request, I will provide you with a copy of your interview transcript, as well as any published papers, dissertations, or professional presentations that take place as a result of this interview.

Thank you for considering this request. If you are interested in learning more about participating in this study, **I encourage you to reply to this email, or contact me at** [redacted]. If you have any further questions regarding the study, you may also contact Dr. Kent Rhodes at [redacted].

Sincerely,

Lisa Perrine
Doctoral Candidate
Pepperdine University

[redacted]

APPENDIX D

Institutional Review Board Approval

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

July 16, 2012

[redacted]

Protocol #: E0712D03
Project Title: *Why Doctors Lead Multidisciplinary Prostate Cancer Clinics: A Grounded Theory Study of Leader Motivation*

Dear Ms. Perrine:

Thank you for submitting your application, *Why Doctors Lead Multidisciplinary Prostate Cancer Clinics: A Grounded Theory Study of Leader Motivation,* for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Kent Rhodes, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(2) states:

> (b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:
>
> **Category (2) of 45 CFR 46.101**, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact me. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,

Jean Kang, CIP
Manager, GPS IRB & Dissertation Support
Pepperdine University
Graduate School of Education & Psychology
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W: 310-568-5753
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cc: Dr. Lee Kats, Associate Provost for Research & Assistant Dean of Research, Seaver College
Ms. Alexandra Roosa, Director Research and Sponsored Programs
Dr. Yuying Tsong, Interim Chair, Graduate and Professional Schools IRB
Ms. Jean Kang, Manager, Graduate and Professional Schools IRB
Dr. Kent Rhodes
Ms. Christie Dailo

APPENDIX E

Consent for Research Study Form for Participants

Consent for Research Study
"Why doctors lead multidisciplinary prostate cancer clinics:
A grounded theory study of leader motivation"

I, _____, agree to participate in the research study being conducted by Lisa Perrine, a doctoral candidate under the direction of Dr. Kent Rhodes at Pepperdine University. I understand my participation in this study is strictly voluntary.

I have been asked to participate in a research project that is designed to study physician leaders and their professional motivations. The study will require one meeting of approximately one hour. I will be asked to answer questions that provide information about my leadership activities, and my motivations to lead. I have been asked to participate in this study because I am a physician who has acted in a leadership capacity within a multidisciplinary cancer clinic.

I understand that I will be recorded if I decide to participate in this study. The digital audio recordings will be used for research purposes only. These recordings will be transcribed, and destroyed after the transcriptions are complete. Electronic copies of the transcriptions will be stored in a locked commercial safe at the investigator's private residence, and will be destroyed after five years.

I understand that the potential risks of participating in this study are no greater than those encountered in daily life, or the performance of a routine physical or psychological examination or test. In the event that I experience boredom or fatigue, I understand a break will be provided at my request.

I understand there is no direct benefit from participation in this study, and that I will not be compensated for my participation. However, the benefits to my profession may include a new framework for the development, recruitment, and retention of physician leaders involved in multidisciplinary cancer care.

I understand that my refusal to participate in this study will involve no penalty or loss of benefits to which I am otherwise entitled. I also understand that I may discontinue participation at any time, without penalty or loss of benefits to which I am otherwise entitled, and that my withdrawal from the study would have no effect on my relationship with the investigator or Pepperdine University. I have the right to refuse to answer any question I choose not to answer.

I understand that no information gathered from my study participation will be released to others without my permission, or as required by law. I agree to permit the investigator to refer to me by a pseudonym from a "generic organization" when findings of this study are presented. I

understand my identity and the name of my organization will be kept confidential at all times, and in all circumstances any research based on this interview is presented. I understand that upon my request, the investigator will provide me with a copy of my interview transcript, as well as any published papers, dissertations, or professional presentations that take place as a result of this interview.

I understand that the data gathered from my study participation will be stored in a locked commercial safe at the investigator's private residence. The data will be maintained in a secure manner for 5 years at which time the data will be destroyed.

I understand that if I have any questions regarding the study procedures, I can contact Lisa Perrine at [redacted], or at [redacted], to get answers to my questions. If I have further questions, I may contact Dr. Kent Rhodes at 18111 Von Karman Avenue, Irvine, CA, 92612, or at [redacted]. If I have further questions about my rights as a research participant, I may contact Dr. Doug Leigh, Chairperson of the Institutional Review Board at Pepperdine University, at 6100 Center Drive, 5th Floor, Los Angeles, CA, 90045, or at [redacted].

I understand, to my satisfaction, the information in the consent form regarding my participation in the research project. All of my questions have been answered to my satisfaction. I have received a copy of this informed consent form which I have read and understand. I hereby consent to participate in the research described above.

_____

Participant's Signature Date

I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

_____

Principal Investigator's Signature Date

APPENDIX F

Core Interview Questions

1. Would you describe your leadership roles and responsibilities as they relate to this multidisciplinary cancer clinic?
2. What was your first leadership experience?
3. Will you tell me the story of how you became a leader in this multidisciplinary cancer clinic?
4. What attracts you to leadership today?
5. Did you have to give up anything you valued to become a medical leader?
6. How have your thoughts and feelings about leadership changed over time?
7. What future do you envision for yourself?
8. Is there anything else you'd like to share that occurred to you during our conversation?
9. If I had simply asked "what motivates you to lead?" how would you have answered?

APPENDIX G

Sample Leader Life Story

Category	Participant 3 Verbatim Quotes from Transcript
Clarifying Moment	I don't know if you're familiar at all with a man named [name] at [university] who does a lot of work with communication to patients about cancer diagnoses. That was a stepping stone to me. I heard him being interviewed on NPR when I was going through chemotherapy, and that's what got me started on pushing for a multidisciplinary prostate cancer clinic.
Living with Purpose	My interest in it and how I kind of got launched on it is I'm a breast cancer survivor and it's actually when I was undergoing treatment for my breast cancer three years ago that I became very interested in the delivery of care to cancer patients. Being on the other side of the medical team was a very eye-opening experience and that's what kind of got me interested in it, and it happened to dovetail with our medical center really ramping up.
Setting Goals	Historically surgeons tend to be biased toward surgery and I particularly felt that within my department, as I think is probably typical of most urology groups, patients weren't necessarily being given a fair presentation of what all their options were. And an advantage of the multidisciplinary clinic's patients getting more balanced presentation of what their options are and by doing it the way we've done it it's a very standardized presentation that everyone's basically hearing the same information.
Finding Flow	We're in the process of getting accreditation to be a comprehensive cancer care center, and I became the urology person representing our department on that committee, and so all of it kind of goes together. And as a side thing we're just about to go live with an innovation project that I developed to monitor patients with prostate cancer.
Being Best	I'm hoping to get some of the projects I've been working on implemented across the region. And in that sense I'm willing to take that step in terms of the monitoring, or in terms of trying to implement multidisciplinary clinics. But outside of this, I don't know, I'm still very happy to leave leadership to people who seem to manage their time better than I do.
Balancing Time	Both of us spend a lot of time at home working. My son is now 14 and finally getting to an age where he's got a lot of stuff that he wants to spend his own time doing, and I think he's finally transitioning to respecting the time and energy I put into my job. But it's definitely been difficult to balance the two.
Being Mentored	The two things that definitely got me to kind of step out of the behind-the-scenes work I was doing was my illness and my husband, who's taken a lot of leadership roles himself. He's a [hospital] physician – it's a second marriage for both of us – and he's one of the few [specialists] in the region.
Believing in Self	And he kind of has made me realize that I have a lot to offer, and so it's been a combination those two have given me the confidence to do it.
Changing Course	The other thing that I am very passionate about is end-of-life care, and being much more open with patients of what their options are. For a brief period of time I even considered branching out into palliative care, but then that didn't seem so feasible. But I'm so happy that that's a growing specialty because I feel sometimes, because we can do so many things for people, too many physicians think it's easier to just do things rather than the have lengthy discussions with families and patients about the fact that just because we have the ability, it doesn't mean we should be doing everything for everybody.
Limiting Power	I don't mind doing limited stuff, but there are definitely people who really, really like the power of the leadership roles, and that's just not my style.
Enjoying Collegiality	We've gotten so busy, and the medical center's gotten so big, and there's so much electronic communication that opportunities for live interaction have become less and less. And I love being in another department working with colleagues who I do enjoy and respect. So it's that aspect, the patient aspect and the collegial aspect.