How Knowledge of Accountable Care Organization Requirements Impact Ability to Meet Patients Needs in Southern California-based ACOs

Debra Moysychyn

Brandman University, moysychyn@mail.brandman.edu

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The Physician’s Perspective:

How Knowledge of Accountable Care Organization Requirements Impact Ability to Meet Patients Needs in Southern California-based ACOs

A Dissertation by
Debra Moysychyn

Brandman University
Irvine, California
School of Education
Submitted in partial fulfillment of the requirements for the degree of Doctor of Education in Organizational Leadership
April 2016

Committee in charge:
Walter Buster, Ed.D., Committee Chair
Michelle Neal, Ph.D.
Daniel Cusator, M.D., M.B.A.
Chapman University System

Doctor of Education in Organizational Leadership

The dissertation of Debra Moysychyn is approved.

Walter Buster, Ed.D., Dissertation Chair

Michelle Neal, Ph.D., Committee Member

Daniel Cusator, M.D., M.B.A., Committee Member

Patricia Clark-White, Ed.D., Associate Dean

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The Physician’s Perspective: How Knowledge of Accountable Care Organization Requirements Impact Ability to Meet Patients Needs in Southern California-based ACOs

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DEDICATION

To the memory of my father, John Bozanic, who taught me the importance of education and duct tape. Dad, I love you.
ABSTRACT

The Physician’s Perspective: How Knowledge of Accountable Care Organization Requirements Impact Ability to Meet Patients Needs in Southern California-based ACOs

by Debra Moysychyn

In 2010, President Obama signed into law comprehensive healthcare reform in the United States. The Patient Protection and Affordable Care Act (ACA), was designed to provide medical benefits to 4.3 million uninsured Americans and reduce healthcare expenditures while improving quality of care and patient outcomes. The law included the creation of the accountable care organization (ACO), a healthcare delivery and financial model with physicians having a significant and central role in the success or failure of the ACO model. The current study explored the physician’s level of knowledge about the ACO model’s Triple Aim goals and performance measures, and how the ACO requirements affected their ability to meet patient needs. The study employed a quantitative research design using original data collected through an electronic survey from a sample of physicians in southern California ACOs. Analyses of the data identified a gap in knowledge of the Triple Aim goals, quality performance domains, and aspects of performance indicators of the current ACO model. The physician perspective also illuminated the competing goals of delivering care while reducing costs under the model’s current design. Findings showed most aspects of the ACO requirements had a slightly positive impact on the physicians’ ability to meet patient needs inside southern California-based ACOs. The physician perspective also illuminated competing goals for delivering care while reducing costs under the model’s current design. Concluded by this study, improvements are needed in education and professional training to (1) close the
knowledge gap among physicians, (2) implement the tenets of systems thinking, (3) outsource technology, (4) let physicians clinical experts, and (5) shift the ACO culture to a learning organization.
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CHAPTER I: INTRODUCTION

Controlling skyrocketing healthcare expenditures requires an understanding of the cost drivers before characterizing practical solutions for cost containment. Primary cost drivers include innovative drugs, medical devices, technology, and new ways to apply these through a fragmented and disorganized system (Kumar, Ghildayal, & Shah, 2011; Lee, 2010; Norbeck, 2013; Thomasian, 2014). Staggering costs associated with unlimited, uncapped medical malpractice litigation were originally thought to be a contributing factor to escalating healthcare costs (Employment Policy Foundation, 2004). However, studies refuted malpractice as a driver of cost and rather, the driver of costs were the numerous tests performed as defensive medicine (Johns Hopkins Medicine, 2013); malpractice payouts exceeding $1 million summed to $1.4 billion a year, which accounted for less than 1% of healthcare spending annually.

Adding to the increasing costs is an aging population with multiple chronic ailments and complicated conditions who visit a variety of physicians and utilize a multitude of services across organizations (Lee, 2010). “Physicians are the linchpins of the U.S. healthcare system because their clinical decisions affect how up to 90% of every healthcare dollar is spent” (Boukus, Cassil, & O'Malley, 2009, p. 1). The 2012 budget from President Obama stated that “healthcare costs are the single biggest driver of our long-term fiscal problems” (Office of Management and Budget, 2012, p. 4). The conflict between commitment to quality of care and cost containment created a serious social dilemma for the physicians (Lee, 2010; Ulrich & Grady, 2004).

One of the most significant comprehensive changes in United States (US) healthcare reform was the Patient Protection and Affordable Care Act (PPACA or ACA),
which included the creation of the accountable care organization (ACO). At its core, the ACO was designed as a healthcare delivery system that aligned fiscal interests with effective and quality care for a specific group of patients (Berwick, Nolan, & Whittington, 2008; Burns & Pauly, 2012; Centers for Medicare & Medicaid Services [CMS], 2015; Hacker & Walker, 2013; McClellan, White, Kocot, & Mostashari, 2014; Shortell, Wu, Lewis, Colla, & Fisher, 2014). The goal of the ACO, formed under CMS guidelines, was a continuum of care by healthcare providers that delivered better care for individuals, better health for the group, and lower costs, or Triple Aim (Larson et al., 2011; Wang & Maniccia, 2013). Triple Aim was an approach to optimizing health system performance. Through a developed framework, the belief that new designs must be developed to simultaneously pursue three dimensions consisting of (1) improving the patient experience of care (including quality and satisfaction); (2) improving the health of populations; and (3) reducing the per capita cost of healthcare (Institute for Healthcare Improvement [IHI], 2014). Still, the simultaneous pursuit of these Triple Aim goals could be barriers to integrated healthcare (Berwick et al., 2008). As physicians delivered patient services, they must know and understand the goals of the ACO to support and implement this new payment and delivery model of healthcare reform (Berwick et al., 2008, Fisher, Shortell, Kreindler, Van Critters, & Larson, 2012).

Recent survey results of practicing physicians depicted mixed opinion about the ACA and the impact on patients. One survey of 613 physicians revealed 44% of physicians believed the ACA was a “good start,” “38% felt it was a “step in the wrong direction,” and 18% remained undecided or marked “don’t know” (Deloitte Center for Health Solutions, 2013). The Thomson Reuters survey in 2011 showed over half (58%)
of 2,958 responding physicians believed the ACA would have a negative impact on patients, while 27% thought it would have a positive impact, and 15% remained neutral. Additionally, 45% of physicians did not know what an ACO was in 2011 (Thomson Reuters, 2011), whereas in 2012, 1 in 3 (33%) were familiar with ACOs (Deloitte Center for Health Solutions, 2013).

With the ACO at the center of the ACA (CMS, 2011), the success, or failure, of the model would have implications nationwide, especially for patients who relied on the ACOs for their medical care. As a newly enacted law and implementation of the ACOs in their infancy, little research was conducted thus far that examined physicians’ knowledge about the ACO goals and performance measures, or how working to meet those goals and measures affected their ability to meet patient needs.

### Background

The following section provides background information relevant to the focus of the study. Key concepts include the history of US healthcare reform, accountable care organizations, the role of the physician within ACOs, and preliminary findings of ACO outcomes and challenges.

**History of US Healthcare Reform**

For the past 75 years, Americans tried to reform the healthcare system through a variety of methods (Parks, 2012). Gaining access to quality health services while simultaneously improving care and bending the cost curve was a challenge (Berwick et al., 2008), with some reform efforts aimed at improved quality of care and others focused on cost containment (Faguet, 2013; Niles, 2011; Parks, 2012; Sultz & Young, 1999).
The US healthcare system began with general or family practice physicians who were mostly self-employed and operated solo practices (Niles, 2011; Parks, 2012). Patients were responsible for payment on a fee-for-service basis. The first extensive reform in healthcare started in the 19th century when large US employers provided medical services to their personnel by offering company doctors; this resulted in a change to the payment structure as employers covered the costs of basic medical care for employees (Niles, 2011; Sultz & Young, 1999). The next major change in reform was the introduction of national group health insurance in the 1930s, which also changed the physician-patient relationship; moving away from paternalistic, physician-dominated decisions toward mutual participation with shared-decision-making between the physician and the patient (Kaba & Sooriakumaran, 2007). In the 1960s, the government became involved in the healthcare system with the launch of service innovation and provider networks through government-sponsored programs, such as Medicare and Medicaid. This fueled philosophical and political differences between practitioners and the government on healthcare reform and policy (Parks, 2012). Financial risk-sharing and loss of autonomy in decision-making impacted health delivery as physicians were subjected to parameters, accountability, and evaluations by insurance company and government involvement (Flower, 2012; Sultz & Young, 1999). An alternative to socialized medicine, the Health Maintenance Organization (HMO) saw rapid growth in popularity as result of the HMO Act passed in 1973 (Markovich, 2003).

With ongoing challenges related to quality of care and cost containment, the HMO was introduced in the 1980s as an effort to address escalating costs. The earliest form of HMOs provided managed care on a prepaid basis, which aimed to control costs
by limiting access to physicians and through denial or downgraded care (Niles, 2011). The trend toward commercialization in the 1980s had HMOs contracting with providers through limited-risk contracts and fixed payment per member per month, evolving into full-risk contracting that placed the burden of cost management on the provider group (Markovich, 2003). In addition, the government developed protective healthcare payment guidelines to control insurance reimbursement costs related to treatments. During the 1990s, diagnosis related groups (DRGs), the Consolidated Omnibus Budget Reconciliation Act (COBRA), the Family Medical Leave Act (FMLA), and the Uniformed Services Employment and Reemployment Rights Act (USERRA) were all designed to either offer health insurance protection, provide access to healthcare, or propose fixed pricing (Kaiser Family Foundation, n.d.; Niles, 2011; Parks, 2012). The government proposed a modification in the 1990s that moved toward universal healthcare, but the efforts were unsuccessful. Market changes, competition, and privately organized managed care organizations emerged to supersede government-sponsored modification (Ethridge, Jones, & Lewin, 1996; Flower, 2012). Although government-initiated healthcare reform programs experienced failure, the goals of increased access, high-quality care, and cost containment remained the focus of modernization by the government and private sectors.

The ACA, also referred to as Obamacare, was the most recent, ambitious attempt to reform escalating healthcare costs. This comprehensive piece of legislation provided uninsured or underinsured populations access to quality healthcare. In addition to provisions that expanded coverage, the ACA attempted to improve the fragmentation of the healthcare delivery system. At the ACA was the concept of the ACO. ACOs were
envisioned as a group of providers jointly held accountable for achieving cost reductions and maintaining quality of care for a patient population (Colla, Lewis, Shortell, & Fisher, 2014; Hacker & Walker, 2013; Longworth, 2011; McClellan, McKethan, Lewis, Roski, & Fisher, 2010). “The ACO represents an integrated strategy at the delivery system-level to respond to payment reform” (Hacker & Walker, 2013, p. e1). The ACO was a team approach with uniformed governance that assumed risk for quality and total cost of care delivered with the goal to increase efficiency and reduce costs and fragmentation while improving quality of care and patient experiences (Burns & Pauly, 2012). This fundamental shift to value-based healthcare required all stakeholders in the healthcare system to reconsider the delivery model to improve the quality of care for patients in a sustainable way (Larson et al., 2011).

Value in healthcare was defined as outcomes related to costs and encompassed efficiencies (Budryk, 2014a). Previous efforts to improve the quality healthcare focused on individual patient clinical care (Block, 2014). Berwick et al. (2008) proposed high-value healthcare would not be achieved unless improvement initiatives pursued a broader system of linked goals. Further, the three linked goals of Triple Aim were not independent of each other, rather interdependent (Berwick et al., 2008; IHI, 2014).

**Accountable Care Organizations**

Authorized by the ACA, the concept of ACOs emerged as a healthcare organization providing a payment and delivery model that coordinated services across primary care physicians, specialists, and hospitals. The overarching goal was to work collaboratively and accept accountability for costs and efficiencies while providing a continuum of care to a defined group of patients (Carlazzo et al., 2012; Fisher & Shortell,
The specific goals of the ACO were defined by the IHI (2014) as Triple Aim, the simultaneous objectives of (1) improved experience of care for patients, (2) better health for a patient population, and (3) lowered per capita costs.

ACOs were also designed to reshape healthcare delivery at administrative and financial levels. The size, structure, and organizational relationships of ACO providers, consisting of primary and specialty care physicians and at least one hospital, influenced the clinical and financial performance of the organizations. In the Medicare Shared Savings model (MSSP) the providers, as a whole, were accountable for patient care and shared in cost savings realized through quality improvements and cost efficiencies (Colla et al., 2014; Dupree et al., 2014). Other models, like the Pioneer ACO, had full-risk and participated in shared savings if they met, or exceeded, benchmark measures (Burke, 2011; Fisher et al., 2012; Longworth, 2011).

The ACA defined specific requirements for an ACO (Mahoney, Naas, & Rankin, 2014). Four ACO programs were initially developed; the CMS established and launched three ACO programs (the Pioneer ACO model, the MSSP, and the Advanced Payment ACO model) and the private sector launched its own ACO program, the Private Payer Model (CMS, n.d.). Medicare further defined additional models to address the diversity of medical practices that could potentially qualify as an ACO: integrated delivery system (IDS), multi-specialty group practice (MSGP), physician-hospital organization (PHO), and the independent practice association (IPA; Shortell, 2010). Regardless of the specific ACO model, qualifications for ACO accreditation included initial eligibility requirements of: (1) service to at least 5,000 Medicare patients, (2) a patient-centered foundation of
primary care providers, (3) a legal infrastructure to receive and disperse savings, (4) promotion of evidence-based medicine, (5) participation in quality data monitoring and transparent reporting, and (6) shared governance across providers (Medicare Program, 2012). An accredited ACO was also required to engage in a minimum three-year agreement with CMS (CMS, 2011). Further, to share in savings created by the entity, each year the ACO must demonstrate minimum performance as determined by specific quality measures in four areas: (1) patient and caregiver experience, (2) care coordination and safety, (3) identification of specific at-risk patient groups, and (4) preventative care measures (Koury et al., 2014). Through these measures, ACOs were expected to improve care while reducing costs.

ACOs took shape all over the country in a variety of formations. California had a healthcare landscape that provided a unique opportunity to shape ACO design (Grossman, Tu, & Cross, 2013). The dynamic landscape of California healthcare shifted from indemnity insurance with open networks, to capitation, a payment arrangement for a specific scope of services, and back to consumer-driven health plans (Berstein, Frohlich, LaPallo, Patel, & Thompson, 2011). Large physician organizations experienced in financial risk for patient care, together with competitive market factors from insurers and other providers, like Kaiser Permanente Health Plan, drove an interest in alternatives (Grossman et al., 2013; Markovich, 2012). The delegated model expanded in the 1990s as physician groups and hospitals assumed partial or full risk (Berstein et al., 2011). Cross-sector collaborations, also described as Narrow-Network ACOs, integrated existing insurance products and combined payment changes and limited-network ACOs (Grossman et al., 2013; Zusman et al., 2014). According to Markovich (2012), data
suggested the acceptance of partnerships with a global budget approach yielded savings and improvements by bringing providers and payers together for better coordinated care.

**The Role of the Physician within the ACO**

The ACA required the physician to be at the core of an ACO (CMS, 2011). ACOs comprised of physician assistants, advanced practice nurses, and other non-physicians focused on preventive care, permitting the physicians to focus on complex clinical problems. The move to ACOs had physicians and other providers taking an active, integrative role toward value-based healthcare spending to improve care while controlling costs (Epstein et al., 2014; Koury et al., 2014). An increase in provider mergers since implementation of ACOs created entities that were clinically stronger and financially more stable while providing management expertise and leveraging information technology (Budryk, 2014b; Valentine, 2014). This consolidation trend to larger entities differed from independent or small groups of practitioners in past years, which also altered the physician’s degree of autonomy, clinical routines, working environment, and income (Kreindler et al., 2012).

Highlighting the importance of the role of the physician was the ACO requirement of at least 75% provider-control, dictating significant physician input at the start. A recent study revealed 51% of public and private ACOs were physician-led through practice management organizations or non-profit community companies (Colla et al., 2014). However, Bush (2014) noted, “an ACO requires extensive management, technical resources and granular insight into, and analysis of, patient data. Many of these requirements are beyond the realm (or interest) of your average physician” (p. 28). The ACO shift in organizational management had independent physicians migrate to hospitals
and large health systems for employment, an avenue they viewed as their only way into the shared savings model. This rampant physician employment trend not only reduced patient choice in healthcare, it also drove up cost—the very opposite of the intended effect of ACOs as hospital practices were inherently more expensive to operate (Bush, 2014).

Data showed that physician leadership was important during the pilot phase of ACO implementation (Colla et al., 2014). Physicians took active roles as members of the required governing boards and as organization owners, with 58% of all ACOs reporting “extensive and active involvement of clinicians in ACO discussion and decision-making” (Colla et al., 2014, p. 967).

In 2010 as ACO implementation began, physicians realized the need for health education and self-management among healthy patients, whereas those patients with chronic or complex illnesses required a more concerted team approach (Feder, 2011). Insights from early ACO adopters further suggested numerous uncertainties in moving forward in different organizational and local situations (Burns & Pauly, 2012; Feder, 2011; Larson et al., 2011). To flourish in the hypercompetitive care delivery markets, Sokolov (2013) asserted that physician- and non-physician leaders needed to know and understand the governance, management, and operations of the ACO. Therefore, additional research is needed to understand physician knowledge of the current ACO model and how ACO requirements impact the physicians’ ability to meet patient needs.

**Preliminary Findings on ACO Outcomes and Challenges**

Expansion and transition to ACOs affected patients, healthcare providers, and other healthcare stakeholders. Success of the ACO model was based on three components: collaboration of healthcare providers, patient engagement, and achievable
transition plans by organization management (Larson et al., 2011; Shortell, 2010; Shortell, Wu, Lewis, Colla, & Fisher, 2014). In 2013, CMS reported shared savings in 13 of the 32 pioneer ACOs, which resulted in $147 million in shared savings. However, such results were not universal to all ACOs, and some large health organizations opted out of the ACO model (Colla et al., 2014; Mahoney et al., 2014; McClellan, White, Kocot, & Mostashari, 2014). In addition to financial results, researchers reported preliminary outcomes in the areas of ACO leadership, organizational structure, capabilities, monitoring, and reporting (Colla et al., 2014; Koury et al., 2014; McClellan et al., 2014).

**Statement of the Research Problem**

Analyses of data from 1965 to 2010 supported the position that increased healthcare spending negatively affected the overall economy (Kaiser Family Foundation, 2013). A variety of efforts to curb healthcare costs were attempted, but no model proved to be sustainable (Niles, 2011; Parks, 2012; Sultz & Young, 1999). In 2010, the most significant regulatory overhaul in healthcare since 1965 was enacted when the ACA was signed into law (Rosenbaum, 2011).

The ACA emerged from an 87-page white paper penned by an insurance company vice president, Liz Fowler (Murray, 2012; Patient-Centered Primary Care Collaborative, 2014). Fowler, chief health counsel for Max Baucus, Chairman of the Senate Committee on Finance, spearheaded the committee’s healthcare team. Baucus championed the proposed restructuring and, together with ranking member Chuck Grassley, hosted bipartisan healthcare roundtables with policy and industry expert contribution laying the principle foundation for the legislation. Input came from pharmaceutical groups,
insurance companies, hospital maintenance organizations, and hospital management companies (Blumenthal & Dixon, 2012). However, one group missing from the conversation was the practicing physicians who could provide an operational perspective of what was necessary to meet the challenges of quality of care, access to care, care coordination, and patient outcomes.

The ACA, with ACOs at the center, aimed to reduce costs while improving the quality of care. According to Koury et al. (2014), “CMS is currently looking for valuable feedback on the ACO implementation process” (p. 48). Early ACO adoption could provide healthcare organizations the ability to influence the future of healthcare reform. Initial research focused on the overarching accountable care model, but little has been done to investigate the physician’s knowledge of the Triple Aim goals of the ACO model and its associated performance measures. To adjust the ACO model for future success, healthcare administrators must better understand the gap in physician knowledge and how ACO requirements impact the quality of patient care from the physician perspective.

Purpose Statement

The primary purpose of this quantitative study was to identify how knowledgeable physicians were about the Triple Aim goals and performance measures of the ACO model. A secondary goal was to assess their perceptions of the impact of ACO requirements on their ability to meet patient needs inside southern California-based ACOs.
Research Questions

The following research questions provided a framework to guide this study:

1. To what extent are ACO physicians knowledgeable about the Triple Aim goals of an ACO?

2. To what extent are ACO physicians knowledgeable about the performance measures of an ACO?

3. To what degree do physicians perceive that the Triple Aim goals and aspects of the performance measures affected their ability to meet patient needs?

Significance of the Study

One of the most significant changes in healthcare reform was the creation of the accountable care organization (ACO). At its core, the ACO was designed as a healthcare delivery system that aligned fiscal interests with effective and quality care for a specific group of patients. The Triple Aim goals of an ACO were to deliver better care for individuals, better health for the group, and lower costs (Larson et al., 2011; Wang & Maniccia, 2013).

Physicians who opted into an ACO were guided by the goals and performance requirements defined by ancillary stakeholders. Too often, operating decisions were made with little acknowledgement to those affected by the outcomes (Anderson & Ackerman-Anderson, 2010). As a relatively new endeavor, little research existed about how the goals and performance measures of the ACOs affected patient care. In recent findings, Fisher et al. (2012) stated the need for additional information through data collection strategies that included:
Qualitative evaluations, such as case studies, and quantitative evaluations, such as surveys; and obtaining aggregate performance data at the ACO and the local health market levels. More data about the attributes of the ACOs and which programs [physicians] are participating in would support diverse and valuable studies, such as comparisons between [MSSP] and the Pioneer ACO Program, between ACOs with registries and those without, and between organizations that are led by physicians and those led by hospitals. We could then learn not only whether ACOs, on average, do better than other payment models, but also when, where and how ACOs form and achieve their impact. (pp. 2375-2376)

From their national survey of ACOs, Colla et al. (2014) also concluded further research was needed to explore the evolution of ACOs, the impact on patient health and costs, and whether outcomes varied across the different organizational structures of ACOs. Furthermore, Shortell, McClellan et al. (2014) emphasized the need to understand ACOs, recognize the drivers of success or failure, and identify areas for which they needed additional guidance because they were new organizations.

This study contributed to healthcare policy research by offering physician insights on practicing medicine that could assist healthcare administrators to evolve the ACO model and its implementation at a clinical level. By identifying physicians’ levels of knowledge about the ACO Triple Aim goals and performance measures, healthcare administrators can better understand the gaps in physician knowledge and offer training to ensure physicians are best able to implement critical components of the ACO model. Additionally, by identifying physicians’ perceived impact of the ACO model on patient
needs, healthcare administrators gain critical information to evolve a model that aligns with the physician perspective. The information gleaned from this study could equip healthcare administrators to propose change initiatives for continual adaptation and improvement of the ACO model and its implementation.

**Definitions**

**Advanced Payment ACO** – “Ongoing selected organizations that can receive Federal ‘upfront payments’ and monthly payments to build care coordination infrastructure while participating in a Federal ACO” (Mahoney et al., 2014, p. 5)

**Accountable Care Organization (ACO)** – “A payment and delivery model in which care providers meet quality metrics, redesign care for efficiency and quality, coordinate individuals’ care across settings, and share in potential financial savings resulting from the outcomes of such redesigned care” (Mahoney et al., 2014, p. 5).

**Allopathic Physicians (MDs)** – A medical professional trained to diagnose and treat illnesses and disorders, and provide preventive care by using methods aimed to produce effects that counteract the problem.


**Clinically Integrated Organization** – The means to facilitate the coordination of patient care across conditions, providers, settings, and time to achieve care that is safe, timely, effective, efficient, equitable, and patient-focused.
Commercial Health Plan ACO – Clinically integrated networks of healthcare providers that receive reimbursement from commercial payers or self-insured employers on a “shared savings” basis.

Foundation Model – A health maintenance organization or other health system that was legally established as a tax-exempt, not-for-profit corporation organized to operate as a charitable institution.

Healthcare Provider(s) – A provider of medical or health services including but not limited to primary care physicians, nurses, physician assistants, nurse practitioners, specialists, hospitals, and other facilities that furnish, bill, or are paid for healthcare.

Independent Practice Associations (IPAs) – An IPA consists of a network of physicians who jointly contract with health maintenance organizations (HMOs) and other organized care plans. The IPA provides a corporate structure through which HMO contracts can be negotiated and administered (Shortell, 2010).

Integrated Delivery Systems (IDS) – The IDS model established networks to provide coordinated care to a population. The networks were “accountable for the outcomes and health status of the group of patients served. They may be established through direct ownership or through contractual alliances and partnership” (Shortell, 2010, p. 16).

Medicare Shared Savings Program (MSSP) – “Ongoing federal Medicare ACO payment model for fee-for-service Medicare patients with less risk than the Pioneer program” (Mahoney et al., 2014, p. 5)
Multi-Specialty Group Practice (MSGP) – An organization providing care from physicians in multiple specialties. They may be owned either by physicians or by a hospital and other entities (Shortell, 2010, p. 17).

Next Generation or NextGen ACO – An initiative for ACOs experienced in coordinating care for populations of patients that will allow these provider groups to assume higher levels of financial risk and reward than available under the current Pioneer and MSSP models.

Osteopathic Physician (DO) – A medical professional fully licensed and trained to diagnose and treat illnesses and disorders, and provide preventive care with additional training in complementary and alternative therapies.

Physician-Hospital Organization (PHO) – PHOs represent jointly owned hospital organizations that include a portion of the medical staff. “PHOs typically include medical staff members whose economic interests are most aligned with the hospital’s and who can provide the hospital with sufficient geographic coverage for health plan contracting” (Shortell, 2010, p. 17).

Pioneer ACO – Ongoing federal Medicare ACO shared-risk payment model for organizations experienced in coordinating care across the continuum and multiple care settings (Mahoney et al., 2014, p. 5).


Patient Protection Affordable Care Act (PPACA or ACA) – A US federal statute signed into law by President Barack Obama on March 23, 2010. The ACA put in place comprehensive health insurance reforms intended to improved access, affordability,
and quality in health care for Americans (US Department of Health & Human Services, n.d.).

**Triple Aim** - The simultaneous objective of improving individual experience of care, improving health of patient groups (populations), and reducing the per capita cost of healthcare.

**Delimitations**

This study was delimited to licensed California physicians working at one of two healthcare organizations Monarch HealthCare, Inc. and Accountable Clinical Care Services - Orange. It was further delimited to physicians currently practicing clinical medicine as their primary profession (as opposed to administration or research).

**Organization of the Study**

Chapter I introduced the study, providing the foundational background, purpose, significance of the study, and definitions of terms. Chapter II reviews the relevant literature, including a summary of the history of healthcare in the US, the history and implementation of ACOs, and the importance of physicians in the ACO model. Chapter III describes the methodology used to conduct this study, including the population and sample, research design, instrument, data collection procedures, and data analysis. Chapter IV presents the findings related to physician knowledge of the Triple Aim goals and performance measures, as well as physician perceptions of the impact of ACO requirements on their ability to meet patient needs. Chapter V presents a summary of the findings, conclusions, implications for changes in ACO implementation based on the findings, and recommendations for future research.
CHAPTER II: REVIEW OF THE LITERATURE

The longtime need for healthcare reform in the United States (US) stirred philosophical and political debate, especially as healthcare spending escalated in a system plagued with problems (Flower, 2012; Parks, 2012; Sultz & Young, 1999). Despite achievements and advancements, the US healthcare system exposed a contentious backdrop between physicians and policymakers with misaligned objectives, variations in patient outcomes, systemic inefficiencies, fiscal redundancies, and troubled relationships in both public and government entities (Sultz & Young, 1999).

Physicians remain the linchpin to patient care and clinical decisions (Flower, 2012), and “the gate keepers that control the demand side of healthcare economy” (Kumar et al., 2011, p. 376). The concept of the Accountable Care Organization (ACO), as a group of healthcare providers jointly held accountable for the total cost while achieving cost reductions and maintaining quality of care through measured improvements, was at the core of healthcare reform efforts designed to reshape healthcare delivery (Colla et al., 2014; Hacker & Walker, 2013; Longworth, 2011; McClellan et al., 2010). Findings from early ACO adopters, slowly becoming available, focused on fiscal impact and the patient experience; yet little was known from the physician’s viewpoint (Stock, Hall, Chang, & Cohen, 2015). Healthcare administrators would benefit from a research-based study to understand the physician’s perspective of ACO implementation at a clinical level as the ACO model relies on physicians to deliver quality care while maintaining a vision for cost savings. The current study sought to fill this gap by providing research about the physicians’ knowledge of the ACO model and the impact of
ACO requirements on their ability to meet patient needs inside southern California-based ACOs.

This chapter presents a review of literature relevant to the study. It begins with a synopsis of key healthcare reform events in the US relevant to this study, presenting the historical foundation that led to the Patient Protection Affordable Care Act (PPACA or ACA) in 2010. The literature review also examines ACOs, the role of the physician within the ACO, preliminary findings of ACO implementation, and the next generation of the ACO model.

The History of Healthcare Reform

A century ago, medicine was primitive and inexpensive compared to current standards; sick people either lived or died (Allen, 2012). For the past 75 years, Americans tried to reform the healthcare system through a variety of methods (Parks, 2012). US government leaders strived to provide healthcare to the American people through insurance plans since 1912 (Sultz & Young, 1999). People coveted the ability to access the post-World War II medical breakthroughs while having the capability to pay for the advanced medical treatments over time. Group health insurance originated in 1929 at Baylor Hospital as newly introduced pre-paid plans became the precursor of Blue Cross plans (Kaiser Family Foundation, n.d.). Private and public insurance began their growth spurt in 1934 by selling policies against hospital costs (Parks, 2012). Blue Cross and Blue Shield enrollments increased nationally from 6 to 19 million subscribers across 80 operating plans and the government-based Veterans Administration managed the returning military and their dependents (Parks, 2012).
Advancing health reform, the Roosevelt administration explored national compulsory healthcare insurance (Wall Street Journal, n.d.). The proposed pieces of legislation died in committee; however, they outlined health benefits to most employees and dependents that included doctor services, hospitalization, medications, and diagnostics. The bill detailed the employer and employee contributions to cover costs. Although the compulsory healthcare legislation failed, President Roosevelt enacted the Social Security Act of 1935, which included grants for maternal and child health (Cass, 2012; Wall Street Journal, n.d.).

President Roosevelt, through the War Labor Board, also sanctioned wage and price controls during World War II that did not include fringe benefits offered to employees. Competing for employees, companies attracted workers through benefits to compensate for the government wage constraints, including health insurance benefits, which grew into a workplace perk (Allen, 2012; Cass, 2012; Kaiser Family Foundation, n.d.). This was the first instance of employers providing healthcare benefits to employees, and a reform measure driven by companies.

Congress developed a national insurance program in 1943 at the request of President Truman. The Wagner-Murray-Dingell legislation introduced “provisions for universal comprehensive insurance” (Kaiser Family Foundation, n.d., p. 5). The American Federation of Labor – Congress of Industrial Organizations and the United Auto Workers supported the proposed bill; however, the American Medical Association (AMA) denounced the bill as “socialized medicine” and it failed to gain momentum (Cass, 2012; Kaiser Family Foundation, n.d.).
According to Niles (2011), “by 1950, 57% of the population had hospital insurance” (p. 9). Employer-backed insurance policies provided many working Americans adequate health insurance (Allen, 2012). To expand private insurance coverage to broader groups, President Eisenhower proposed the reinsurance fund in 1954, which failed (Kaiser Family Foundation, n.d.). “The Revenue Act of 1954 excluded employer contributions to health plans from taxable income, creating further incentives for employer-based insurance” (Wall Street Journal, n.d., p. 6). Private insurance was available to those who could afford it and welfare was available to those who could not, including the poor and the elderly. “By the mid-1950s about two-thirds of Americans were insured by private for-profit and nonprofit companies” (Parks, 2012, p. 4).

**Healthcare Reform since Medicare (after 1965)**

Two landmark health programs were signed into public law by President Johnson in 1965, Medicare and Medicaid, providing healthcare insurance benefits to the elderly and impoverished (Kaiser Family Foundation, n.d.). Hired by the government, oversight of the Medicare program was the responsibility of Blue Cross and Blue Shield (Parks, 2012). Although individual states provided administrative management of Medicaid, they too turned to Blue Cross and Blue Shield for support. Physicians considered this the first steps toward socialized medicine as patients lost their right to choose their doctor (Parks, 2012).

Soaring inflation, an economic recession, and unbridled healthcare costs during the 1970s provided the backdrop for competing health insurance proposals by Senator Ted Kennedy and President Nixon (Kaiser Family Foundation, n.d.). The HMO Act, a precursor to managed care, and the Comprehensive Health Insurance Plan Act were

Healthcare costs experienced exponential growth between 1967 and 1981, going from $50.7 billion to an estimated $287 billion (Gibson & Waldo, 1982; Rice & Cooper, 1969). As a result, cost-containment became a priority during the Carter presidency (1977-1981). During that time, the Health Care Financing Administration within the Department of Health, Education, and Welfare was established and had oversight management of the Medicare, Medicaid, Blue Cross, and Blue Shield programs (Kaiser Family Foundation, n.d.). A presidential push for a mandatory national health plan in response to rising medical cost was unsuccessful against the economic recession (Parks, 2012). Cost pressures felt by insurers led to alternative reduction strategies that included HMOs, reduced hospital stays, preventative care practices, and outpatient surgeries, whereas the government introduced a reimbursement system to address cost containment for Medicare (Niles, 2011; Parks, 2012).

The Consolidation Omnibus Budget Reconciliation Act (COBRA), enacted in 1985 under President Reagan’s administration, allowed displaced workers access to medical coverage. Simultaneously, Congress legislated the Emergency Medical Treatment and Active Labor Act, requiring hospitals participating in Medicare to treat patients using emergency room services despite their ability to pay (Kaiser Family Foundation, n.d.). In 1987, when the US Census Bureau began annual reporting of health insurance coverage, an estimated 31 million people (13% of the population) were uninsured (Wall Street Journal, n.d.).
Proposed national healthcare reform introduced in 1993, Clinton’s Health Security Act, called for universal coverage and employer and individual mandates, and attempted to manage competition between private insurers and government regulation to control costs (Kaiser Family Foundation, n.d.); however, a fractured Congress failed to support the plan. Other significant pieces of legislation were enacted: the Family Medical Leave Act (FMLA), the Health Insurance Portability and Accountability Act (HIPAA), and the State Children’s Health Insurance Plan (CHIP; Niles, 2011). “In the 1990s, the main tool used to limit spending was the sustainable growth rate (SGR) program” (Goodney, Fisher, & Cambria, 2012, p. 875), which was implemented as part of the Balanced Budget Act (BBA) of 1997 (Fontenot, Brandt, & McClellan, 2015). SGR was developed to limit physician services to bend the spending growth curve. Authorized changes in the BBA targeted slowing growth of Medicare spending as the estimated number of uninsured Americans grew to 42.4 million, or 15.7% of the population in 1997 (Kaiser Family Foundation, n.d.; Wall Street Journal, n.d.). The ACA resolved many of the issues associated with SGR, and in 2015 Congress repealed the SGR legislation to prevent a widespread reduction in payments to Medicare providers (Guterman, 2015).

The turn of the century brought reform through the Health Center Growth Initiative, Medicare Prescription Drug Improvement and Modernization Act (now known as Medicare Part D), Health Saving Accounts, and universal health insurance in Massachusetts requiring its residents to obtain coverage (Kaiser Family Foundation, n.d.). Although the president proposed to “replace the tax preference for employer-based insurance with a standard healthcare deduction” (Wall Street Journal, n.d., p. 16),
Congress failed to support the initiative. Advocating for sweeping healthcare reform in her 2007 presidential campaign, Hillary Clinton proposed a plan resembling universal healthcare with increased access, fiduciary responsibility, and “market forces with Government regulation in the hope that doctors and hospitals will compete for business on the basis of price and quality” (Marcelllus, 2008). Obama defeated Clinton for the democratic nomination with less comprehensive healthcare reform strategies.

Responding to the recession, the American Recovery and Reinvestment Act (ARRA) signed in 2009 provided economic stimulus through job creation. Additionally, it protected healthcare coverage of unemployed Americans through a 65% COBRA subsidy, making premiums more affordable while expanding the primary care workforce and investing in health information technology through the inclusion of the Health Information Technology for Economic and Clinical Health Act (HITECH; The White House, 2009). Reauthorization of CHIP provided state-level funding to cover an estimated 4.1 million child-beneficiaries of Medicaid and CHIP (Kaiser Family Foundation, n.d.). Legislative issues and continuing escalation of healthcare costs resulted in the next large-scale reform effort, the Affordable Care Act of 2010.

**Patient Protection and Affordable Care Act**

In reaction to a healthcare system that cost too much, covered too little of the population, and delivered fragmented services, the ACA, also known as Obamacare, introduced reforms to the healthcare system addressing multiple issues (AMA, 2012). The ACA established provisions for more Americans to gain access to quality, affordable health insurance, and decreased growth of healthcare spending in the US (Rosenbaum, 2011). A complex piece of legislation, the ACA was comprised of the Affordable Health
Care for America Act, the Patient Protection Act, and portions of the Health Care and Education Reconciliation Act and the Student Aid and Fiscal Responsibility Act. The legislation also affected other laws pertaining to the Food and Drug Administration as well as health and safety (ObamacareFacts, n.d.). Fundamentally, the ACA altered the policy landscape where public health was practiced.

The ACA required all individuals to obtain health insurance by 2014, effectively “reducing the uninsured population by 31 million people, and increasing Medicaid enrollment by 15 million beneficiaries. Approximately 24 million people are expected to remain uninsured” (Rosenbaum, 2011, p. 130). In addition to the individual mandate for insurance, the ACA targeted healthcare spending with expansion of public programs (e.g., Medicaid, Medicare, CHIP) and new health benefits; changes to private insurance, employer benefits, and tax codes; creation of committees and new jobs; and improvements in health education (Kaiser Family Foundation, 2012; ObamacareFacts, n.d.). The ACA reframed the financial relationship between consumers and providers through federal standards. According to the Kaiser Family Foundation (2012), the following were key health coverage provisions of the ACA:

- Expansion of Medicaid to 138% of the federal poverty level ($15,415 for an individual, $31,809 for a family of four in 2012) for individuals under age 65
- Creation of health insurance exchanges through which individuals without access to public or employer coverage were able to purchase insurance with cost-sharing credits available to make coverage more affordable
- Regulations that prevent health insurers from denying coverage to people for any reason, including health status, and from charging higher premiums based on health status and gender
- Requirements that most individuals obtain health insurance by 2014
- Penalties to employers that do not offer affordable coverage to their employees, with exceptions for small employers (p. 1)

As shown in Figure 1, public opinion of the ACA remained relatively consistent since it was signed into law in 2010. Americans continued to have a slightly unfavorable view of the ACA (Kieke, 2014). The Kaiser Health Tracking Poll further showed that individual perceptions of the law correlated with a person’s political affiliation and the majority of the public, despite a negative opinion, preferred Congress to work and improve the law rather than repeal or replace it (Hamel, Firth, DiJulio, & Brodie, 2014).

Figure 1. US public opinion of the ACA from 2010 to 2015 from the Kaiser Family Foundation Tracking Poll (DiJulio, Firth, & Brodie, 2015).
Recent survey results of practicing physicians depicted mixed opinions about the ACA and its impact on patients. One survey of 613 physicians revealed 44% believed the ACA was a “good start,” 38% felt it was a “step in the wrong direction,” and 18% remained undecided (Deloitte Center for Health Solutions, 2013). A Thomson Reuters (2011) survey showed over half (58%) of 2,958 responding physicians believed the ACA would have a negative impact on patients, whereas 27% thought it would have a positive impact and 15% remained neutral. Rocke, Thomas, Puscas, and Lee (2014) reported physician knowledge of requirements of the ACA was better than the public. The study revealed “several areas where physician knowledge was assessed as poor” (Rocke et al., 2014, p. 229) and recommended healthcare leadership and medical associations take measures to bridge the gap. In 2011, 45% of physicians did not know what an ACO was (Thomson Reuters, 2011), whereas in 2012, 1 in 3 (33%) were familiar with the ACO model (Deloitte Center for Health Solutions, 2013).

**Accountable Care Organizations**

To improve the quality of healthcare while curtailing costs of Medicare, the ACA established programs intended to enhance the structure of the US healthcare delivery system and slow the growth of spending by encouraging coordinated patient care and outcomes by healthcare providers (Epstein et al., 2014; McClellan et al., 2010; Rittenhouse, Shortell, & Fisher, 2009). The concept of the ACO emerged as a payment model that encouraged cost-conscious decisions across primary care physicians, specialists, and hospitals, while developing standardized care protocols and expanding access to patients (Gardner, Toone, Vargo, Marks, & Muhlestein, 2015). Dr. Berwick (2011), an administrator from the CMS, defined an ACO as:
A voluntary group of physicians, hospitals, and other health care providers that are willing to assume the responsibility of the care of clearly defined population of Medicare beneficiaries attributed to them on the basis of patients’ use of primary services. (p. 1755)

Crosson (2011) claimed ACOs were “an evolving model of care” (p. 1250) and indicated they would likely be successful if an arrangement of risk-sharing was prescribed in such a way to align incentives between insurers and providers. McClellan et al. (2010) suggested the adoption of providers to form an ACO was one cost containment strategy and addressed additional inadequacies in the US healthcare system.

Some Medicare populations were served through a fee-for-service (FFS) model for physician reimbursement. This system of payment allowed for professional services in which the practitioner was paid for the services rendered rather than receiving a salary for providing professional services during scheduled hours (i.e., a delivery system where providers were paid for each service; US Department of Health and Human Services [HHS], n.d.). CMS (2015a) reviewed all state plan amendments on reimbursement methodologies to remain consistent with federal statutes and regulations. However, this FFS framework needed to transition into shared savings and ACO models to motivate patient coordination and effective care by the physician rather than incentivizing over-prescribed and over-provided services (Blumenthal & Dixon, 2012; McClellan, White, Kocot, & Mostashari, 2014; Wilensky, 2014).

The value-based ACO model was proposed to address the fragmented, uneven quality, and unsustainable growing costs of US healthcare (Budryk, 2014a; Lewis, Colla, Carluzzo, Kler, & Fisher, 2013). According to CMS (2014a), “the goal of an ACO is to
deliver seamless, high-quality care for Medicare beneficiaries, instead of the fragmented care that often results from a fee-for-service payment system in which different providers receive different, disconnected payments.” In some cases, with up to “95% of organization’s reimbursements being tied to FFS reimbursement” (MacDonald, 2015), healthcare executives waited to see which value-based models were most successful before they assumed the risk of the financial transition.

ACO guiding principles, as defined by CMS (2011), stated physician and patient participation in an ACO was voluntary. Further, as Medicare beneficiaries, patients retained the right to choose physicians within or outside of an ACO. Physicians were not required to be part an ACO to contract with Medicare or Medicaid (CMS, 2011).

**Structural Organization of ACOs**

The ACO model focused on operational functionality using a team approach. Therefore, developing an appropriate organizational structure was critical (Koury et al., 2014). The size, structure, and organizational relationships of ACO providers, consisting of primary and specialty care physicians and at least one hospital, influenced the clinical and financial performance of the organizations.

Becoming an ACO required an application process. The CMS Proposed Rule (2011) described the ACO eligibility and structural requirements as: (1) being a legal entity of providers; (2) having a legal structure to conduct business with contracting capabilities; (3) maintaining governance to promote accountability and transparency; (4) having executive leadership and management structure including administrative and clinical systems; (5) signing a three-year commitment; (6) keeping to a distribution of savings plan; (7) engaging in operational processes regarding evidence-based medicine,
patient engagement, quality, cost measures, and coordinated care; (8) having a patient-centered focus; and (9) agreeing to share data.

Types of ACOs

ACOs sought to meet the common goal of Triple Aim: “improving the experience of care, improving the health of populations, and reducing per capita costs of healthcare” (Berwick et al., 2008, p. 759). Within the shared vision of the Triple Aim, ACOs varied greatly in their structural (DuPont, 2014; Tu, Muhlestein, Kocot, & White, 2015). A recent report noted the requirements of the ACO allowed for customization that best met the needs of patient populations while still meeting the Triple Aim goals (Muhlestein, Gardner, Merrill, Petersen, & Tu, 2014). Budryk (2014a) noted six structurally distinctive, value-based ACO models with different forms of ownership, patient care emphasis, and organizational structures depending on the regional or local market: full spectrum, independent physicians groups, physician group alliances, expanded physician groups, independent hospitals, and hospital alliances. Table 1 presents a brief description of each of the six ACO models.

Classifying ACOs organization by payer contracts provided a common platform for ACO discussions (Shortell, Wu et al., 2014; Tu et al., 2015). Numerous payers have expanded into the ACO, including Medicare, state Medicaid agencies, and commercial payers like Aetna, Cigna, and UnitedHealth (Muhlestein, 2015; Tu et al., 2015).
### Table 1

*ACO Taxonomy*

<table>
<thead>
<tr>
<th>ACO Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Physician Group</td>
<td>A single organization that directly provides outpatient care.</td>
</tr>
<tr>
<td>Physician Group Alliance</td>
<td>Multiple organizations that directly provide outpatient care.</td>
</tr>
<tr>
<td>Expanded Physician Group</td>
<td>Directly provides outpatient care and contracts for inpatient care.</td>
</tr>
<tr>
<td>Independent Hospital</td>
<td>A single organization that directly provides inpatient care.</td>
</tr>
<tr>
<td>Hospital Alliance</td>
<td>Multiple organizations with at least one that directly provides inpatient care</td>
</tr>
<tr>
<td>Full-Spectrum Integrated</td>
<td>All services provided directly by the ACO. May include one or multiple organizations.</td>
</tr>
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</table>

*Note.* Adapted from (Tu et al., 2015).

In addition to the six value-based models, CMS originally established three public-sector ACO models to meet healthcare needs: Pioneer ACO, Advance Payment ACO, and the Medicare Shared Savings Program (MSSP) ACO (Barnes, Unruh, Chukmaitov, & van Ginneken, 2014). Additionally, the private-payer commercial ACO model was developed in partnership with one or more insurance companies (Joszt, 2015). The Next Generation ACO Model, defined in 2015, provided improvements after evaluating the first two years of ACO model existence (CMS, 2015a).

The Innovation Center of CMS designed the Pioneer ACO model to support the new payment structure while allowing providers to deliver more coordinated care to Medicare beneficiaries at a lower cost to Medicare. This model launched in 2012 with 32 organizations that possessed significant experience in offering high-quality, coordinated, and patient-centered care across settings (CMS, 2015a); of the original 32 Pioneer ACOs,
19 remain today (Troussaint, Milstein, & Shortell, hhow Pioneer ACO model needs to change, 2013). This model was “designed for large organizations that are prepared to take on the financial risk” (Colla et al. 2014, p. 967). According to CMS (2011), the heightened risk/reward Pioneer ACO model:

- enabled provider groups to move more rapidly from a shared savings payment model to a population-based payment model on a track consistent with, but separate from, the Medicare Shared Services Program. The model worked in coordination with private payers by aligning provider incentives, to improve quality and health outcomes for patients across the ACO, and achieve cost savings for Medicare, employers and patients. (p. 1)

The Advancement Payment ACO model offered rural-based physician providers, with less access to the capital necessary to build the infrastructure required by the Pioneer model, the opportunity to participate in the cost savings of the ACO. Eligibility for this model included two specific MSSP ACO participants. Providers voluntarily banded together to integrate delivery of coordinated, high-quality care to the Medicare patients they served. Selected providers received advanced monthly payments based on expected savings, which could be used to invest in care coordination infrastructure (CMS, 2014c). The additional resources supported up-front costs to develop the ACO as the shared savings model provided potential savings at the back end, and thus encouraged ACO creation among independent physicians, especially in rural communities (CMS, 2014c).

The MSSP ACO was the most popular model established under the ACA and encouraged coordination among providers to improve quality of care and reduce costs. The program guidelines dictated a three-year commitment by a minimum number of
providers offering care to at least 5,000 Medicare beneficiaries (Gamble & Punke, 2013; Mahoney, Naas, & Rankin, 2014). This one-sided, no-risk option rewarded the ACO if costs were below spending targets and certain performance standards were met, with no penalty for exceeding targets. A second option within the model, with greater reward, required the ACO to reduce spending below benchmarks while assuming risk for costs that exceeded targets and met quality standards (Larson et al., 2011; Mahoney et al., 2014). MSSP remained the largest of the models with 404 current ACOs, and CMS continued to accept more (Joszt, 2015).

The Next Gen ACO program was launched in 2015 and availed to existing ACOs experienced in coordinated care and population health management with a higher level of financial risk and reward (CMS, 2015b). With many similarities to the Pioneer and MSSP models, redefined key features in the Next Gen ACO model included new risk/reward sharing levels, smoother cash flow, prospectively set benchmarks, improved beneficiary alignment, and new beneficiary enhancements. According to CMS (2015b), “the goal of the model is to test whether strong financial incentives for ACOs, coupled with tools to support better patient engagement and care management, can improve health outcomes and lower expenditures for Original Medicare fee-for-service beneficiaries.”

Outpacing Medicare ACO growth in 2012, the private sector commercial ACO model was independent from the government and its jurisdiction (Gamble & Punke, 2013; Wolters Kluwer, 2012). Showing more diversity, commercial ACOs varied significantly by region and lacked uniformity in performance measures and reporting. Results from commercial ACOs tended to be more positive as they were not held to CMS quality metrics, financial requirements, or mandated reporting timelines (Barnet, Rosin,
& Punke, 2014; Gamble & Punke, 2013). Private sector ACO participants navigated key infrastructure details with the flexibility to negotiate contracts and customize ACO agreements to individual providers, and had the ability to define the organizational structure, unlike the Medicare ACO models.

ACOs took shape all over the country in a variety of formations. California had a healthcare landscape that provided a unique opportunity to shape ACO design differently (Grossman, Tu, & Cross, 2013). Large physician organizations experienced in financial risk for patient care, together with competitive market factors from insurers and other providers, like Kaiser Permanente Health Plan, drove an interest in alternatives (Grossman et al., 2013; Markovich, 2012). Cross-sector collaborations integrated existing insurance products and combined payment changes and limited-network ACOs (Grossman et al., 2013; Zusman et al., 2014). This contrasted other reimbursement models such as episode-based reform or bundled payments. Development of the commercial ACO was an innovative idea based in California that restricted patient access to only ACO providers or preferred provider organizations (PPOs). The segue to this model was easy as California experienced high HMO enrollments, a similar network-model as an ACO. According to Markovich (2012), data suggested acceptance of partnerships with a global budget approach yielded savings and improvements by bringing providers and payers together for better-coordinated care. Commercial ACO collaboration in California reflected a marked change and the model delivered $37 million for CalPERS through an ACO formed by Blue Shield, Dignity Health, and Hill Physicians Medical Group (Budryk, 2015; Grossman et al., 2013). However, hospitals presented a financial conundrum in the coordinate care model, as they were not
paid in a pre-paid capitated format but rather remained entrenched in a fee-for-service paradigm (Budryk, 2015; Grossman et al., 2013; Kreindler et al., 2012). In addition, the California-based limited-network, or collaborative model, was only possible where competitive market factors existed and therefore presented a geographic constraint (Grossman et al., 2013; Shortell, McClellan et al., 2014).

**ACO Growth Trend**

By the end of 2010 (the year the ACO model was first introduced), CMS announced agreements with 32 initial ACO entities across the US, which operated under the Pioneer ACO model (Pham, Cohen, & Conway, 2014). Significant growth in ACO creation resulted following the introduction of the MSSP model, which CMS finalized the regulations for in October 2011 (see Figure 2). Those regulations allowed for more flexibility than the Pioneer model and offered phased-in performance measures (Gerberry, Koenig, & Lazerowitz, 2012). As a result of the rapid formation of ACOs, the public and private sector ACOs provided healthcare services to upward of 31 million Americans who were previously uninsured (DeCamp et al., 2014). The US Census Bureau found 48.6 million Americans uninsured in 2009, or 15.7% of the population. The total uninsured rate reported in a 2015 study by the Center for Disease Control revealed a 9.2% rate, which was the lowest rate in 50 years (ObamacareFacts, n.d.). Insured Americans covered by ACOs grew to an estimated at 23.5 million (Muhlestein, 2015).
Figure 2. Total public and private ACOs, 2011 to January 2015. Over 700 new ACOs formed since the ACA passed in 2010. Reprinted from Leavitt Partners Center for Accountable Care Intelligence (as cited by Muhlestein, 2015).

The first performance period of MSSP ACOs was April 2012. At that time, 27 initial MSSP ACOs existed (CMS, 2015a). Sixteen of the original 32 Pioneer ACOs switched to the MSSP model in an effort to reduce the financial risks (Evans, 2015). California and 18 other states opted to form MSSPs. California had the largest number of ACOs, 81, and significant experience providing care under risk-bearing contracts (Muhlestein, 2015; Shortell et al., 2015). In a report by Leavitt Partners (as cited by Muhlestein, 2015), considerable ACO growth was prevalent in areas of high population density, including southern California (Figure 3).
Figure 3. Number of ACOs by state as of January 2015. Distribution of ACOs existed in all 50 states with concentration directly proportional to population density. Reprinted from Leavitt Partners Center for Accountable Care Intelligence (as cited by Muhlestein, 2015).

Quality Measures and Performance Standards

The ACO model held providers accountable for patient care in return for shared cost savings realized through quality improvements and efficiencies. In addition to maintaining a patient-centric model that promoted evidenced-based medicine, ACOs needed to promote patient engagement and publicly report on quality measures and cost (CMS, 2011). CMS created feasible performance standards to improve care delivery for their two ACO initiatives, MSSP and Pioneer models (Bobbitt, 2012).

The four quality domains for reporting were Patient/Caregiver Experience, Care Coordination/Patient Safety, Preventive Health, and At-Risk Population (Bobbitt, 2012).
Accurate reporting was required each year to assess ACO performance (Koury et al., 2014).

Under each quality domain, CMS stipulated goals the ACO must demonstrate before sharing in any generated cost savings (CMS, 2015a). The ACO needed to show the ability to meet quality performance benchmarks as defined by the 33 nationally recognized ACO quality measures (Table 2). The measures were grouped by the four quality domains, with at-risk populations being further separated into single clinical conditions like diabetes and hypertension.

Table 2

Accountable Care Organization Quality Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Domain</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO #1</td>
<td>Patient/Caregiver Experience</td>
<td>Getting Timely Care, Appointments, and Information</td>
</tr>
<tr>
<td>ACO #2</td>
<td>Patient/Caregiver Experience</td>
<td>How well do your doctors communicate</td>
</tr>
<tr>
<td>ACO #3</td>
<td>Patient/Caregiver Experience</td>
<td>Patients’ Rating of Doctor</td>
</tr>
<tr>
<td>ACO #4</td>
<td>Patient/Caregiver Experience</td>
<td>Access to Specialists</td>
</tr>
<tr>
<td>ACO #5</td>
<td>Patient/Caregiver Experience</td>
<td>Health Promotion and Education</td>
</tr>
<tr>
<td>ACO #6</td>
<td>Patient/Caregiver Experience</td>
<td>Shared Decision Making</td>
</tr>
<tr>
<td>ACO #7</td>
<td>Patient/Caregiver Experience</td>
<td>Health Status/Functional Status</td>
</tr>
<tr>
<td>ACO #8</td>
<td>Care Coordination/Patient Safety</td>
<td>Risk Standardized, All Condition Readmissions</td>
</tr>
<tr>
<td>ACO #9</td>
<td>Care Coordination/Patient Safety</td>
<td>ASC Admissions: COPD or Asthma in Older Adults</td>
</tr>
<tr>
<td>ACO #10</td>
<td>Care Coordination/Patient Safety</td>
<td>ASC Admission: Heart Failure</td>
</tr>
<tr>
<td>ACO #11</td>
<td>Care Coordination/Patient Safety</td>
<td>Percent of PCPs who Qualified for EHR Incentive Payment</td>
</tr>
<tr>
<td>ACO #12</td>
<td>Care Coordination/Patient Safety</td>
<td>Medication Reconciliation</td>
</tr>
<tr>
<td>ACO #13</td>
<td>Care Coordination/Patient Safety</td>
<td>Falls: Screening for Fall Risk</td>
</tr>
<tr>
<td>ACO #14</td>
<td>Preventive Health</td>
<td>Influenza Immunization</td>
</tr>
<tr>
<td>ACO #15</td>
<td>Preventive Health</td>
<td>Pneumococcal Vaccination</td>
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<tr>
<td>ACO #16</td>
<td>Preventive Health</td>
<td>Adult Weight Screening and Follow-up</td>
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<tr>
<td>ACO #17</td>
<td>Preventive Health</td>
<td>Tobacco Use Assessment and Cessation Intervention</td>
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<tr>
<td>ACO #18</td>
<td>Preventive Health</td>
<td>Depression Screening</td>
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<tr>
<td>ACO #19</td>
<td>Preventive Health</td>
<td>Colorectal Cancer Screening</td>
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<tr>
<td>ACO #20</td>
<td>Preventive Health</td>
<td>Mammography Screening</td>
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<tr>
<td>ACO #21</td>
<td>Preventive Health</td>
<td>Proportion of Adults who had blood pressure screened in past 2 years</td>
</tr>
<tr>
<td>Diabetes At-Risk Population Diabetes</td>
<td>ACO #22. Hemoglobin A1c Control (HbA1c) (&lt;8 percent)</td>
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<tr>
<td>Composite</td>
<td>ACO #23. Low Density Lipoprotein (LDL) (&lt;100 mg/dL)</td>
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<tr>
<td>ACO #22-26</td>
<td>ACO #24. Blood Pressure (BP) &lt; 140/90</td>
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<tr>
<td>ACO #25.</td>
<td>Tobacco Non Use</td>
<td></td>
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<tr>
<td>ACO #26.</td>
<td>Aspirin Use</td>
<td></td>
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<tr>
<td>ACO #27</td>
<td>At-Risk Population Diabetes</td>
<td>Percent of beneficiaries with diabetes whose HbA1c in poor control (&gt;9 percent)</td>
</tr>
<tr>
<td>ACO #28</td>
<td>At-Risk Population Hypertension</td>
<td>Percent of beneficiaries with hypertension whose BP &lt; 140/90</td>
</tr>
<tr>
<td>ACO #29</td>
<td>At-Risk Population IVD</td>
<td>Percent of beneficiaries with IVD with complete lipid profile and LDL control &lt; 100mg/dl</td>
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<tr>
<td>ACO #30</td>
<td>At-Risk Population IVD</td>
<td>Percent of beneficiaries with IVD who use Aspirin or other antithrombotic</td>
</tr>
<tr>
<td>ACO #31</td>
<td>At-Risk Population HF</td>
<td>Beta-Blocker Therapy for LVSD</td>
</tr>
<tr>
<td>ACO #32</td>
<td>At-Risk Population CAD</td>
<td>ACO #32. Drug Therapy for Lowering LDL Cholesterol</td>
</tr>
<tr>
<td>ACO #33</td>
<td>ACO #33. ACE Inhibitor or ARB Therapy for Patients with CAD and Diabetes and/or LVSD</td>
<td></td>
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</table>

Note. ASC = Ambulatory Sensitivity Conditions, COPD = Chronic Obstructive Pulmonary Disease, EHR = Electronic Health Record, LDL = Low Density Lipoprotein, IVD = Ischemic Vascular Disease, HF = Heart Failure, LVSD = Left Ventricular Systolic Dysfunction, CAD = Coronary Artery Disease. Adapted from CMS (2015a).
The ACO performance measures aligned with those for other CMS programs, including the Agency for Healthcare Research and Quality, the American Heart Association, the American Medical Association, and the Physician Consortium for Performance Improvement (CMS, 2014a). ACOs that successfully reported on the performance measures each year were eligible for a bonus, regardless of whether it met the performance indicators and was eligible for shared savings.

Other ACO models shared the Triple Aim goals like the Medicare ACOs; however, these models lacked uniformity in measurement and reporting (Petersen & Muhlestein, 2014). Although these ACOs were held to the aspects of improved patient care, improved quality of care, and decreased costs, they were not held to the 33 quality measures used by CMS (Colla et al., 2014; Muhlestein, Gardner, Merrill, Petersen, & Tu, 2014; Tu et al., 2015).

**The Role of the Physician within the ACO**

The intent of the ACO was to have a healthcare team comprised of physician assistants, advanced practice nurses, and other non-physicians focused on preventive care permitting the physicians to focus on complex clinical problems. The move to ACOs had physicians take an active role in prudent, value-based healthcare spending to improve care while controlling costs (Colla et al., 2014). An increase in provider mergers since implementation of ACOs created entities that were clinically stronger and financially more stable, while providing management expertise and leveraging information technology (Budryk, 2014b; Valentine, 2014). This consolidation trend to larger entities differed from independent or small groups of practitioners in past years and altered the physician’s practice. However, Shortell, McClellan et al. (2014) noted that “Sustained
transformation of healthcare delivery will depend on both greater physician participation in accountable care arrangements and longer-run documentation of results” (p. 14).

Creation of ACOs addressed the unsustainable demands of healthcare costs, but their success was dependent on the physicians as “doctors are the most prominent decision-makers in medicine” (Flower, 2012, p. 46). However, the transformational change in healthcare delivery through ACOs also affected those who provided, received, and financed healthcare services. Colla et al. (2014) reported in a national survey that ACOs significantly impacted physician lives. Recent studies showed the physician’s role changed to align with the ACO models (Colla et al., 2014; Shortell, Wu et al., 2014). Disruptive changes occurred by transitioning from fee-for-service to value-based medicine, incorporating evidenced-based medicine, delivering team-based quality care, and providing other providers data on best practices (deVore & Champion, 2011). The clinical routines, work environment, level of autonomy, and incomes of ACO-participating physicians were affected (Colla et al., 2014). However, “despite the potential importance of engaging physicians in ACO leadership, little information is available about the leadership and management structures of ACOs” (Colla et al., 2014, p. 965).

In the coordinated care model, formed between a union of previously independent organizations or as a single entity that accepted accountability for a population, the providers must meet the ACO Triple Aim goals. Significant collaboration was required among providers to meet those goals. The ACA required the physician to be at the core of the ACO (CMS, 2011). Physicians participating in ACOs transformed the way they practiced medicine, the role they played, and the role they filled as they transitioned from
fee-for-service practices to a value-based model working together to reduce waste (Gardner et al., 2015).

**Physician as a clinician.** Generally, the history of “medicine and the services of the physician as healer are embedded in the Hippocratic oath” (Ramsey, 2012, p. 9). Newly minted physicians swear to ethical standards in the modern version of the oath, including the sharing of knowledge among professional peers, respecting patient privacy, and requesting skilled assistance from a colleague to benefit a patient. Prescribed to the oath, physicians were bound to the altruistic principles of knowledge and the humanitarian practice of protecting their patients to the best of their ability.

**Physician as a leader.** A distinct difference existed between a physician leader and a healthcare administrator. A larger number of physician leaders possessed the fundamental knowledge and training of business theory versus the small number of healthcare administrators who had the skills to practice medicine (Ramsey, 2012). For the purpose of this study, healthcare administrators did not perform any medical or clinical assignments; rather they were responsible for managerial functions such as budgeting and accounting, facility organization and management, strategic planning, economics, marketing, epidemiology, human resources, and information systems. Physician leaders held deep academic training in medicine and understood the clinical needs of patients. As licensed practitioners, they were responsible for care and clinical decisions. Physician leaders served in medical and administrative capacities as department heads, leveraging medical expertise to function as a liaison between staff, administration, and the board (O'Connor & Fiol, 2006). The unique combination of operational management combined with clinical care made the physician leader
distinctive in the healthcare delivery system. “Little is known about which institutional leadership model might be best suited to successful ACO development and performance, but there is wide agreement on its importance” (Shortell, Wu et al., 2014, p. 1887).

ACO requirements included at least 75% provider-control, dictating significant physician input at the start (CMS, 2014b). A recent study revealed 51% of public and private ACOs were physician-led through practice management organizations or non-profit community companies (Colla et al., 2014). “An ACO requires extensive management, technical resources and granular insight into, and analysis of, patient data. Many of these requirements are beyond the realm (or interest) of your average physician” (Bush, 2014, p. 28). Physician leaders were responsible for patient safety, quality measurement programs, and reports of significant adverse events.

According to Muhlestein (2015), healthcare transformation was complex and infrastructure was the key to organizational success. The radical shift in healthcare to ACOs required leadership to consider new states of “culture, behavior, and mindset” (Anderson & Ackerman-Anderson, 2010, p. 60) for implementation and sustainability of the ACO model. Improved operations in healthcare using the ACO as a payment vehicle without incorporating coordinated care delivery adjustments were developmental changes as defined by Anderson and Ackerman-Anderson (2010). Transformational change continues as healthcare administrators implement corrections and adjustments through the nonlinear process.

**Preliminary Findings on ACO Outcomes and Challenges**

Medicare’s first three-year cycle of the ACO ended in 2015 (McClellan, White, Kocot, & Mostashari, 2014). Early results of the ACO model were mixed (Colla et al.,
The value-based delivery model continued to gain traction as evidenced by ACO growth as reported above. Data suggested early success indicators (e.g., committed executive leaders, payer-provider relationships, experience in delivering coordinating care) and definitive challenges (e.g., organizational structure, performance metrics, the number of elements necessary to enable transformation of care) existed as ACOs began implementation (Berwick et al., 2008; Larson et al., 2011).

**Successes.** National healthcare costs declined between 2009 and 2012. Healthcare spending as a percent of GDP declined from 17.4% to 17.2% ($2.8 trillion) and annual growth of Medicare spending declined from 4.0% in 2012 to 3.4% in 2013 (HHS, 2014). The ACA and sequestration were attributed to the declines (CMS, 2014a). CMS (n.d.) reported that 54 of the 114 MSSP ACOs held costs to the budget benchmark in 2012 and 29 qualified for $705 million in shared savings during the first year of ACO implementation. In addition, improvements on 30 of the 33 quality measures were integrated into the Next Gen ACO model.

Colla et al. (2014) reported that 78% of the ACOs surveyed had governing bodies and boards of directors spearheaded by physicians; additional findings showed:

- Physicians owned the equipment and employed the staff in 40% of ACOs.
- Physicians owned 62% of physician-led ACOs, compared to 16% in all other ACOs (p < 0.001). Furthermore, 58% of both physician-led ACOs and other ACOs reported ‘extensive and active involvement of clinicians in ACO discussions and decision making.’ (p. 967)
In one example, a physician-owned, physician-led, independent physician organization shared in savings of $11.9 million in 2014, ranking third in MSSP ACOs across the country. Additionally, experience delivering coordinated care, managing patient risk, and moving to performance-based payments were found to be important factors of success by early ACO adopters (Larson et al., 2011).

**Challenges.** Effectiveness of ACOs meeting the goals of Triple Aim remained unclear (Shortell et al., 2015; Singh, Khosla, & Sethi, 2015). Conflicting analysts were not convinced the spending slowdown was sustainable. “But given the historical difficulty of bringing together hospitals, physicians, and other delivery organizations to provided integrated care, the ACO concept has met skepticism” (Shortell, Wu et al., 2014, p. 1884). In 2014, three years into the program, one-third of ACOs did not qualify for shared savings (CMS, 2015a). Additionally, 79% of the Pioneer model ACOs generated $120 million in savings; however, only 58% qualified for bonuses (Joszt, 2015). Similarly, only 28% of MSSP ACOs reduced costs with 27% receiving bonuses (Joszt, 2015).

Transformational change, such as that required in the move to ACOs, took strong leadership, leadership that recognized industry disruptions and had the tenacity to execute a solid strategic plan necessary to move the goals of the organization forward (Anderson & Ackerman-Anderson, 2010). The shift of payment models from volume- to value-based had healthcare organizations straddling the fence. ACO governing boards were expected to guide the system, together with directives on “performance improvement, health information technology, credentialing and modeling” (Koury et al., 2014, p. 48).
The expanded scope of physician leadership could have significant impact on the future of ACO evolution (Colla et al., 2014; Koury et al., 2014). Acting as both a health provider and a business unit, physicians were the linchpins to changing healthcare (Flower, 2012; Kreindler et al., 2014). Yet, previous research showed physicians who served patients in a clinical setting and had the fiscal interests of the organization in mind must be involved in leadership (Colla et al., 2014). Physician engagement was imperative, yet difficult in organizational change (Kreindler et al., 2014). As clinical decisions-makers, physicians, and specifically the primary care physicians, were best poised for reporting quality outcomes. Without their participation, the transition to valued-based healthcare would not succeed (Fontenot et al., 2015; Sokolov, 2013). In a study of Alabama physicians, Powell, Post, and Bishop (2014) found a lack of knowledge in the areas of quality measures, regulations, and risk versus rewards, the same foundational characteristics of an ACO.

The fulcrum of sustainable transformational change in healthcare delivery balances physician participation in the evolution of the ACO model and additional data from current implementation (Shortell, Wu et al., 2014). “With so much activity under way and so little known about the ACO model, there is a great need to understand these new organizations…and measure their progress in achieving performance goals” (Shortell, Wu et al., 2014, p. 1884). Further, Colla et al. (2014) added that physician engagement in leadership of an ACO was also important, but “little information is available about the leadership of management structures of ACOs” (p. 965). The current study sought to add to the body of knowledge of ACOs by examining participating physicians’ knowledge about the Triple Aim goals and performance measures, and gain
their perspective about how those goals and measures affected their ability to meet patient needs.

**Summary**

Healthcare spending in the US stirs political and philosophical debate. Historic healthcare reform events culminated in the latest attempt of cost containment, the ACA. At the core of the ACA was the ACO, a payment delivery model simultaneously focused on the Triple Aim goals of better care for patients, better health for a population, and reducing per capita costs (Berwick et al., 2008; IHI, 2014; The White House, 2009).

ACOs emerged as a payment model that encouraged cost-conscious decisions across primary care physicians, specialists, and hospitals, while developing standardized care protocols and expanding access to patients (Gardner et al., 2015). Moving from volume-based, pay-for-performance services to the value-based ACO model was proposed to address the fragmented, uneven quality, and unsustainable growing costs of US healthcare (Lewis et al., 2013). This fundamental shift required all healthcare providers and stakeholders to reconsider the previous delivery model. Data showed Medicare ACOs “continue to improve the quality of care for Medicare beneficiaries, while generating financial savings” (CMS, 2015a).

A variety of multiple ACO models were established by Medicare and private stakeholders, with over 700 new public and private ACOs formed in the US since the ACA passed in 2010. The three original Medicare models were the Pioneer ACO, Advance Payment ACO, and the MSSP (Barnes et al., 2014). The Next Generation ACO model introduced in 2015 provided improvements after evaluating the first two years of ACO model existence (CMS, 2015a). All 50 states, Washington D.C., and Puerto Rico
have ACOs with distribution directly proportionate to population density (Muhlestein et al., 2014; Tu et al., 2015). Leading the nation with the most ACOs was California with 81, followed by Florida with 66 and Texas with 48 (Muhlestein, 2015).

The physicians in the ACO played a significant role in the success or failure of the models. The ACA required the physician to be at the core of the ACO (CMS, 2011). Physicians participating in ACOs transformed the way they practiced medicine as they transitioned from fee-for-service practices to increased value by working as a team with other physicians, specialists, and healthcare workers (Gardner et al., 2015). The difficult shift of physician behavior, engagement, and participation in the change process altered the landscape of autonomy. With so many changes resulting from ACO implementation, “further research is needed to see how practices evolve into ACOS, how ACOS achieve cost savings while maintaining and improving quality, and whether patient experience and overall population health is differently improved” (Colla et al., 2014, p. 970).

Transformational change, such as that happening in the healthcare field, required leadership and employees alike to shift their mindset and adopt new practices for implementation and sustainability (Anderson & Ackerman-Anderson, 2010). If providers were unclear about the requirements and performance measures of an ACO and how it affected patient populations or their practice, they could not implement the changes necessary for success or to sustain the ACO model. Healthcare leadership is under pressure to ensure physicians at the forefront of ACO implementation have the knowledge and skill set necessary to improve the patient experience of care, improve the health of patient populations, and reduce per capita costs (McWilliams, Landon,
Chernew, & Zaslavsky, 2014; Moreo, Moreo, Urbano, Weeks, & Greene, 2014; Shortell et al., 2015).

**Synthesis Matrix**

The researcher developed a synthesis matrix to organize the current knowledge associated with this study. This conceptual framework provided an overview of the literature allowing for the identification of common themes and key concepts, as well as aided in establishing relationships within the literature relating to the research. Key ideas, major themes, thought leaders, commonalities, and differences of opinion emerged from the resources. The matrix contained abstracts and summarized the text, study methodologies, authors, and citations.
CHAPTER III: METHODOLOGY

In 2010, President Obama enacted comprehensive healthcare reform in the US, the Patient Protection Affordable Care Act (ACA). The law was designed to provide medical benefits to 4.3 million uninsured Americans and reduce healthcare expenditures while improving quality of care and patient outcomes. The accountable care organization (ACO) was a delivery and financial model at the core of the ACA with the physicians at the center of the ACO playing a significant role in the success or failure of the models. Healthcare leadership is under pressure to ensure physicians at the forefront of ACO implementation have the knowledge and skill sets necessary to achieve the ACO goals of Triple Aim. Without a benchmark of physician knowledge, specifically the details and mechanics of an ACO, or feedback about the impact on patient needs, administrators will be unable to modify the current ACO model enough to sustain cost containment and meet quality outcomes.

Chapter III describes the quantitative methodology applied to assessing the physician knowledge of the current ACO model and how ACO requirements impacted the physician’s ability to meet patient needs. This chapter offers an overview of the problem statement, purpose, and research questions. In addition, Chapter III contains a detailed description of the research design rationale, study population and sample selection, research instrumentation, data collection procedures, data analysis, and limitations of the study.

Purpose Statement

The purpose of this quantitative study was to identify how knowledgeable physicians were about the Triple Aim goals and performance measures of the ACO
model and their perceptions of the impact of ACO requirements on their ability to meet patient needs inside southern California-based ACOs.

Research Questions

The following research questions provided a framework to guide this study:

1. To what extent are ACO physicians knowledgeable about the Triple Aim goals of an ACO?

2. To what extent are ACO physicians knowledgeable about the performance measures of an ACO?

3. To what degree do physicians perceive that the Triple Aim goals and aspects of the performance measures affected their ability to meet patient needs?

Research Design

Design of the Study

To address the research questions, this descriptive study employed a quantitative research design. According to Creswell (1994), a quantitative study is “an inquiry into a social or human problem based on testing a theory composed of variables, measured with numbers, and analyzed with statistical procedures, in order to determine whether the predictive generalizations of the theory hold true” (pp. 1-2). Quantitative methods provided measurement of feelings, perceptions, or behaviors in such a way that data were gathered and analyzed numerically to determine the results (McMillan & Schumacher, 2010). In this study, the research explored the knowledge and perceptions of physicians in southern California, thus a quantitative methodology was appropriate.

Research Questions 1, 2, and 3 sought to describe the current situation and could have been satisfied either qualitatively or quantitatively. A detailed narrative description
would have resulted from a qualitative case study that focused on depth versus breadth (Patton, 2002). In contrast, a quantitative descriptive study assessed the nature of an existing condition and provided a summary using numbers for statistical analysis. The quantitative method allowed for a broader view of physician knowledge by working with a larger study sample and using an instrument tested for validity and reliability (McMillan & Schumacher, 2010). For the purpose of this study, quantitative methodology was appropriate to capture a wider range of physicians to better identify gaps in ACO knowledge and garner perceptions on their ability to meet patient needs to help establish a case for changes in the current ACO model to ensure sustainability. Additionally, using quantitative methods allowed for a more accurate assessment of the degree to which physicians perceived the Triple Aim goals and performance aspects of the ACO model affected the quality of services provided to patients.

**Population**

A population is the total group, or collection of elements, of specific interest in a study where the results or findings could be generalized (McMillan & Schumacher, 2010; Patten, 2012). The population for this study was licensed primary care and specialist physicians practicing medicine in California, estimated to be 102,500 by Kaiser Family Foundation (2015); this included all allopathic physicians (MDs) and osteopathic physicians (DOs) and excluded allied health professionals and other non-physician health professionals.

The researcher used an existing network to identify potential healthcare organizations with ACOs to participate in the study. Through the researcher’s efforts, the target population consisted of two healthcare organizations whose leadership agreed to
provide access to their physicians for this study. The participating organizations were Accountable Care Clinical Services – Orange and Monarch HealthCare, Inc. Additional physicians were targeted through the researcher’s professional network.

Sample

A sample is a subset group of participants selected from the population to participate in the study (McMillan & Schumacher, 2010; Patten, 2012). For this study the sample was the target population from the two healthcare organizations. Each organization agreed to provide survey access to their ACO physicians.

In survey research, a more accurate reflection of the truth was obtained by minimizing the amount of error between data collected (McMillan & Schumacher, 2010). A sample size of 72 participants was generally considered to be sufficient to provide credible results for a pilot study (Israel, 2009); such a sample size was sufficient to establish 95% confidence intervals with a 10% margin of error.

The final sample of this research included 75 physicians who participated in the study. This was comprised of voluntary respondents from Accountable Care Clinical Services - Orange, Monarch HealthCare, Inc., and individual physicians not associated with the two ACOs mentioned previously.

Instrumentation

Original data collection was conducted through the use of online surveys. According to McMillan and Schumacher (2010), “surveys are used frequently in educational research to describe attitudes, beliefs, opinions, and other types of information” (pp. 22-23). A survey is both standardized and formalized, and designed to address specific research questions. For this study, physicians were asked to complete a
web-based survey assessing their knowledge of Triple Aim goals and aspects of the ACO performance measures, and how they perceived those aspects impacted their ability to meet patient needs.

The survey (Appendix A) was comprised of questions asking for (1) demographic information regarding the physicians and their organizations, (2) the physician’s level of knowledge about the Triple Aim goals and performance measures of the ACO model, and (3) the physician’s perception of the impact of aspects of ACO performance measures on their ability to meet patient needs. Questions that measured knowledge were based on a 4-point Likert-type scale with a balanced number of positive and negative options: 1 = not at all knowledgeable, 2 = somewhat knowledgeable, 3 = moderately knowledgeable and, 4 = extremely knowledgeable. Using the 4-point scale forced people to select a more positive or negative response, providing the ability to be more discriminating and thoughtful by negating the misconception of a midpoint (Salkind, 2010). Questions that assessed perception of impact were based on a 7-point Likert-type scale with response options 1 = highly negative impact, 2 = moderately negative impact, 3 = slightly negative impact, 4 = no impact, 5 = slightly positive impact, 6 = moderately positive impact, and 7 = highly positive impact.

Survey questions used in this study were developed based on the review of the literature and in consultation with physicians experienced in practicing medicine who worked in an ACO and were knowledgeable about preliminary ACO findings. A panel of experts comprised of five physicians reviewed the instrument to assess its validity in terms of the effectiveness and appropriateness of each item on the instrument. Each panelist possessed a minimum of 10 years of clinical practice, served in a senior
leadership position, actively engaged in his/her professional organization, was experienced with system-wide transformation change initiatives (patient safety, quality improvements, and advancement of evidenced-based clinical standards), and had a background in physician engagement models or fully integrated health care delivery models.

**Data Collection**

All licensed, practicing physicians from the participating organizations were asked to complete a web-based survey about their knowledge of the Triple Aim goals and performance measures of ACOs and how those requirements impacted their ability to meet patient needs. The survey was administered using Qualtrics Research Suite, a standard survey and insight research platform provided by Qualtrics, a private research company (Qualtrics, 2014). Multiple strategies from Dillman, Smyth, and Christian (2009) were used to increase response rates and encourage participation. A pre-notification message by email or electronic newsletter was sent several days prior to survey administration to inform physicians of the upcoming survey. An email invitation with a direct hyperlink to the online survey was sent to all physicians, along with reminder emails to complete the survey. As an additional incentive to participate, physicians were offered a chance to win one of three Amazon gift cards that were raffled off to those who completed the survey using the following graduated payout schedule:

- **Week 1 Completion (0-7 days)** $125 Gift Card to Amazon
- **Week 2 Completion (8-15 days)** $75 Gift Card to Amazon
- **Week 3 Completion (16-21 days)** $50 Gift Card to Amazon
Additionally, the findings from the research study were shared with all respondents in appreciation of their involvement, and the findings were disaggregated by the participating healthcare organizations and individualized summary reports were provided to the organization’s leadership; no individual’s data were shared or reported to protect the confidentiality of the participants.

Participation in this study was voluntary and consent was obtained from leadership of the organizations and participants prior to the collection of any data. The landing page of the online survey provided the informed consent information, including the purpose of the study, study procedures, potential benefits of the study, procedures for maintaining confidentiality, and other content as prescribed by Brandman University’s Institutional Review Board (BUIRB). Participants were asked to provide their consent prior to completing the survey by checking a box that was required before continuing to the survey. All study materials, including the survey, informed consent, email invitations, and reminders were approved by the BUIRB prior to starting data collection (Appendix B).

**Validity**

Validity is the extent to which an instrument measures what it intends to measure (Patten, 2012). Outcomes of the research study are trustworthy when validity is apparent (Patton, 2002). Furthermore, content-related validity is the extent to which a measurement tool’s questions aligned with the content or subject they intend to assess (Patton, 2002).

This quantitative study gained content validity through developing questions based on the literature and prior protocols, and through the involvement of subject matter
experts. The subject matter experts consisted of physicians experienced in clinical practice and research medicine who worked in an ACO and were knowledgeable about the preliminary ACO findings. Once drafted, a panel of experts, comprised of five physicians, reviewed the instrument to assess its validity in terms of the effectiveness and appropriateness of each item on the instrument. To be included on the panel, the experts met the following criteria:

- A minimum of 10 years of clinical practice
- Experienced in physician engagement models or fully integrated healthcare delivery models
- Published or presented as a thought leader in the healthcare industry
- Were senior leaders in their respective organizations
- Participated in clinical research
- Were experienced with ACO development/clinical integration implementation
- Were active participants in industry-specific professional organizations

After the expert panel reviewed the instrument for content to ensure it measured what was intended to be measured, the instrument was sent to a psychometrician with expertise in survey question development. He reviewed the individual items and provided feedback about the structure of the overall all instrument, such as including section-specific directions and response scale options.

The instrument was field-tested by physicians within the researcher’s personal network. This level of review ensured the items were easily understood by the intended audience and assessed the length of time needed to complete the survey. Feedback indicated the instrument was appropriate and took approximately 10 minutes to complete. Data from the field test were excluded from the study, as were the field-test respondents because of their personal connection to the researcher.
Reliability

Reliability is the extent to which an assessment tool or instrument produces consistent results (McMillan & Schumacher, 2010). The intent of this study was to measure the physician’s perception at a single point in time. This study was not designed to develop an instrument to measure consistency of physician perceptions, as perceptions may change over time. Therefore, the reliability of the instrument was less of concern than the validity. The study instrument was adapted from interview protocols from other studies on the topic.

Data Analysis

The survey data collected from the Qualtrics web-based platform were transferred into the Statistical Package for the Social Sciences (SPSS) to perform data manipulation and analysis. The data were first checked for errors and outliers using visual observations and descriptive statistics such as the mean, mode, and range. Once the data were cleaned and verified, descriptive statistics were used to analyze the data (Williams, 2004).

To address the research questions, descriptive statistics were used to summarize the responses on knowledge and impact. This included percentages, means, and standard deviations. Data were grouped by ACO characteristics, participating healthcare organization characteristics, physician age, gender, years of practice, and specialty area to investigate similarities and differences between the groups. The two open-ended questions were coded using Atlas.ti to examine themes and trends in the responses.
Limitations

Limitations of the study are those shortcomings, characteristics of design, conditions, or influences typically out of control of the researcher. Limitations potentially restrict methodology and conclusions that can be drawn from the data (McMillan & Schumacher, 2010; Thomas, Nelson, & Silverman, 2015).

This study had several limitations. First, the study was limited to physicians in the participating healthcare organizations, in southern California, which may not be representative of physicians in other organizations or in other states across the country. Second, physicians self-reported their level of knowledge of the different components of the ACOs; it is possible the physicians reported higher levels of knowledge than was accurate based on their perceptions, potential social bias, or those prone to organizational activities. Third, the study was limited to the physician perspective and it is possible administrators or other healthcare stakeholders would rate physicians’ level of knowledge about the ACO differently. The responses were limited to individual knowledge and reflected their view and not that of the organization or leadership. Also, as with all survey research, the content and meaning of each question was subject to the respondent’s interpretation and meaning. Finally yet importantly, the sample size of this study was relatively small compared to the population of physicians in southern California, so the degree to which results can be generalized remains to be determined.

Summary

The purpose of this study was to identify how knowledgeable physicians were about the Triple Aim goals and performance measures of the ACO model and their
perceptions of the impact of ACO requirements on their ability to meet patient needs inside southern California-based ACOs.

To address the research questions, this study employed a quantitative research design to explore the knowledge and perception of physicians in southern California ACOs. This study leveraged industry experts to construct a survey with meaning and value to healthcare reform and worked with a panel of experts to ensure the survey instrument was valid and measured what was intended.

The population for this study was licensed primary care and specialty physicians practicing medicine in southern California and included all allopathic physicians (MDs) and osteopathic physicians (DOs). The target population was ACO physicians from healthcare organizations whose leadership agreed to participate in this study.

Data were analyzed by research question. Descriptive statistics (e.g., frequencies, percentages, means, standard deviations) were used to describe physician knowledge about the Triple Aim goals and performance measures of the ACO model, and their perceptions of how the requirements impacted their ability to meet patient needs.

Chapter III presented the research methodology for this quantitative study. Chapter IV presents the findings for each of the research questions, including statistical data as appropriate. Chapter V provides a summary of findings, implications, and interpretations, and offers recommendations for changes to practice and opportunities for future research.
CHAPTER IV: RESEARCH, DATA COLLECTION, FINDINGS

Overview

Chapter IV presents research findings from the analysis of original data collected from southern California physicians who participated in the physician knowledge of accountable care organizations survey. The chapter begins with a review of the purpose of the study, the research questions, and study methodology. Following these sections, the chapter focuses on data analysis, presentation of the descriptive statistics, and findings by research question. The chapter concludes with a summary of the findings.

Purpose Statement

The purpose of this quantitative study was to identify how knowledgeable physicians were about the Triple Aim goals and performance measures of the ACO model and their perceptions of the impact of ACO requirements on their ability to meet patient needs inside southern California-based ACOs.

Research Questions

The following research questions provided a framework to guide this study:

1. To what extent are ACO physicians knowledgeable about the Triple Aim goals of an ACO?
2. To what extent are ACO physicians knowledgeable about the performance measures of an ACO?
3. To what degree do physicians perceive that the Triple Aim goals and aspects of the performance measures affected their ability to meet patient needs?
Research Methods and Data Collection Procedures

A quantitative approach was used to explore physician knowledge of the ACO Triple Aim goals and performance indicators, as well as their perceptions of the impact of these requirements on their ability to meet patient needs. Licensed California physicians from participating healthcare organizations were asked to complete a web-based survey through their organization’s administration. Additional individual physicians were recruited through the researcher’s network. Descriptive statistics were conducted using SPSS software and the results were summarized in tables and narrative form.

The electronic survey administered in spring 2016 was comprised of 16 questions including demographic information, the physician’s level of knowledge about the Triple Aim goals and performance measures of the ACO model, and the physician’s perception of the impact of ACO requirements on their ability to meet patient needs. Through consultation, academic research experts recommended a Likert-type scale; questions that measured knowledge were based on a 4-point Likert-type scale whereas questions that assessed perception of impact were based on a 7-point Likert-type scale. Purposeful sampling was used to identify healthcare organizations and individuals to participate in the study. Participating organizations sent an email invitation containing an active hyperlink to the online survey to their respective ACO physicians. Reminder emails were sent by the participating organizations, as needed, to encourage replies. An incentive to respond offered a chance to win one of three Amazon gift cards that were raffled to those who completed the survey using a graduated payout schedule.

All of the participants were informed of the minimal risk for participation in the research study, and all were assured of their anonymity through the use of a participant
agreement and informed consent notice. Appropriate measures were taken to ensure confidentiality although no identifying data were collected. The instrument was distributed through email messaging containing a hyperlink to an electronic survey. The survey remained open for a period of three weeks. Study participation was voluntary. Data were stored in a secure location for five years post analysis and then destroyed.

**Population**

The population for this study was licensed primary care and specialty physicians practicing medicine in southern California ACOs, including all allopathic physicians (MD) and osteopathic physicians (DO). In the relevant population, respondents met the study criteria in two representative healthcare organizations whose leadership agreed to provide access to their physicians for this study. The organizations were Accountable Care Clinical Services – Orange and Monarch HealthCare, Inc. Other participating physicians were recruited through the researcher’s professional network.

**Sample**

The final study sample included 75 physicians who were licensed primary care and specialty physicians practicing medicine in southern California. Five respondents came from Accountable Care Clinical Services - Orange and 48 participants were from Monarch HealthCare, Inc. Twenty two individual physicians who participated in the study were not associated with the aforementioned organizations. Individual physicians were recruited through snowball sampling of the researcher’s professional network. Of the final sample, ten responses were excluded from analysis as they were not associated with a southern CA ACO and/or did not complete a sufficient number of questions on the survey. The survey participation is represented in Table 3.
Table 3

Survey Participants

<table>
<thead>
<tr>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monarch HealthCare, Inc.</td>
<td>48</td>
</tr>
<tr>
<td>Individual Physicians</td>
<td>22</td>
</tr>
<tr>
<td>Accountable Care Clinical Services - Orange</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
</tr>
</tbody>
</table>

Demographic Data

At the beginning of the survey, participants were asked whether they belonged to an ACO. The vast majority, 76.0% indicated they were part of an ACO, 8.0% were not part of an ACO, 2.7% were unsure if they belonged to an ACO, and 13.3% either did not answer the question or were removed from the study (Table 4).

Table 4

Physician Association with an ACO

<table>
<thead>
<tr>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
</tr>
<tr>
<td>Not Sure</td>
<td>2</td>
</tr>
<tr>
<td>Missing or removed from analysis</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
</tr>
</tbody>
</table>

Several types of ACO models were in operation during the study timeframe, including the Pioneer, Medicare Shared Savings Program (MSSP), Commercial Health Plan, Advanced Payment Model, and Next Gen. Within the study, respondents represented all models with the exception of the Advanced Payment ACO model. As illustrated in Table 5, the Pioneer model was the most common among the participants (56.3%). This was followed by the MSSP, Commercial Health Plan ACO model, Next
Gen model, and some other model not included in the choice options, for example, the academic hospital model.

Table 5

*Types of ACOs Represented*

<table>
<thead>
<tr>
<th>Model</th>
<th>n</th>
<th>%</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pioneer Model ACO</td>
<td>36</td>
<td>48.0</td>
<td>56.3</td>
</tr>
<tr>
<td>Medicare Shared Savings Program ACO</td>
<td>11</td>
<td>14.7</td>
<td>17.2</td>
</tr>
<tr>
<td>Commercial Health Plan ACO</td>
<td>5</td>
<td>6.7</td>
<td>7.8</td>
</tr>
<tr>
<td>Not Currently part of an ACO</td>
<td>5</td>
<td>6.7</td>
<td>7.8</td>
</tr>
<tr>
<td>Next Gen ACO</td>
<td>4</td>
<td>5.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>4.0</td>
<td>4.7</td>
</tr>
<tr>
<td>Advanced Payment ACO</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Missing responses</td>
<td>11</td>
<td>14.7</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>75</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

The most common physician organization structure was the Independent Practice Association (71.0%), followed by the Employed Physicians (26.7%) and the Physician Health Organization (23.0%) models (Table 6).

Table 6

*Physician Organizational Structure*

<table>
<thead>
<tr>
<th>Model</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Practice Association (IPA)</td>
<td>44</td>
<td>71.0</td>
</tr>
<tr>
<td>Employed Physicians</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td>Physician Hospital Organization (PHO)</td>
<td>14</td>
<td>23.0</td>
</tr>
<tr>
<td>Aligned Physicians Organization</td>
<td>8</td>
<td>13.3</td>
</tr>
<tr>
<td>Clinically Integrated Organization</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td>Foundation Model</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td>Not Sure</td>
<td>3</td>
<td>5.2</td>
</tr>
<tr>
<td>Owned Health Plan</td>
<td>3</td>
<td>5.2</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3.4</td>
</tr>
</tbody>
</table>

*Note. N=55; some respondents belonged to more than one type of physician organization structure*
Within the ACO, multiple healthcare provider services were offered, including primary care, emergency services, rehabilitation, behavioral health, skilled nursing, pediatrics, palliative or hospice care, home health or visiting nursing, pharmacy, and urgent care. Findings showed a mix of health services provided by the ACOs. As shown in Table 7, participating ACO physicians mostly provided primary care services (85.0%), followed by Urgent Care services (35.7%) and Home Health or Visiting Nurse services (32.7%).

Table 7

*Services Provided by the ACO*

<table>
<thead>
<tr>
<th>Service</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Care</td>
<td>51</td>
<td>85.0</td>
</tr>
<tr>
<td>Urgent Care</td>
<td>20</td>
<td>35.7</td>
</tr>
<tr>
<td>Home Health or Visiting Nurse</td>
<td>18</td>
<td>32.7</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>16</td>
<td>28.6</td>
</tr>
<tr>
<td>Skilled Nursing</td>
<td>16</td>
<td>28.6</td>
</tr>
<tr>
<td>Palliative or Hospice</td>
<td>15</td>
<td>27.3</td>
</tr>
<tr>
<td>Emergency</td>
<td>14</td>
<td>25.0</td>
</tr>
<tr>
<td>Behavioral Health</td>
<td>13</td>
<td>23.2</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>11</td>
<td>19.6</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>10</td>
<td>18.2</td>
</tr>
<tr>
<td>Don’t know/Unsure</td>
<td>8</td>
<td>14.3</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>5.5</td>
</tr>
</tbody>
</table>

*Note.* N= 55; most ACOs provided more than one type of service

The participants were further asked to define services provided by identifying their individual area of medical specialty. As shown in Table 8, the top specialties were Family Practice (33.3%), Internal Medicine/General Medicine (21.7%), and Cardiology (11.7%).
Table 8

Physicians Specialties

<table>
<thead>
<tr>
<th>Specialty</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Practice</td>
<td>20</td>
<td>33.3</td>
</tr>
<tr>
<td>Internal Medicine/General</td>
<td>13</td>
<td>21.7</td>
</tr>
<tr>
<td>Cardiology</td>
<td>7</td>
<td>11.7</td>
</tr>
<tr>
<td>Primary Care</td>
<td>6</td>
<td>10.0</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>6.7</td>
</tr>
<tr>
<td>Hospitalist</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>Administration</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Ambulatory Care</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Hematology/Oncology</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Infectious Diseases</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Orthopedic Surgery</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Pathology</td>
<td>1</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Note. N=60

Participants graduated medical school between the years of 1960 and 2013 and reported a range of 3 to 56 years of practice following medical school, with an average of 21 years of practice. Of the 60 participants who responded to the question regarding gender, 39 (65%) were male and 21 (35%) were female. The frequency counts for age ranges are displayed in Table 9; the most frequent age range selected was 45 to 54 year old (26.7%), followed by 55 to 64 years old (22.7%), and 35 to 44 years old (14.7%).
Table 9

Frequency of Age Categories

<table>
<thead>
<tr>
<th>Age Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 to 34 years old</td>
<td>5</td>
<td>6.7</td>
</tr>
<tr>
<td>35 to 44 years old</td>
<td>11</td>
<td>14.7</td>
</tr>
<tr>
<td>45 to 54 years old</td>
<td>20</td>
<td>26.7</td>
</tr>
<tr>
<td>55 to 64 years old</td>
<td>17</td>
<td>22.7</td>
</tr>
<tr>
<td>65 to 74 years old</td>
<td>4</td>
<td>5.3</td>
</tr>
<tr>
<td>75 to 84 years old</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Note. N=59*

Presentation and Analysis of Data

Findings for Research Question 1

Research Questions 1 was: *To what extent are ACO physicians knowledgeable about the Triple Aim goals of an ACO?*

To address this research question, descriptive statistics were used to assess the current situation and identify gaps in ACO knowledge of the participants. The participants were asked to self-assess their level of knowledge about each of the ACO Triple Aim goals: improving the experience of care, improving the health of populations, and reducing the cost of healthcare. This was measured by a 4-point Likert-type scale. The level of knowledge about the three goals varied. Respondents’ scores are summarized in Table 10 and indicated that in general, physicians had the most knowledge about the goal of reducing the cost of healthcare, as indicated by the number of respondents who indicated *moderately* or *extremely knowledgeable* (78.7%). In contrast, physicians were least knowledgeable about the goal of improving the experience of care, with just over half (57.4%) indicating they were *moderately* or *extremely knowledgeable.*
Table 10

**Physician Knowledge of ACO Triple Aim Goals**

<table>
<thead>
<tr>
<th>Triple Aim Goals</th>
<th>Not at All Knowledgeable</th>
<th>Somewhat Knowledgeable</th>
<th>Moderately Knowledgeable</th>
<th>Extremely Knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the Experience of Care</td>
<td>6</td>
<td>20</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>9.8%</td>
<td>32.8%</td>
<td>29.5%</td>
<td>27.9%</td>
</tr>
<tr>
<td>Improving the Health of Populations</td>
<td>2</td>
<td>16</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>3.3%</td>
<td>26.2%</td>
<td>39.3%</td>
<td>31.1%</td>
</tr>
<tr>
<td>Reducing the Cost of Healthcare</td>
<td>3</td>
<td>10</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>4.9%</td>
<td>16.4%</td>
<td>41.0%</td>
<td>37.7%</td>
</tr>
</tbody>
</table>

N=61

**Findings for Research Question 2**

Research Questions 2 was: *To what extent are ACO physicians knowledgeable about the performance measures of an ACO?*

The participants were asked a question concerning their perceived level of knowledge on ACO performance indicators in general. The majority of the physicians indicated that in general they were *extremely knowledgeable* (45.9%) about the ACO performance indicators, followed by *moderately knowledgeable* (26.2%), *somewhat knowledgeable* (23.0%), and *not at all knowledgeable* (4.9%).

The ACO performance indicators were disaggregated into four quality domains as defined by CMS (2014a). Thirty-three individual performance measures were used to determine if a Pioneer or MSSP ACO qualified for shared savings (Shortell et al., 2015). For the purpose of this study, physicians were probed about their knowledge of the four individual quality domains: patient/caregiver experiences, care coordination/safety, preventative health, and at-risk populations including diabetes, hypertension, ischemic...
vascular disease, heart failure, and coronary/artery disease. Participants were asked to rate their level of knowledge about each quality domain on a 4-point Likert scale from *not at all knowledgeable* to *extremely knowledgeable*. As shown in Table 11, most physicians indicated a moderate or above level of knowledge about the ACO performance indicators domains. Physicians were most knowledgeable about the domains related to at-risk populations, with at least 75% of physicians indicating they were *moderately or extremely* knowledgeable for all but one of the at-risk populations, coronary/artery disease (62.3%). In contrast, physicians were least knowledgeable about the care coordination/safety domain, with only 59.6% marking *moderately or extremely knowledgeable*.

Table 11

**Physician Knowledge of ACO Quality Domain Performance Indicators**

<table>
<thead>
<tr>
<th>Quality Domain</th>
<th>Not at All Knowledgeable</th>
<th>Somewhat Knowledgeable</th>
<th>Moderately Knowledgeable</th>
<th>Extremely Knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient/Caregiver Experience</td>
<td>5</td>
<td>8.2</td>
<td>18</td>
<td>29.5</td>
</tr>
<tr>
<td>Care Coordination/Safety</td>
<td>5</td>
<td>8.1</td>
<td>20</td>
<td>32.3</td>
</tr>
<tr>
<td>Preventative Health</td>
<td>3</td>
<td>4.8</td>
<td>14</td>
<td>22.2</td>
</tr>
<tr>
<td>At Risk Populations</td>
<td>3</td>
<td>5.2</td>
<td>11</td>
<td>19.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3</td>
<td>5.1</td>
<td>8</td>
<td>13.6</td>
</tr>
<tr>
<td>Hypertension</td>
<td>3</td>
<td>5.1</td>
<td>13</td>
<td>22.0</td>
</tr>
<tr>
<td>Ischemic Vascular Disease</td>
<td>4</td>
<td>6.7</td>
<td>9</td>
<td>15.0</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>3</td>
<td>5.0</td>
<td>12</td>
<td>20.0</td>
</tr>
<tr>
<td>Coronary/Artery Disease</td>
<td>5</td>
<td>8.2</td>
<td>18</td>
<td>29.5</td>
</tr>
</tbody>
</table>

N= 58
Findings for Research Question 3

Research Question 3 was: To what degree do physicians perceive that the Triple Aim goals and aspects of the performance measures affected their ability to meet patient needs?

The integrated ACO model was categorized into eight aspects of performance measures (Koury et al., 2014). These aspects included ACO organization and structure, health information technology (IT) for care coordination, finance and contracts, managing clinical care, performance reporting, and governance, leadership and management. Physicians were asked to assess each aspect of the ACO model in terms of how they perceived the requirement impacted their ability to meet patient needs. The questions were on a 7-point Likert scale ranging from 1=extremely negative impact to 7=extremely positive impact.

ACO organization and structure. The aspect of ACO organization and structure was further broken down into six specific categories: ACO definition, organizational leadership, organizational structure, ACO capabilities, physician contract structure, and final ACO rulings by CMS. Overall, participants perceived ACO organization and structure had a slightly positive impact on their ability to meet patient needs, with means ranging between 4.39 for final ACO rulings by CMS and 5.09 for organizational leadership (Table 12).
Table 12

*Physician Ability to Meet Patient Needs: ACO Organization and Structure*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO definition</td>
<td>59</td>
<td>4.81</td>
<td>1.28</td>
</tr>
<tr>
<td>Organizational Leadership</td>
<td>58</td>
<td>5.09</td>
<td>1.44</td>
</tr>
<tr>
<td>Organizational Structure</td>
<td>59</td>
<td>4.95</td>
<td>1.58</td>
</tr>
<tr>
<td>ACO Capabilities</td>
<td>59</td>
<td>4.97</td>
<td>1.52</td>
</tr>
<tr>
<td>Physician Contract Structure</td>
<td>59</td>
<td>4.73</td>
<td>1.62</td>
</tr>
<tr>
<td>Final rulings ACOs by CMS</td>
<td>59</td>
<td>4.39</td>
<td>1.49</td>
</tr>
</tbody>
</table>

**Health IT for care coordination.** The aspect of health IT for care coordination was further defined by elements of monitoring, reporting, and implementation of IT/EHR (Electronic Health Records). Respondents reported health IT for care coordination had a slightly positive impact in their ability to meet patient needs, with mean ratings ranging between 4.47 and 4.68. All facets in this area had a slightly positive impact; however, participants deemed monitoring had the most positive impact ($M = 4.68$) as illustrated in Table 13.

Table 13

*Physician Ability to Meet Patient Needs: Health IT for Care Coordination*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring</td>
<td>59</td>
<td>4.68</td>
<td>1.59</td>
</tr>
<tr>
<td>Reporting</td>
<td>59</td>
<td>4.47</td>
<td>1.68</td>
</tr>
<tr>
<td>Implementation of IT/EHR</td>
<td>59</td>
<td>4.41</td>
<td>1.73</td>
</tr>
</tbody>
</table>

**Finance and contracts.** Defining the aspect of finance and contract were cost reductions methods, upfront investment costs, bonuses/incentives based on saving and outcomes, bonus pool/upside risk, and dual risk. The mean ratings ranged between 3.81 and 5.02 indicating both a slight positive and slight negative impact on their ability to meet patient needs. As shown in Table 14, bonuses/incentives based on savings and
outcomes had the most positive impact ($M = 5.02$) whereas upfront investment costs had a slightly negative impact ($M = 3.81$).

Table 14

*Physician Ability to Meet Patient Needs: Finance and Contracts*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Reduction Methods</td>
<td>58</td>
<td>4.50</td>
<td>1.60</td>
</tr>
<tr>
<td>Upfront Investment Costs</td>
<td>58</td>
<td>3.81</td>
<td>1.61</td>
</tr>
<tr>
<td>Bonuses/Incentives based on savings and outcomes</td>
<td>59</td>
<td>5.02</td>
<td>1.33</td>
</tr>
<tr>
<td>Bonus Pool/Upside Risk</td>
<td>59</td>
<td>4.85</td>
<td>1.32</td>
</tr>
<tr>
<td>Dual Risk</td>
<td>59</td>
<td>4.31</td>
<td>1.38</td>
</tr>
</tbody>
</table>

**Managing clinical care.** The aspect of managing clinical care was further categorized by quality outcomes, individual patient experience improvements, Medicare fee-for-service population, value-based care, and evidenced-based guidelines. Generally, the participants reported managing clinical care had a slightly positive impact in meeting patient needs, with mean ratings between 4.63 and 5.16. As can be seen in Table 15, physicians believed quality outcomes had the most positive impact ($M = 5.16$).

Table 15

*Physician Ability to Meet Patient Needs: Managing Clinical Care*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Outcomes</td>
<td>56</td>
<td>5.16</td>
<td>1.172</td>
</tr>
<tr>
<td>Individual Patient Experience Improvement</td>
<td>57</td>
<td>4.82</td>
<td>1.182</td>
</tr>
<tr>
<td>Medicare Fee-for-Service Population</td>
<td>59</td>
<td>4.66</td>
<td>1.183</td>
</tr>
<tr>
<td>Value-based Care</td>
<td>57</td>
<td>4.63</td>
<td>1.277</td>
</tr>
<tr>
<td>Evidenced-based Guidelines</td>
<td>58</td>
<td>4.91</td>
<td>1.204</td>
</tr>
</tbody>
</table>

**Performance reporting.** The aspect of performance reporting was further delineated into three specific areas: physician quality reporting system (PQRS), PQRS
group practice reporting option (GPRO), and data sharing. Overall, physicians thought performance reporting had a slightly positive to no impact on their ability to meet patient needs, with means ranging from 4.14 and 4.46. As can be seen in Table 16, physicians believed data sharing had the most positive impact ($M = 4.46$).

Table 16

*Physician Ability to Meet Patient Needs: Performance Reporting*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>PQRS</td>
<td>58</td>
<td>4.45</td>
<td>1.314</td>
</tr>
<tr>
<td>GPRO</td>
<td>57</td>
<td>4.14</td>
<td>1.274</td>
</tr>
<tr>
<td>Data Sharing</td>
<td>59</td>
<td>4.46</td>
<td>1.454</td>
</tr>
</tbody>
</table>

**Governance, leadership, and management.** Governance, leadership, and management was further defined by three categories: role of the health plan in the ACO, physician-hospital partnerships, and cultural change. Respondents reported governance, leadership, and management had a slightly positive to no impact in their ability to meet patient needs, with means ranging from 4.16 and 4.43. As illustrated in Table 17, participants deemed cultural change in the ACO as having the most positive impact ($M = 4.43$).

Table 17

*Physician Ability to Meet Patient Needs: Governance, Leadership, and Management*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the Health Plan in the ACO</td>
<td>56</td>
<td>4.30</td>
<td>1.320</td>
</tr>
<tr>
<td>Physician-Hospital Partnerships</td>
<td>58</td>
<td>4.16</td>
<td>1.449</td>
</tr>
<tr>
<td>Cultural Change</td>
<td>58</td>
<td>4.43</td>
<td>1.512</td>
</tr>
</tbody>
</table>
Aspects that positively impacted their ability to meet patient needs.

Physicians were asked which of the aspects had the most positive impact on their ability to meet patient needs. As shown in Table 18, three aspects of the performance measures were rated the most positively: managing care coordination (29.3%), health IT for care coordination (27.6%), and ACO organization and structure (22.4%).

Table 18

Aspects That Impacted Physician Ability to Meet Patient Needs in a Positive Way

<table>
<thead>
<tr>
<th>Aspect</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing Care Coordination</td>
<td>17</td>
<td>29.3</td>
</tr>
<tr>
<td>Health IT for Care Coordination</td>
<td>16</td>
<td>27.6</td>
</tr>
<tr>
<td>ACO Organization and Structure</td>
<td>13</td>
<td>22.4</td>
</tr>
<tr>
<td>Performance Reporting</td>
<td>5</td>
<td>8.6</td>
</tr>
<tr>
<td>Governance, Leadership, and Management</td>
<td>4</td>
<td>6.9</td>
</tr>
<tr>
<td>Finance and Contracts</td>
<td>3</td>
<td>5.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Additional data collected through an open-ended question further investigated the participants’ perspectives on ACO requirement areas that positively impacted their ability to meet patient needs. Central themes emerged for each domain based upon their answers. Table 19 provides example quotations from respondents for each of the domains, followed by a more detailed description for each domain.
Table 19

*Perceptions of Aspects that Positively Impacted Ability to Meet Patient Needs*

<table>
<thead>
<tr>
<th>Aspects of Performance Requirements</th>
<th>Example of Participant Quotations</th>
</tr>
</thead>
</table>
| Managing Care Coordination (n=17)   | • Standardization and application of care/guidelines/best practices.  
|                                     | • It was helpful in managing patient chronic conditions and improving patient care.  
|                                     | • It is the only domain that directly impacts improved clinical care to individual patients.  
|                                     | • Comprehensive approach limits unnecessary testing and over utilization by patients.  |
| Health IT for Care Coordination (n=16) | • EMR is superior to old paper charts.  
|                                     | • Managing medical records more efficiently.  
|                                     | • Simplified and expedited the decision-making and implementation of clinical treatment.  
|                                     | • Information is more acceptable and clear.  |
| ACO Organization and Structure (n=13) | • ACO organization and structure allows patient to be monitored and it can eliminate duplication of efforts.  
|                                     | • I can be identified as the primary care physicians for this population to be incentivized eventually for providing high quality low cost care.  
|                                     | • Organization and structure allow for improved delivery of care and care coordination to the local population of patients.  
|                                     | • Helps me to understand entire system and what is expected.  |
| Performance Reporting (n=5)         | • Use of evidence based therapies and use of preventative tools are the two single most important factors that positively impact care and reduce costs / fragmentation of care only breeds miscommunication redundancy and increases cost and negatively impacts care.  
|                                     | • It is collecting information for continuity.  |
| Governance, Leadership, and Management (n=4) | • The leadership provided education about the goals of the ACO, potential upside and downside risks and the potential positive impacts on patient outcomes and patient experience. Sharing that vision in a compelling way was the most impactful factor in getting physicians on board and committed to the success of the ACO.  
|                                     | • They have created goals and objectives, standard process to use to achieve the goals.  |
| Finance and Contracts (n=3)         | • Financial incentive had a positive impact on making it worthwhile to participate.  |

*Note.* N=58
With regard to the managing care coordination aspect, all but two of the respondents specifically mentioned providing quality care to patients as the reason for marking this domain as having the greatest positive impact. For example, one respondent stated,

If “managing clinical care” means individual physician management of the care of the patient, then yes, this is what improves outcomes. Systematic approaches set up by administrative non-providers who don’t understand how to care for people seem to be ruining our ability to do our jobs.

Health IT for care coordination was also commonly cited as having the greatest positive impact. Among these respondents, their reasons for selecting Health IT focused on the improved efficiencies from the increased use of technology. Within the ACO organization and structure aspect, respondents perceived that an improved delivery system that reduced costs contributed to the positive impact in meeting patient needs. Fewer respondents identified the other aspects as having the greatest positive impact on their ability to meet patient needs.

**Aspects that negatively impacted the physicians’ ability to meet patient needs.** Conversely, the frequency of aspects having a negative impact on the physicians’ ability to meet patient needs is illustrated in table 20. The top aspects to have a highly negative impact on the physicians’ ability to meet patient needs were performance reporting (30.9%) followed by health IT for care coordination and finance and contracts (27.3%).
Table 20

*Aspects that Impacted Physician Ability to Meet Patient Needs in a Negative Way*

<table>
<thead>
<tr>
<th>Aspects</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Reporting</td>
<td>17</td>
<td>30.9</td>
</tr>
<tr>
<td>Health IT for Care Coordination</td>
<td>15</td>
<td>27.3</td>
</tr>
<tr>
<td>Finance and Contracts</td>
<td>15</td>
<td>27.3</td>
</tr>
<tr>
<td>Governance, Leadership, and Management</td>
<td>5</td>
<td>9.1</td>
</tr>
<tr>
<td>ACO Organization and Structure</td>
<td>2</td>
<td>3.6</td>
</tr>
<tr>
<td>Managing Care Coordination</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>55</td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Data collected through an open-ended question further investigated the participants’ perspectives on aspects of the ACO that negatively impacted their ability to meet patient needs. Dominant themes emerged for each domain based upon respondent answers. Table 21 provides example quotations from respondents for each of the domains, followed by a more detailed description for each domain.

Table 21

*Perceptions of Aspects that Negatively Impacted Ability to Meet Patient Needs*

<table>
<thead>
<tr>
<th>Aspects of Performance Requirements</th>
<th>Example of Participant Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Reporting (n=17)</td>
<td>• Takes time away from direct patient care.</td>
</tr>
<tr>
<td></td>
<td>• Burdensome for providers who are already limited in time.</td>
</tr>
<tr>
<td></td>
<td>• Does not really help the patients and creates more work for the physicians.</td>
</tr>
<tr>
<td></td>
<td>• Performance reporting takes up a lot of extra time that may have been further utilized for patient care activities.</td>
</tr>
<tr>
<td></td>
<td>• Extremely time consuming and takes away from patient care trying to meet the demands of data collection just to earn the financial reward in order to remain afloat as a business.</td>
</tr>
<tr>
<td></td>
<td>• Undue time required to report information that did not directly improve patient care.</td>
</tr>
<tr>
<td>Health IT for Care Coordination (n=15)</td>
<td>• EHR implementation was a painful process and has had ongoing negative effects on provider productivity and satisfaction. Providers tend to develop personal shortcuts</td>
</tr>
</tbody>
</table>
and preferences that negatively impact the validity of data since it is easier to enter the same diagnoses and data, in the same way every time, rather than trying to figure out the most accurate diagnosis. The use of an EHR also negatively affects the patient perception of their interaction with their providers in many cases, since they see the physician focused on entering data into the computer rather than being focused on the patient.

- It takes away from the physician patient relationship. Time spent entering data is time lost interacting with the patient.
- The demand of data sharing and reporting with complicated IT system has created extra work load for all the physicians.
- Expense, time, negative change on the whole conversation/interaction with patient.
- IT consistently promises and fails to deliver. Too much is pushed down stream to healthcare providers so that we become data-entry drones. It creates a culture of caring for data and not for patients.

Finance and Contracts (n=15)

- CMS contracts and delays actually let us lose over $20,000. This happened because CMS was not clear in what information they were requesting and after 3 months of going back and forth in determining the exact application that they needed, we lost time that CMS will not allow us to bill. This was equal to over 500 patients.
- Too much paperwork and insurance companies dictating what doctors are paid for their work.
- Humongous cost involved. Need to hire more personnel to be able to do this.

Governance, Leadership, and Management (n=5)

- Management/administrators requiring us to spend more time doing paperwork than directly caring for patients.
- Poor communication with EMR.
- Didn’t set up infrastructure correctly initially since it was a new model.

In relation to the performance reporting domain, a majority of respondents specifically mentioned time away from the patient as the reason for marking this aspect as having the greatest negative impact. For example, one respondent stated, “Extremely
time consuming and takes away from patient care trying to meet the demands of data collection just to earn the financial reward in order to remain afloat as a business.”

Health IT for care coordination was also commonly cited as having the greatest negative impact. Among these respondents, their reasons for selecting Health IT focused on time away from patients, in addition to negative perceptions by patients. As one participant offered, “It creates a culture of caring for data and not for patients.” Finances and contracts was additionally cited as having the greatest negative impact. Among these respondents, their reasons for identifying finance and contracts targeted costs due to delays and the demands of required paperwork that resulted in reduced physician productivity. Fewer respondents identified the other aspects as having the greatest negative impact on the physician’s ability to meet patient needs.

Summary

Chapter IV provided a restatement of the study purpose and research questions. In addition, it included a summation of the methodology, data collection process, population and sample, and associated demographic data. This chapter focused on the presentation and analysis of original data collected necessary to address the three research questions posed. Chapter V provides a summary of the key findings. It also presents conclusions drawn from the data and implications for action. The chapter also includes recommendations for future study.
CHAPTER V: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Healthcare spending in the US stirs political and philosophical debate. Historic healthcare reform events culminated in the latest attempt at cost containment, the Accountable Care Act (ACA). At the core of the ACA was the Accountable Care Organization (ACO), a payment delivery model simultaneously focused on the Triple Aim goals of better care for patients, better health for a population, and reducing per capita costs (Berwick et al., 2008). The ACA required the physician to be at the core of the ACO (CMS, 2011).

Physicians participating in ACOs transformed the way they practiced medicine. Transformational change, such as that happening in the healthcare field, required leadership and employees alike to shift their mindset and adopt new practices for implementation and sustainability (Anderson & Ackerman-Anderson, 2010). If physicians were unclear about the requirements and performance measures of the ACO, they would be ill prepared to implement the value-based payment model and the sustainability of the ACO model would be at risk.

The purpose of this quantitative study was to identify how knowledgeable physicians were about the Triple Aim goals and performance measures of the ACO model and examine their perceptions of the impact of ACO requirements on their ability to meet patient needs inside southern California-based ACOs.

The following research questions provided a framework to guide this study:

1. To what extent are ACO physicians knowledgeable about the Triple Aim goals of an ACO?
2. To what extent are ACO physicians knowledgeable about the performance measures of an ACO?

3. To what degree do physicians perceive that the Triple Aim goals and aspects of the performance measures affected their ability to meet patient needs?

To address the research questions, a descriptive quantitative study was conducted. Data were collected through a web-based survey that asked about physician knowledge of the ACO Triple Aim goals and performance indicators, as well as their perceptions of how aspects of the performance requirements impacted their ability to meet patient needs. The population for the study was licensed primary care and specialty physicians practicing medicine in California. The sample included 75 southern California physicians within ACOs or ACO look-alikes.

**Major Findings**

**Finding for Research Question 1**

Research Question 1 was designed to identify the level of knowledge of the Triple Aim goals among southern California physicians who belonged to an ACO. Triple Aim goals were defined as improving the experience of care, improving the health of populations, and reducing the cost of healthcare (Berwick et al., 2008). Findings showed a range of knowledge regarding the ACO Triple Aim goals. Almost 80% of the respondents reported they were most knowledgeable about the single goal of reducing the cost of healthcare. Aggregated data suggested most physicians had some knowledge about all three goals. However, a gap of knowledge was found; specifically 17% of respondents indicated they had no knowledge about Triple Aim goals suggesting the need for training.
Finding for Research Question 2

Research Question 2 focused on the level of knowledge among physicians as it pertained to ACO quality performance measures. Findings showed almost half of participating physicians were extremely knowledgeable about the performance measures, yet almost 25% reported being somewhat or not at all knowledgeable about the measures. A gap of knowledge existed among ACO physicians regarding quality performance indicators of the ACO model.

Finding for Research Question 3

Research Question 3 examined the physicians’ perceptions of how the aspects of the ACO performance measures impacted their ability to meet patient needs. Findings showed a slightly positive impact from each of eight aspects of ACO performance. Managing care, health IT for care coordination, and ACO organization and structure had the greatest positive impact in meeting patient needs. Open-ended follow-up questions revealed a richer perspective from respondents about why they thought the selected aspect affected their ability to meet patient needs. Participants offered the following reasons for these three aspects having the most positive impact: providing quality care to patients, improved efficiencies from the increased use of technology, and an improved delivery system that reduced costs. This suggests portions of the current ACO model were working. In contrast, performance reporting, health IT for care coordination, and finances and contracts had the greatest negative impact in meeting patient needs. Commonly cited reasons to support these aspects as having the greatest negative impact were time away from the patients, negative perceptions by patients, and costs due to
delays and required paperwork that reduced physician productivity. These findings implied the need to improve the current ACO model.

**Unexpected Findings**

The ACA passed in 2010 and reshaped the healthcare industry. It introduced the ACO, a new financial and care delivery model. It was surprising that a high proportion of participants reported such limited knowledge about the ACO goals, performance indicators, and aspects of ACO requirements. Nearly half of respondents marked they were *not at all* or *somewhat* knowledgeable, which was a high percentage given the inherent social bias of wanting to report higher levels of knowledge. These results were surprising as the respondents were California physicians who were working under the ACO principles.

Another unexpected finding was that health IT for care coordination was both the second most positive domain for impacting patient care as well the second most negative domain for impacting patient care. New technology, when implemented properly, had the ability to increase efficiencies and access to patient data. However, difficulties with the implementation resulted in multiple issues and use of technology decreased time with patients as physicians worked through the technology glitches or complicated data entry. Electronic health record (EHR) solutions captured data, yet poor reporting features and difficulty analyzing the data caused systemic problems with care management.

**Conclusions**

The US health care system exposes a contentious backdrop between physicians and policymakers with misaligned objectives, variations in patient outcomes, systemic inefficiencies, fiscal redundancies, and troubled relationships in both public and
government entities (Sultz & Young, 1999). Authorized by the ACA, the concept of ACOs emerged as a healthcare organization providing a payment and delivery model that coordinated services across primary care physicians, specialists, and hospitals. They were designed to limit growth in spending while preserving quality. A growing body of knowledge suggested current ACO models were experiencing preliminary successes and challenges, including in the areas of organization structure, health information technology, finance and contracts, managing clinical care, governance, leadership and management (Fisher & Shortell, 2010; Koury et al., 2014; Longworth, 2011; McClellan, 2015; Shortell et al., 2015). Healthcare is experiencing transformational change, shifting from a service industry to business. Transformational change creates a normal dissonance and that cannot be overlooked (Anderson & Ackerman-Anderson, 2010).

**Conclusion 1: Provide Training and Move Toward Systems Thinking**

Based on the findings from this study and the literature, it can be concluded that improvements in education and professional training are required to address the gaps of knowledge regarding the ACO goals and performance measures. Early training during a formal onboarding program is necessary when physicians and other health providers join the ACO or physician organization.

For an ACO to qualify for shared savings, they must deliver quality healthcare as reflected by Triple Aim. The simultaneous pursuit of three goals, improving the experience of care, improving the health of populations, and reducing costs of health care, are required to improve the US the health care system (Berwick et al., 2008; Hacker & Walker, 2013; IHI, 2014; Shortell et al., 2015). Triple Aim goals were interdependent and pursuing any one goal would affect the other two (Berwick et al., 2008).
Physicians knew most about two of the three goals, reducing costs of health care and improving the health of a population. With the majority of the respondents self-identified as family practice or internal/general medicine specialists, this result was understandable. Family physicians, acting as primary care physicians, are dedicated to treating the whole person and internal medicine focuses on prevention, diagnosis, and treatment of disease. Both are committed to ongoing, personal patient-physician relationships focusing on integrated care.

Additionally, a central tenet of Medicare ACOs is delivering quality healthcare as reflected in the performance indicators established by CMS. The performance benchmarks created a framework to help ensure ACOs delivered high-quality care rather than simply delivering less expensive care. ACOs created incentives for healthcare providers to work together to treat an individual patient across care settings—including doctor’s offices, hospitals, and long-term care facilities. They were responsible for maintaining a patient-centered focus and developing processes to promote evidence-based medicine and patient engagement, as well as internally and publicly report on quality, cost, and coordinated care. Yet, before a Medicare ACO could share in any savings generated, it needed to meet the quality performance measures. Thirty three quality measures were defined by CMS, which spanned the four domains of patient/caregiver experience, care coordination/safety, preventative health, and at-risk health populations (CMS, 2014b, DeCamp et al., 2014; Longworth, 2011; McClellan et al., 2014; Thomasian, 2014). Training adjustments would ensure a better or more comprehensive understanding about the benchmarks to which their outcomes are assessed and the impact on the ACO’s financial incentives.
Although the study identified knowledge gaps, learning is multidimensional. ACO leadership must identify the most appropriate methods to disseminate updated information to their current ACO physicians. They must know how physicians receive practice management education, training, and updates to determine the most effective methods for communicating to physicians as measured by implementation of information and practice modifications.

**Conclusion 2: Outsource Technology and Create an Original Innovation Department**

Based on the findings from this study and the literature review, the ACO needs to outsource technology, and specifically to experts like Microsoft, Google, Yahoo, and IBM, who are better skilled at complex data sets and the transfer of knowledge using artificial intelligence and cognitive computing (Sullivan, 2016). An original Innovation Department must become the heart of the model, possessing the unique blend of new system and design thinking while incorporating organizational effectiveness strategies.

Current health IT technology impacts the physician’s ability to meet patient needs, both in a positive and negative way. Healthcare organizations invested significant time and money to embed well-designed backbone technologies within the workflow of the physician (Colla et al, 2014). However, many technologies actually take more physician time thereby leaving less for the patient, which calls their usefulness to be questioned. As shown in this study, physicians need and want time with their patients, which would also be desired from the patient perspective.

ACOs must leverage technology partnerships to find patterns on existing ambiguous and complex data sets, and develop a new liaison position to work in
collaboration with technology companies to seek alternative perspectives and apply best practices from other industries to healthcare. Simplify data at the point of entry and/or create novel models for data entry at the point of patient care to reduce logistical burdens on clinicians. This would allow physicians to focus on the patient, thus resulting in improved patient outcomes. This can be accomplished by adding well-placed, well-used, dedicated technologically savvy staff to relieve physicians from work that can more efficiently be done through automated functions or lower level team members.

Additionally, the ACO needs a novel strategic direction – one that creates a culture of exploratory testing and psychological safety in reporting failures; the culture needs to reduce the stigma of failures while acknowledging limits, boundaries, and accountability. A combined effort among system stakeholders (e.g., physicians, hospitals, health care systems, payers, patients, policymakers) is imperative to address the challenges of the ACO, including the infrastructure necessary. Stakeholders must collaborate closely with policymakers to develop a tight feedback mechanism in reporting using a single sourced data repository and sharing best practices across ACO models and geographies.

**Conclusion 3: Let Physicians be the Experts with Patients**

Based on the findings and the literature review, it was concluded that physicians were in conflict between performing as an expertly trained healer and implementing the business acumen necessary for today’s ACO model. Physicians are experts in patient care and participation in well-designed ACOs provides an opportunity to collaborate with others to apply their knowledge throughout their practice and organization to improve patient outcomes and reduce costs.
Becoming a physician requires extensive academic and clinical training. The clinical routines, work environment, level of autonomy, and incomes of ACO-participating physicians were affected (Colla et al., 2014). Physicians used to control an estimated 70-80% of healthcare decisions, but that was suppressed by well-funded health plans (Ethridge et al., 1996).

The ultimate goal of the ACO is the improved quality of care for a patient and population while containing costs (Institute for Healthcare Improvement, 2014). The basic structure of US medical education remained relatively unchanged in the past 100 years (Abraham, 2013; Beck, 2015). It is time to revamp the medical school curriculum to include areas not only pertinent to the ACO models, but necessary to meet the shifting landscape. Include training on change management, data analytics, and business and soft skills in addition to the clinical training. Teach systems thinking theory and provide contemporary tools for the physicians to be better skilled at creating, acquiring, and transferring knowledge to meet patient needs and deliver high-quality outcomes.

**Conclusion 4: Revise the ACO Model**

Based on the findings and the literature review, the current ACO model needs to change to meet market demands. Healthcare is a landscape of increasing competition and advancing technology, while undergoing a paradigm shift to the strong patient-centric experience. Remove the government from healthcare and allow the tenets of free market to reign; allow competition based on supply and demand. Private operators should be permitted to insert themselves into healthcare delivery and be more productive and innovative as healthcare continues its shift toward business. When people are healthy, they can afford to shop around, be a bit demanding, and sift through alternatives acting
like a consumer. However, when people are ill, they act like a patient. As a patient, people become dependent on others to act in their best interest. Ill people rely on the choices made when they were healthy and must trust in their providers, so physicians must be prepared to offer the highest quality of care.

Today, ACOs are a reality, with roughly “750 ACOs across the nation serving 23.5 million people insured by Medicare, Medicaid, and commercial insurance” (Ducas, McGinnis, & Shortell, 2016, p. 1). Since implementation of the ACO, healthcare costs rose at its slowest rate for the past 50 years (Kaiser Health, 2015). This suggests the ACO model is working. Although physician participation in an ACO remains voluntary, those who do not engage with an ACO will still be impacted by the emergence of ACOs in their markets.

**Implications for Action**

US healthcare is in a state of transformational change, which shows no indication of slowing down. The Fullstream Transformation Model (Anderson & Ackerman-Anderson, 2010) depicted a process of change that included an upstream component, a midstream component, and a downstream component. The upstream provided a foundation for success, whereas the midstream stage was concerned with the design to achieve the desired state of change. Implementation and mid-course corrections were the core themes for the downstream component (Anderson & Ackerman-Anderson, 2010). Employing this model, the ACA provided the framework for success as the upstream component. The ACO Triple Aim goals, performance measures, and model requirements are the midstream stage, providing a design needed to meet the desired state of change.
The ACO model is experiencing the downstream stage where mid-course corrections are necessary.

**Implication for Action 1: The New Accountable Care Learning Organization**

To meet future needs, ACOs must morph into learning organizations by instilling formal learning processes and cultivating a supportive learning climate. The change must occur early on in physician education. This shift is beyond modifying the leadership behavior and requires integration by all members of the ACO as a system. According to a recent study, this growth requires the combined efforts of all systems stakeholders: physicians, administrators, hospitals, healthcare systems, payers, patients, and policymakers (Garvin, Edmondson, & Gina, 2008). The ACO focus must remain on meeting patient needs and outcomes while providing an environment where it is safe to create new solutions.

Appreciative inquiry strategies should be used to frame and reframe the problem of improving patient experience, improving outcomes, and reducing costs. Appreciative inquiry (Hammond, 1998) suggests leaders recognize the positive aspects of the ACO, affirming the strengths, successes, and potentials, and link these to the change agenda. As a learning organization, an ACO can quickly adapt to marketplace changes. Building an Accountable Care Learning Organization (ACLO) is predicated on three factors or building blocks: a supportive learning environment, concrete learning processes and practices, and behavior that provides reinforcement (Garvin et al., 2008).

The supportive learning environment includes the characteristics of psychological safety, appreciation of differences, openness to new ideas, and time to reflect (Garvin et al., 2008). ACLO providers and staff need to know it is safe and that they will not be not
marginalized when they disagree with peers, take accountability for their mistakes, or represent a minority viewpoint. Learning will occur when ACLO providers and staff recognize the value of competing outlooks. This is not only about correcting mistakes, but also constructing novel approaches that explore and test the unknown.

Develop and disseminate learning processes through the ACLO. Exploratory and hypothesis testing is necessary to develop a new way to deliver healthcare services through the ACLO model. Sharing knowledge in a clear systematic way provides maximum impact and must occur laterally and vertically within the ACLO.

Incumbent upon healthcare leaders, especially physician leaders, has to be the ability to demonstrate behavior that entertains alternative points of view. This includes actively listening and questioning to prompt dialogue among the ACLO staff. A leader’s behavior strongly influences organizational learning (Anderson & Ackerman-Anderson, 2010). By entertaining alternative solutions, a leader empowers employees to offer new ideas in a safe environment (Spreitzer & Porath, 2012). Moreover, leaders, and specifically physician leaders in ACLOs, need to replace the old paradigm that failure is bad. Creating a culture that produces intelligent failures as soon as possible allows an ACLO to move forward more quickly. Physician leaders need to go beyond identifying failures to generate new ideas for the purpose of learning and innovating, thus keeping the ACLO relevant. Annihilate the command, control mentality, and replace it with team and collaboration.

The ACLO must shift from a culture of blame to one with psychological safety to ensure openness to admit and report failure while working toward meeting the Triple
Aim goals and performance measures. Allow the model to function while possessing the ability to quickly meet marketplace demands.

**Implication for Action 2: ACO Culture Change**

With organizational effectiveness and a design systems framework, ACOs will possess a holistic thinking approach. The team, or individual, then manages strategic planning to align with goals; performance management through facilitation and training, individual coaching, and team development; process improvement; and leadership development and coaching. As a member of the leadership team, an organizational effectiveness expert should proactively shape the strategic direction while preparing the ACO staff to adapt or respond to complex or competitive changes. Implementation of an after-action-review as a learning process will aid in extracting key lessons from one ACO model with the ability to apply them to others (Darling, Parry, & Moore, 2005). Routinely performing these reviews secure and sustain the ACO’s competitive edge. This modification allows ACOs, and healthcare delivery, to adapt more rapidly and effectively to meet challenges previously unimagined. With the focus shifted to patient care in a safe environment to test new hypotheses, innovation can breed. Develop a stringent feedback mechanism to policymakers to halt recriminations from either side that prevent constructive dialogue. This process will provide holistic changes that can be implemented quickly.

In addition, develop a collaboration with technology companies to relieve the pressures on health providers to understand the large amounts of collected data. In joint venture with the government, construct a single EHR platform with one central data repository. This will allow timely delivery of comprehensible data on population health
for better patient management. Make best practices more inclusive and easier to share. This relieve the physician from the nuances of changing technology and frustration of reporting, and strengthens the ACO model by sharing data to find patterns in otherwise small, ambiguous, and complex data sets.

**Implication for Action 3: Pilot Hybrid ACO Model**

The generational bands of physicians cannot be overlooked. Millennial physicians, those born from 1981-2000, possess their own set of values, norms, and styles that significantly differ from their predecessors, the baby boomers born from 1946-1964. Physicians of the millennial generation believe they should have input in workplace decision and are both feedback- and team-orientated. They matured during an information age where knowledge is instantly accessible on a variety of devices. As such, create a hybrid ACO model that leverages millennial values, mindset, and comfort with technology. Provide opportunities for this newer generation of physicians to meet their like-minded patients in different and yet undefined ways. Their role as a physician may be remarkably different.

**Implication for Action 4: Shift in Expectations**

Delivering quality care to large populations is challenging. Changes in the US healthcare system have neither ended nor stopped evolving. Economic realities led to recent reform (McClellan, et al., 2010). The US population, as an industrialized nation, advocates for medical treatments and the use of sophisticated technology to diagnose and treat disease. Patient attitudes also vary about medical care and their ability to understand, manage, and cope with the course of an illness, the meaning of a diagnosis,
and the consequences of medical treatment (Conklin, 2002). As healthcare shifts toward business and ACO models evolve, societal expectations need to adjust.

Leverage disruption to modify healthcare delivery. Technology shows no signs of slowing in advancement or disruption. Use technology to develop a generational delivery model that more closely meets patient needs while managing costs. Millennials possess a keen propensity for technology and are savvy, upbeat, and more open to change (Pew Research Center, 2010). Allow them to use portable devices and the Internet of Things (IoT) to facilitate or access healthcare services and providers. In contrast, the less tech savvy, aging population has different needs; permit them additional face-to-face time with physicians who best understand their needs. This archetype would manage to simultaneously target all three Triple Aim goals, improving the patient experience, improving the health of a population, and reducing costs.

**Recommendations for Further Research**

The ACO provides a new model of coordinated care focused on improving the experience of care, improving the health of a population, and reducing the cost of healthcare. This study identified gaps in physician knowledge and gained their perspective of how ACO goals and requirements affect their ability to meet patient needs; yet, there is still a shortfall of information related to the success of the ACO model. Additional research is recommended to increase the viability of current models. The findings and limitations from this study left several question that would benefit from further research.
**Recommendation 1**

The current study was limited to licensed California physicians from two healthcare organizations located in southern California and other, non-affiliated physicians. The value of this study would be enhanced by expanding the study population to other geographic dispersions (e.g., northern California, other states) to determine if knowledge of ACO goals and performance indicators and how ACO requirements impact the physician’s ability to meet patient needs are similar in other geographic areas. Expanding the study to include additional southern California ACOs and/or northern California ACOs would provide an ability to compare and contrast interstate regional differences or similarities. Likewise, this study could be expanded to compare/contrast existing ACO models. As this study was limited to physician’s currently practicing clinical medicine as their primary profession, this study should be conducted to include other specialty physician leaders and administrators.

**Recommendation 2**

The current study did not ask when a physician joined the ACO or how long they had been part of an ACO. It is recommended a correlational study be conducted to examine the relationship between a physician’s length of employment at an ACO and his or her knowledge about ACO goals and performance requirements.

**Recommendation 3**

This study identified a gap in knowledge relating to ACO capabilities, Triple Aim goals, and performance requirements. Research should be conducted to determine how physicians receive practice management education, training, and updates to determine the most effective methods for communicating the ACO goals and performance indicators to
physicians as measured by retention of information and modification of practice parameters.

**Recommendation 4**

The majority of respondents in this study represented the baby boomer generation. A descriptive study focused on millennial physicians, specifically their perspective about the business of healthcare and practice management, would provide critical insights about the ACO model as healthcare continues to shift toward business. Suggested values to explore among the millennial physicians should include meaningful work, opportunities to collaborate, freedom of choice, and perspective on remuneration.

**Recommendation 5**

The current study accepted the notion that, inherently, an ACO model improved the patient experience, quality of care/patient outcomes, and reduced costs. However, an ACO can be a coalition of previously independent organizations or a single organization that has separately accepted accountability for a population. To build upon this study, it is recommended a case study be conducted to determine if participating at an organizational versus an individual level in an ACO changed the practice of medicine as measured by hospital stays, length of stay, and readmission rates.

**Recommendation 6**

This quantitative study examined physician perceptions about aspects of ACO performance measures and the impact of those aspects on their ability to meet patient needs. A final recommendation for further study is to add a qualitative component using case studies or phenomenological methods to gain depth and insight about the physicians lived experiences.
Concluding Remarks and Reflections

The purpose of this quantitative study was to primarily identify how knowledgeable physicians were about the Triple Aim goals and performance measure of the ACO model. Secondarily, the study assessed the physicians’ perspective of the impact of ACO requirements on their ability to meet patient needs. US healthcare is experiencing incredible transformational change. Since the passing of the ACA, virtually every component of the industry needs to be examined and reassessed. This includes industry stakeholders, organizations and firms, industry economics, regulations, systemic structures, incentives, and the delivery of care. With exorbitant costs, healthcare cannot continue to spiral out of control and bending the cost curve becomes imperative. The ACO model was designed to limit growth in spending while preserving quality of care. Physicians, at the center of the ACO, are linchpins of success. As concluded from this study, there is a gap in knowledge about the primary goals of a successful ACO. The model continues to change as the industry restructures within an environment of uncertainties.

Since being signed into legislation, strong indicators illustrate the ACA is working. Positive signs are apparent for access, affordability, and quality. The US has seen strong enrollments in the health insurance marketplace, historic reductions in the uninsured, Medicaid expansion, improved patient safety; reduction of uncompensated care in hospitals, and healthcare cost growth has slowed (HHS, n.d.). Where costs are concerned, the ACO model appears to be working. As evident from the findings of this study, that most physicians were knowledgeable about the goal of reducing healthcare
costs. The price of healthcare has risen at its slowest rate in 50 years; however, ACOs will be unsustainable if focused solely on reducing costs (Berwick et al., 2008).

Under the ACA, the government is reimbursing organizations based on successful integration of coordinated care. California continues to set the pace for ACO participation. Yet, as ACOs transition to value-based healthcare, they continue to face challenges in both achieving higher standards of care and delivering greater value to their patients, as substantiated by this study. This is the point where ACOs are not meeting expectations. Because an ACO’s success and sustainability are strongly tied to effective data management and quality performance, precise documentation is necessary. Physicians participating in this study named these two areas as having the most negative impact on their ability to meet patient needs. Although evidenced-based guidelines are one component toward quality outcomes, an ACO’s ability to integrate, manage, and analyze data from numerous sources is an essential step in achieving material improvement in quality outcomes, reporting, and care coordination. Until Triple Aim goals are simultaneously integrated together with obtaining quality performance, high-valued healthcare will not be achieved and the ACO model will fail. The future of US healthcare must still be radically different, but key stakeholders should use the findings from this study to adjust the ACO model for future and sustainable success. As concluded by this study, improvements are needed in education and professional training to (1) close the knowledge gap among physicians, (2) implement the tenets of systems thinking, (3) outsource technology, (4) let physicians clinical experts, and (4) shift the ACO culture to a learning organization.
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APPENDICES
APPENDIX A

Survey Questionnaire

Physicians Knowledge of Accountable Care Organizations

PART 1. This survey is intended for licensed physicians. Please complete this section so we might better understand your organization's structure and function.

Are you a California Licensed physician?

☐ Yes

☐ No

If No is selected, then skip to the end of block

What is your physician organization structure(s)?

☐ Independent Physician Association (IPA)

☐ Physician Health Organization (PHO)

☐ Aligned Physician Organization

☐ Clinically Integrated Organization

☐ Employed Physicians

☐ Foundation Model

☐ Owned Health Plan

☐ Not Sure

☐ Other (please specify): __________________________

Is the physician organization part of an Accountable Care Organization (ACO)?

☐ Yes

☐ No

☐ Not Sure

Which best describes the type of ACO to which you belong?

☐ Pioneer Model

☐ Medicare Shared Savings Program

☐ Commercial Health Plan ACO

☐ Advanced Payment

☐ Next Gen

☐ Not currently part of an ACO

☐ Other (please specify): __________________________
**PART 2.** The concept of the Accountable Care Organization (ACO) was set forth recently when we enacted national health reform legislation. The Institute for Healthcare Improvement and Don Berwick, MD defined the Triple Aim goals. The Center for Medicare and Medicaid Services (CMS) detailed quality measures and financial performance requirements. It would be expected to know more about some aspects and less about others. The model is complex and continues to evolve. The following questions ask about your knowledge level regarding ACO Triple Aim goals and performance indicators and how they impact your ability to meet patient needs. Please select the choice that closest reflects your personal level of knowledge.

**How knowledgeable are you with the following goals of ACOs?**

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<tr>
<th></th>
<th>Not at All Knowledgeable</th>
<th>Somewhat Knowledgeable</th>
<th>Moderately Knowledgeable</th>
<th>Extremely Knowledgeable</th>
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<td>Improving the Experience of Care</td>
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<td>Improving the Health of Populations</td>
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<td>Reducing the Cost of Healthcare</td>
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<td>Performance Indicators</td>
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**How would you rate your level of knowledge of the ACO performance indicators within the following key quality domains?**

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<td>• Ischemic Vascular Disease</td>
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<td>• Coronary Artery Disease</td>
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How does each of the following impact your ability to meet patient needs, with patient needs defined as your perceptions of patient health, satisfaction of care, and quality of life?

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<th>Option</th>
<th>Highly Negative Impact</th>
<th>Moderately Negative Impact</th>
<th>Slightly Negative Impact</th>
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<th>Slightly Positive Impact</th>
<th>Moderately Positive Impact</th>
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<td>Cultural Change</td>
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</tbody>
</table>
PART 2. The concept of the Accountable Care Organization (ACO) was set forth recently when we enacted national health reform legislation. The Institute for Healthcare Improvement and Don Berwick, MD defined the Triple Aim goals. The Center for Medicare and Medicaid Services (CMS) detailed quality measures and financial performance requirements. It would be expected to know more about some aspects and less about others. The model is complex and continues to evolve. The following questions ask about your knowledge level regarding ACO Triple Aim goals and performance indicators and how they impact your ability to meet patient needs. Please select the choice that closest reflects your personal level of knowledge.

How knowledgeable are you with the following goals of ACOs?

<table>
<thead>
<tr>
<th></th>
<th>Not at All Knowledgeable</th>
<th>Somewhat Knowledgeable</th>
<th>Moderately Knowledgeable</th>
<th>Extremely Knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving the Experience of Care</td>
<td>☒</td>
<td>☒</td>
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</tr>
<tr>
<td>Improving the Health of Populations</td>
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<tr>
<td>Reducing the Cost of Healthcare</td>
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<tr>
<td>Performance Indicators</td>
<td>☒</td>
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</tbody>
</table>

How would you rate your level of knowledge of the ACO performance indicators within the following key quality domains?

<table>
<thead>
<tr>
<th></th>
<th>Not at All Knowledgeable</th>
<th>Somewhat Knowledgeable</th>
<th>Moderately Knowledgeable</th>
<th>Extremely Knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient/ Caregiver Experience</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Care Coordination/Patient Safety</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
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<tr>
<td>Preventative Health</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
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<tr>
<td>• Diabetes</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
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<tr>
<td>• Hypertension</td>
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<tr>
<td>• Ischemic Vascular Disease</td>
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<td>☒</td>
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<tr>
<td>• Heart Failure</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>• Coronary Artery Disease</td>
<td>☒</td>
<td>☒</td>
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<td>☒</td>
</tr>
</tbody>
</table>
Which of the following domains impacted your ability to meet patient needs in a positive way?

- ACO Organization and Structure
- Health IT for Care Coordination
- Finance and Contracts
- Managing Clinical Care
- Performance Reporting
- Governance, Leadership, Management

Please explain why this domain was most impactful.

Which of the following domains impacted your ability to meet patient needs in a negative way?

- ACO Organization and Structure
- Health IT for Care Coordination
- Finance and Contracts
- Managing Clinical Care
- Performance Reporting
- Governance, Leadership, Management

Please explain why this domain was most impactful.

**PART 3.** The following questions are for background information to assess the survey results.

Which services does your ACO provide? (Check all that apply)

- Primary Care
- Emergency
- Rehabilitation
- Behavioral Health
- Skilled Nursing
- Pediatrics
- Palliative or Hospice
- Home Health or Visiting Nurse
- Pharmacy
- Urgent Care
- Don’t know/unsure
- Other: ____________________
Which best describes your specialty?

- Addictionology
- Administration
- Allergy and Immunology
- Ambulatory Care
- Anesthesiology
- Cardiology
- Cardiothoracic Surgery
- Colon and Rectal Surgery
- Critical Care Medicine
- Dermatology
- Emergency Medicine
- Endocrinology
- Family Practice
- Gastroenterology
- Hematology / Oncology
- Hospitalist
- Infectious Diseases
- Internal Medicine/General Nephrology
- Musculoskeletal Medicine
- Neurology
- Neurosurgery
- Nuclear Medicine
- Nurse Practitioner
- Obstetrics / Gynecology
- Occupational Medicine
- Oncology
- Ophthalmology
- Orthopedic Surgery
- Otolaryngology
- Pathology
- Pediatrics, General
- Pediatrics, Subspecialty
- Physical Medicine & Rehabilitation
- Plastic Surgery
- Podiatry
- Preventive Medicine
- Primary Care
- Proctology
- Psychiatry (Adult)
- Psychiatry (Child and Adolescent)
- Pulmonary Medicine
- Radiation Oncology
- Radiology
- Rheumatology
- Sleep Medicine
- Surgery
- Urology
- Other: ____________________
What year did you graduate from medical school?

- Select One
- 2015
- 2014
- 2013
- 2012
- 2011
- 2010
- 2009
- 2008
- 2007
- 2006
- 2005
- 2004
- 2003
- 2002
- 2001
- 2000
- 1999
- 1998
- 1997
- 1996
- 1995
- 1994
- 1993
- 1992
- 1991
- 1990
- 1989
- 1988
- 1987
- 1986
- 1985
- 1984
- 1983
- 1982
- 1981
- 1980
- 1979
- 1978
- 1977
- 1976
- 1975
What is your gender?
- Male
- Female

What is your age?
- Select One
- Under 15 years
- 15 to 24 years
- 25 to 34 years
- 35 to 44 years
- 45 to 54 years
- 55 to 64 years
- 65 to 74 years
- 75 to 84 years
- 85 years or over

What is your zip code for your primary practice location?
APPENDIX B
Brandman University IRB Approval Letter

BRANDMAN UNIVERSITY INSTITUTIONAL REVIEW BOARD
IRB APPLICATION ACTION—APPROVAL
COMPLETED BY BUIRB

IRB ACTION/APPROVAL

Name of Investigator/Researcher: Debra Moysychyn

☐ Returned without review. Insufficient detail to adequately assess risks, protections and benefits.
☐ Approved/Certified as Exempt form IRB Review.
☐ Approved as submitted.
☑ Approved, contingent on minor revisions (see attached)
☐ Requires significant modifications of the protocol before approval. Research must resubmit with modifications (see attached)
☐ Researcher must contact IRB member and discuss revisions to research proposal and protocol.

Level of Risk: ☐ No Risk ☐ Minimal Risk ☐ More than Minimal Risk

IRB Comments:

1. Provide current approval (forms or email) indicating different organizations' willingness to send out email invitations.

Dr. Donald Beissel
IRB Reviewer

Telephone: ☐ Email: beis1101@brandman.edu

BUIRB Chair: Dr. Douglas DeVore
Date: 2/11/16

REVISIONS IRB Application

☑ Approved ☐ Returned

Name: Douglas DeVore

Telephone: 623-293-2421 Email: ddevore@brandman.edu

BUIRB Chair