Understanding the Experience of Medicare Advantage Patients in a Health Maintenance Organization

Curtis E. Boldman
University of Nevada, Las Vegas, curtis.boldman@yahoo.com

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UNDERSTANDING THE EXPERIENCE OF MEDICARE ADVANTAGE PATIENTS 
IN A HEALTH MAINTENANCE ORGANIZATION

By

Curtis Edward Boldman

Bachelor of Science in Supply Chain Management

Arizona State University

1998

A thesis submitted in partial fulfillment of requirements for the 

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Curtis Boldman

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Stowe Shoemaker, Ph.D., Committee Chair
Bo Bernhard, Ph.D., Committee Member
Rhonda Montgomery, Ph.D., Committee Member
Olena Mazurenko, Ph.D., Graduate College Representative
Kathryn Hausbeck Korgan, Ph.D., Interim Dean of the Graduate College

May 2015
ABSTRACT

Understanding the Experience of Medicare Advantage Patients in a Health Maintenance Organization
by
Curtis Boldman
Dr. Stowe Shoemaker, Committee Chair
Dean of the William F. Harrah College of Hotel Administration
University of Nevada, Las Vegas

This study was conducted using a single Health Maintenance Organization in Las Vegas, NV to determine the key drivers and attributes of quality in the patient experience for Medicare Advantage holders. The purpose of this study was to investigate these perceptions of quality to assist the provider in identifying the areas in their treatment process which could be refined in order to better serve their customer base. With the recent changes in healthcare laws, patient satisfaction is now a key determinant in the financial compensation providers receive for services performed.

Data was collected by doing patient intercepts outside of the selected provider utilizing a questionnaire based on the 5Q model of service quality. A total of 84 usable surveys were collected and the data shows that ultimately there is positive impact between the quality of each point of contact with a patient, and the patient’s overall satisfaction with their experience at the provider.

The data demonstrates that there is a connection between the quality of the treatment process, the equipment and facilities, the exchange of information and the interaction between patients and the provider’s staff. With this information the provider can now make changes to their process to improve the patient’s experience at their clinics. The study also solidifies the idea the customer service theory can be an effective way on analyzing the healthcare industry.
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CHAPTER ONE
INTRODUCTION

Healthcare in America is changing. “As the United States steps up to the historic opportunity offered by the Affordable Care Act (ACA), the imperative for health care transformation to the needs of an increasingly diverse population is indisputable” (Clancy, Uchendu, & Jones, 2014, p. 527). The changes associated with the ACA have slowly been implemented over recent years, and healthcare organizations are coming to a realization that they may need make some changes in the way they operate. The number of insured patients increased at a rate of 26% since the third quarter of 2014 (Clancy et al., 2014). These increases are naturally leading to problems with wait times and the quality of care. Issues such as these are forcing the healthcare industry to think outside the box. While the days of having the same doctor, in the same office, with the same staff for most of your life may be over, the personalization and feeling of comfort associated with that type of experience is still something patients covet. Thus a movement that views patients as consumers is gaining momentum in an attempt to create a similar experience and raise patient satisfaction levels (Andrew, Salamonson, Everett, Halcomb, & Davidson, 2011). This could very likely be the future of healthcare.

With changes to national healthcare laws a new set of issues has come to the forefront in managed patient care of Medicare patients who use Health Maintenance Organizations (HMO). With the implementation of the ACA there were some changes made to Medicare to improve its services and extend its life. Some of these changes were more preventive services, a lower payment for services performed, increased support for doctors and a minimum of a 12-year extension of Medicare services (Medicare.gov,
2014a). With this increase in the number of insured Americans and the length of time Americans are living, a strain is being put on these healthcare providers. These demands are leading to increased wait times in getting appointments, in waiting rooms and an overall unsatisfactory patient experience. Issues such as these are especially important to healthcare providers who manage Medicare patients because healthcare providers in the Medicare world are reimbursed for their services based on patient satisfaction ratings. With the passage of the Patient Protection Act in 2010, payment incentives were created to improve the “value” of healthcare delivery by improving the patient experience. “Therefore a benefit exists in identifying the key drivers (attributes) of patient satisfaction in a managed care setting” (Farley et al., 2014, p. 1).

The evolution of healthcare into a managed care system in the United States has raised concerns about the quality and access of care to those seeking medical attention (Meng, Jatulis, McDonald, & Legoretta, 1997). The previous statement was made in the late 1990’s when there was initially a strong push for nationalized healthcare. That evaluation came to fruition with the passage of the ACA, and with it there has come an increasing perception that patients should be viewed as customers and customer satisfaction measures are gaining credence in the healthcare industry (Andrew et al., 2011). Consumer satisfaction has long been an important outcome measure of service-based industries and these same measures now have a direct financial impact on the healthcare industry (Farley et al., 2014). Therefore the need to identify the drivers of patient (customer) satisfaction is more important than ever for HMOs. By identifying these drivers healthcare providers can create an experience that the patient desires.
Customer satisfaction is one of the most extensively studied and researched areas in businesses, especially in the realm of marketing and hospitality (Curtis, Abratt, Rhoades, & Dion, 2011; Teixeira, Patricio, Nunes, Fisk, & Constatine, 2012). The reason why is simple, companies are in constant search of methods to maximize sales, increase profits and keep customers coming back. One factor in accomplishing these goals is the satisfaction of the customer, which in turn leads to customer loyalty (Wilson, Zeithaml, Bitner, & Gremler, 2008). Customers make purchases with some level of expectation and if an organization is able to consistently meet those expectations their ability to develop customer loyalty is greatly enhanced.

These same principles are becoming increasingly recognized in the healthcare industry in terms of patient satisfaction. The frequency with which patient satisfaction is used as an outcome to gain perspective on the patient’s view of healthcare is becoming more prevalent in the healthcare industry (Andrew et al., 2011; Meng et al., 1997)). Measuring patient satisfaction is similar to measuring variables of customer satisfaction. When customers are satisfied with a purchase or experience they are more likely to do repeat business with an organization, and likewise patients who are satisfied with their care are more likely to stay with the same provider (Andrew et al., 2011). The carryover of this concept into the healthcare industry is significant given the personal nature of the business. Patient satisfaction is the desired outcome, but it is the entirety of the patient’s experience that leads to that outcome.

Patient satisfaction and increasingly the patient experience has come to the forefront of managed healthcare, mandated by recent legislative changes. This study
proposes to determine key drivers and attributes that influence patient satisfaction and identify indicators of a successful patient experience.

It is important for this study to determine the various aspects that Medicare Advantage patients perceive as essential to a quality healthcare experience while working with and being treated at the selected provider’s clinics. This study will provide information on these patients to the provider as well add a new element to patient satisfaction and patient experience literature. Thus an analysis of satisfaction with medical care revealed the areas for patient satisfaction and overall performance of an organization included: overall quality, trust, reputation, continuity, competence, information, organization, facilities, attention to psychosocial problems, humanness and outcome of care (Hall & Dornan, 1988). Factors such as these need to be identified and then manipulated by healthcare providers in a way that creates a satisfactory experience for patients and loyalty for the provider.

**Theoretical and Conceptual Framework**

This study will look at three prevalent customer satisfaction models and select a preferred model for the analysis of the data collected. All of the selected models have been derived from the customer service theory that analyzes the differences between customer expectations of service and their perceptions of the services received called SERVQUAL. SERVQUAL is a quality management framework created to measure quality in the service sector (Parasuraman, Zeithaml, & Berry, 1985). The preferred model for this study will be selected after a review of the literature, and by creating the questionnaire based upon the categories analyzed in the model. Selecting and organizing
information into the selected framework will allow for a thorough analysis of factors involved in patient satisfaction in terms of customer service.

The first model that will be looked at is the 5Q model of service quality, which allows a look at five key variables that influence customer satisfaction: quality of object, quality of infrastructure, quality of interaction and quality of atmosphere (Zineldin, 2006a). The second selected model will be the RATER model of customer satisfaction which focuses on: reliability, assurance, tangibles, empathy and responsiveness (Hussain & Rehman, 2012). The final model to be examined is the GAP model of customer service which will review: 1) Gap between consumer expectations and management perceptions, 2) GAP between management perception and service quality specification, 3) Gap between service quality specification and service delivery, 4) Gap between service delivery and external communications and 5) Gap between expected service and service experienced (Headley & Choi, 1992).

**Purpose Statement**

HMOs are rapidly becoming an entity where customer service (patient satisfaction) is mandated and taking a leading role in how these healthcare providers are paid for performed services. Analyzing patients’ perceptions of quality and identifying the predominate drivers is the key to designing an experience that will maximize patient satisfaction and in turn revenue.

**Statement of Problem**

The basis of this paper is to determine key drivers and attributes of the patient experience that influence patient satisfaction among Medicare Advantage holders at a single Health Maintenance Organization (HMO) in Las Vegas, NV.
Preview of Methodology

The study was based primarily on quantitative data collected from a questionnaire that was administered to patients at a selected clinic, managed by a single Health Maintenance Organization. The HMO was selected after they approached the research team in the hopes of gaining feedback as to why they are scoring low on the surveys that make up their Medicare Star Ratings. Medicare Star Ratings are a rating system that has an impact on how providers are reimbursed for their services (Darden & McCarthy, 2013). The questionnaire was designed by the research team based on a selected customer service model, and developed after receiving input from the provider on the themes identified during focus groups conducted by the HMO. There was also an extensive review of the literature on the many facets related to this study utilizing the library database at the University of Nevada-Las Vegas. The study will look at patient satisfaction, the patient experience, patient’s perception of quality, and various customer service models in order to select one that can be applied in the hopes of improving patient satisfaction levels.

Limitations

The questionnaire administered was designed to collect quantitative data. Quantitative data can sometimes fail to capture the deeper feelings as to why the selected the answer that they did off of the survey. This why it is often recommend that the some qualitative research be conducted in conjunction with quantitative research. In addition the study’s focus on one HMO in Las Vegas providing service to Medicare Advantage patients is a defining limitation. The information collected will be valuable to the
provider, but the services provided at other healthcare organizations both in Las Vegas and elsewhere may differ and the results could be vary.

The results could differ based on many factors such as demographics of the patient population, expectations of other patient populations and operations at different providers. In addition to these factors there was limitations put on the research in terms of the times and dates that research could be conducted. These limitations were put on the study by the HMO and the research team to ensure that the study was done in a timely manner with as little interruption to operations as possible.

**Summary**

With the broad changes in healthcare laws and an increased focus on patient satisfaction and the patient experience, now is a perfect time to take a look at patient satisfaction in terms of customer service. This becomes even more relevant given that providers who service Medicare patients are now reimbursed based on patient satisfaction surveys administered by the government. It is the goal of this study to identify through a review of the literature grounded in theory and the administration of a questionnaire to identify the key drivers of patient satisfaction. More importantly the study aims to identify perceived expectations of quality in their healthcare experience, and use this information to assist in the development of a satisfactory experience.

**Definitions**

Throughout this study, the following terms are used:

Customer Satisfaction – Measure of how a company’s goods and/or services meet or exceed customer expectations (Giese & Cote, 2002).
Health Maintenance Organization – An organization that plans and organizes a patient’s care for health insurance companies, usually having the patient pick one primary physician who is responsible for referring the patient to any other physicians who usually have partnerships with the insurance company (Blue Cross Blue Shield Blue Care Network, n.d.).

Medicare Advantage Plan – Medicare Advantage health plans are a type of Medicare health plan offered by private companies contracted through Medicare (Medicare, 2014b).


Patient Satisfaction – How a patient’s expectations of a good healthcare experience, compare to their perception of the care they receive (Andrew et al., 2011).

Service Quality – An accomplishment in customer service achieved when a customer’s expectations are met or exceeded (Seth, Deshmukh, & Vrat, 2005).
CHAPTER TWO

REVIEW OF LITERATURE

The term “patient experience” is rapidly becoming the focus of the healthcare industry with the shifts in both public policy in terms of public reporting, incentives and reimbursement, as well emergence of the consumer mindset (Wolf, Nierderhauser, Marshburn, & LaVela, 2014). With the focus being moved toward a customer service mindset the need to identify elements of the patient experience and how to enhance them to achieve satisfactory outcomes has never been more important to the financial well-being of healthcare organizations. A high level of patient satisfaction is the desired outcome that providers are looking for when treating patients. To achieve these levels of satisfaction healthcare companies are attempting to improve on all interactions with the patient, or the patient’s experience. Delivering a great patient experience is increasingly critical for healthcare providers to gain market share, increase profitability and improve outcomes (Needham, 2012). This study aims to identify drivers of a satisfactory patient experience in an effort to improve the perceived quality of the patient experience at a single HMO specializing in Medicare patients.

Medicare Star Ratings

There needs to be a dual focus on not only the outcomes of the service but also the process (Buttle, 1996; Gill & White, 2009). It seems as if organizations focus on one or the other, however by analyzing the process in terms of the outcomes, healthcare organizations can hone in on consistently delivering a quality experience for patients. Organizations understand the importance of measuring patient satisfaction and will look at the outcomes of patient feedback, but often times fail to analyze the individual patient
interactions to determine why the outcome is the way it is (Gill & White, 2009). Analyzing the individual interactions and their impact on a patient’s satisfaction is essential from HMOs to improve their patient care process. HMOs providing services to Medicare patients are annually rated based on individual measures such as surveys that are distributed to a percentage of the patient population. These surveys such as the Consumer Assessment of Healthcare Providers and Systems (CAHPS) and the Health Outcomes Survey (HOS) are then analyzed and a “Star Rating” of one through five stars is assigned to the provider (Darden & McCarthy, 2013). This Star Rating is then the basis for reimbursement for services performed by the provider, with CAHPS being linked to 0.6 percent of reimbursement for Medicare (Needham, 2012).

While the current reimbursement platform is significant there are additional incentives coming in 2015. “Medicare Advantage plans can earn substantial quality bonus payments based on their performance on measures on clinical performance, patient experience, patient-reported outcomes, and customer complaints and service indicators” (Ryan & Damberg, 2013, p. 44). In 2010 “customer service” was added as one of the five domains on which providers are rated (Darden & McCarthy, 2013). CAHPS surveys ask consumers and patients to report on the quality of their experience when dealing with healthcare providers (Agency for Healthcare Research and Quality, 2014).

**Important Medicare Patient Satisfaction Surveys**

There are two surveys that currently impact a Medicare provider’s Star Rating; CAHPS and the HOS. These surveys make up two-fifths of a provider’s Star Rating and thus can have significant impact on their ability to be reimbursed for services performed (United Healthcare, n.d.). The CAHPS survey is given to the patients of a Medicare
provider in an effort to gauge the satisfaction levels with the services provided by the healthcare organization, and to assess patients’ perceptions of the accessibility of the provider (United Healthcare, n.d.). The HOS survey on the other hand is designed to collect data on the patient’s mental and physical wellbeing over a period time to assess if the provider has been making strides in improving the patient’s quality of life (United Healthcare, n.d.). Other than effecting their ability to be reimbursed for services performed these surveys also provide insight into how patients view the treatment they are receiving.

The healthcare provider in this study is currently receiving failing marks in terms of the quality of the patient experience on the CAHPS. Therefore the need exists to look at what the drivers and attributes of quality are in the patient experience as it applies to the CAHPS in an interest of developing processes and procedures that lead to consistent satisfactory outcomes. While identifying these attributes and delivering a satisfactory experience has financial implications for healthcare providers the true value is in delivering an exceptional experience regardless on compensation (Needham, 2012).

**The Patient Experience**

One goal in healthcare should be to provide care to large numbers of people at a reasonable cost. To do this effectively it is important that the patient be at the center of the process and should be accomplished with the patient experience at the forefront (LaVela & Gallan, 2014). To assist in this it is important to incorporate the patient’s viewpoint of their experience (Lees, 2011). However, during this there is a transition from the focus being primarily on the process to the evaluation of the process with a focus on the outcome.
Truly understanding customer experiences means capturing information across all interactions with a company and even other companies that support the overall customer activity (Teixeira, Patricio, Nunes, Fisk, & Constatine, 2012). Customer service is a goal in most industries and this type of analysis has been taking place for some time (Panda & Das, 2014). Nowhere is this truer than in the hospitality industry where companies are always trying to maximize their consumer’s experience (Panda & Das, 2014). This study aims to use existing customer service theory to analyze the patient experience at the participating HMO in terms of customer service.

**Service Quality**

In order to make this evaluation it is necessary to look at service quality and how it is measured. Service can be defined as “any tangible act or performance that one party offers to another that does not result in the ownership of anything” (Kotler & Keller, 2009, p. 789). The last couple of decades has seen a focus on service quality by managers and researchers as they analyze its effect on business performance (Panda & Das, 2014; Seth, Deshmukh, & Vrat, 2005). This focus on service quality is leading to an increased knowledge as to what consumers are looking for in the services they utilize. Headley and Choi (1992) put forth that “an investment in quality usually pays dividends” (p. 5) and went on to summarize that by offering quality service businesses were able to better attract first time customers, repeat customers, charge a higher price and enable more effective marketing programs.

Quality care is generally considered to be the right of all patients and the responsibility of the provider so it comes as no surprise that it is of vital importance to healthcare organizations (Zineldin, 2006a). To effectively carry this out medical
organizations need to look at the process as well as all points of contact in the patient experience. The process and the outcome of the service are dependent on interactions and transactions with staff and the process itself (McKnight, 2009). Patients like most consumers will seek out quality services when they are provided choice. It is then the responsibility of the service provider to meet the expectations of the patient. To effectively measure the quality of a patient’s experience, organizations must find the difference between expectations and perceptions of the services rendered (Hussain & Rehman, 2012).

Measuring these differences has been a goal of researchers for decades and a number of service quality models have been created to aid in this. This study will look at three service models utilized in various industries. This will be done in an attempt to determine which one could best be used by the HMO in the study.

**Service Quality Models**

A number of relevant service quality models look at different perspectives and utilize multiple methodologies (Seth et al., 2005). The three models being used in this study include: RATER model, GAP model and the 5Qs model. They are all based on the SERVQUAL model, which was created in 1985 by a group of American authors ("SERVQUAL," 2014; Parasuraman, Zeithaml, & Berry, 1985). It is the SERVQUAL model that established the customer service theory that this study will be grounded in.

**SERVQUAL**

SERVQUAL was designed to summarize the nature and determinants of service quality as perceived by consumers (Parasuraman, Zeithaml, & Berry, 1985). SERVQUAL looks at customer perceptions and the relative importance of service
attributes by surveying customers against key service dimensions and comparing them against an organization that is deemed as “excellent” (McKnight, 2009).

SERVQUAL is a multi-itemed scale developed to assess customer perceptions of service quality in service and retail business (Parasuraman et al., 1988). After some extensive focus group research 10 criteria for evaluating service quality were identified: credibility, security, access, communication, understanding the customer, tangibles, reliability, responsiveness, competence and courtesy (Lovelock & Wirtz, 2010). These 10 dimensions were later reduced to five because of correlation among many of the original 10 variables (Lovelock & Wirtz, 2010). These five dimensions will be discussed later as they are the framework for future models. SERVQUAL is valuable in that it made strides to close the gaps between customer’s expectations of a service and their perceptions of the service they receive by requiring respondents to answer questions about both areas (Parasuraman et al., 1988). By using perceived as opposed to actual service received makes the SERVQUAL measure an attitude measure that is related to, but not the same as, satisfaction (Parasuraman et al., 1988). It this framework and customer service theory that the models to be examined in this study are based, and the theory from which this study will be conducted.

**GAP Model**

The GAP model is a management tool developed by the same authors who developed SERVQUAL to identify five gaps that may cause customers to experience poor service quality (Shoemaker & Lewis, 1999).

- **GAP 1:** Between consumer expectations and management perceptions.
- **GAP 2:** Between management perception and service quality specification.
- **GAP 3:** Between service quality specification and service delivery.
• GAP 4: Between service delivery and external communication.

• GAP 5: Between expected service and experienced service (Headley & Choi, 1992).

This service quality model looks at several gaps as important in the design and execution of quality service. Analysis of these gaps allow a service provider to better understand their customers’ expectations and turn them into better service offerings (Headley & Choi, 1992; Shoemaker & Lewis, 1999).

Figure 1 illustrates how each of these gaps works in the process. The diagram shows the perspectives of both the consumer and the provider to demonstrate how each gap will influence the other. The initial gap representing the gap between management perceptions and consumer expectations is shown in the bottom box and leads into Gap 2. In the analysis of these gaps it is important to identify what is both causing them and how to close them. Shoemaker and Lewis (1999) looked closer at the GAP Model, especially Gaps 1-3 because these Gaps have the most significant impact on customer loyalty. Gap 1 can be caused by any of the following reasons: inadequate market research, lack of communication between management and customers and a lack of focus on building relationships. To close this gap companies should spend time interacting with customers to gain feedback on their products and services in an effort to close the communication gap.

Gap 2 then leads into gap 3 but it is illustrated at this point that gaps begin to impact the other gaps in no specific order. Gap 2 occurs when a providers designed services do not meet customer expectations or the company is too focused on operations. This gap can be closed fairly easily when management makes a full commitment to
customer service (Shoemaker & Lewis, 1999). Gap 3 (service quality specification and delivery) occurs when employees of a company fail to deliver services to the desired specifications of management (Lovelock & Wirtz, 2010). This gap is often caused by poor communication between management and employees, or a lack of focus from management on employee satisfaction (Shoemaker & Lewis, 1999). Gap 3 can be closed by improving the approach in which a company hires its employees. By hiring the right employees, for the right jobs and stressing the importance of customer service a company can tighten up this gap (Lovelock & Wirtz, 2010). As seen in Figure 1, Gap 3 leads into Gap 4 as well as directly impacting Gap 5.

Gap 4 (service delivery and external communication) occurs when a company advertise and sell their services at a particular level but that is not what the company delivers (Lovelock & Wirtz, 2010). Gap 4 can be closed by ensuring that communication between operations and advertising is an open line of communication, as well ensuring the services have been adequately tested to meet advertised expectations. Gap 5 (expected service and experienced service) can be caused when a consumer misinterprets the service quality for something that it was not intended (McKnight, 2009). As demonstrated by the arrows on the diagram, Gaps 2 through 5 all have a direct impact on each other, ultimately leading from expected service back to management perceptions.

Lastly, the three areas of word of mouth, personal needs and past experience are highlighted as to how the consumers will impact expected service. All of the gaps play a role in the service process and an organizations ability to better understand all of the gaps increases their ability provide a quality service (Headley & Choi, 1992).
The GAP model has fallen under some criticism because it is said that it does not explain the measurement procedures for the measurement of gaps at the different levels (Seth et al., 2005). It would seem that in analyzing the patient experience and its outcomes, the study would be best served by using a service model that is clear in its measurements. The GAP model is more one dimensional with a primary focus on customer perceptions (Chakraborty & Majumdar, 2011). While perception plays a major role in this study, there is an additional focus on expectations and outcomes. The model measures service quality and identifies gaps but not the causes (Zineldin, 2006b). There also seems to be a lack of focus on the quality of facilities and point by point interactions between patients and staff, and when used by itself may not identify issues needed to provide a clear picture on the changes necessary to improve the process and outcomes at the selected provider (Dabney & Tzeng, 2013; Zineldin, 2006a).
RATER Model

The RATER model is a simplified version of SERVQUAL that breaks down and measures service quality by looking at the following five dimensions:

- Reliability: Ability to perform the desired service dependably and accurately.
- Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence.
- Tangibility: Physical facilities, equipment and appearance of personnel of an organization.
- Empathy: Caring, individualized attention the firm provides its customers.
- Responsiveness: Willingness to help customers and provide prompt service (Parasuraman et al., 1988).

By using these five dimensions an organization can gain insight into the perceptions and expectations of their customers, and the quality of service can be improved (Hussain & Rehman, 2012). The model is a good method for closing gaps identified in the GAP model. An effective analysis of ones services allows an organization to create a plan. To do this a provider will want to look at their “future state”, where they want to be in terms of service, the level of service they are currently providing and the necessary steps to get to their future state (Mind Tools, n.d.). After determining where they want to be the organization will administer a questionnaire that measures the customers’ expectations of service in terms of the five dimensions, and their perception of the services they received (“SERVQUAL,” n.d.). RATER is a solid resource for pinpointing areas that need attention and action to improve service quality (Parasuraman et al., 1988).
Even with its popularity and widespread applications of RATER there is still some skepticism, especially when applied to healthcare organizations. A primary criticism of the model is that it focuses on the process of service and not the outcome. There are additional theoretical and operational criticisms of the model such as intercorrelation between the dimensions and that it fails to draw on other established theories (Buttle, 1996; Hussain & Rehman, 2012). For the purpose of this study its failure to look at the outcomes of the process is critical. In the healthcare industry consistent improvement in the care process leading to a satisfactory patient experience is a key outcome, and it seemed that looking at the process in terms of improvement and a satisfactory outcome was essential.

The RATER and GAP models are both direct descendants of SERVQUAL and the SERVQUAL models have been utilized in the healthcare industry with some success. It is has been found that that SERVQUAL models are suitable in analyzing the perceptual gap in understanding patient satisfaction and are a reliable and valid model in the hospital environment (Chakraborty & Majumdar, 2011; Raposo, Alves, & Duarte, 2009). The use of these models allows for the analysis of the process and questionnaires based on that analysis provide management with a valuable tool in assessing their process.

It has also been shown that all five dimensions of service quality in the RATER model are significant and reliable in healthcare settings (Chakraborty & Majumdar, 2011). However some have found that the model may be inappropriate for measuring professional service and that it may not be generalized to healthcare services because of the uniqueness of the services (Chakraborty & Majumdar, 2011). This could be
problematic for this study given that it will be looking at an HMO who specializes in Medicare patients.

5Qs Model

The 5 Qualities Model (5Qs) was designed to expand on SERVQUAL models into a framework of five quality dimensions as seen below (Zineldin, 2006b, p. 432):

Q1: Quality of object – The technical quality (what customer receives). It measures the core product or service itself.

Q2: Quality of process – The functional quality (how the product or service provider provides the core product or service (the technical). This can be used to pinpoint problems in service delivery and to suggest solutions.

Q3: Quality of infrastructure – Measures the basic resources which are needed to perform the product or service: the quality of internal competence and skills, experience, know-how, technology, internal relationships, motivation, attitudes, internal resources and activities, and how these activities are managed, co-operated and co-ordinated.

Q4: Quality of interaction – Measures the quality of information exchange, financial exchange and social exchange, etc.

Q5: Quality of atmosphere – The relationship and interaction process between the customer-company are influenced by the quality of the atmosphere in a specific environment where they operate. The atmosphere indicators should be considered very critical and important because of the belief that lack of frankly and friendly atmosphere explains poor quality and less loyalty (Zineldin, 2006b).
“The 5Qs model is more comprehensive and incorporates essential and multidimensional attributes for customer relationship management which are missing from other models” (Zineldin, 2006b, p. 432). The 5Qs model incorporates the atmosphere and interaction between the customer and the staff which are left out of the SERVQUAL models (Zineldin, 2006b). A component of goal oriented questions is also suggested in the 5Qs model to make it more comprehensive. Zineldin believes that by incorporating this component it will lead to “increased trust and an increased likelihood for positive recommendations” (Zineldin, 2006a, p. 70).

The 5Qs model, being derived from SERVQUAL, incorporates aspects of technical-functional models and expands the previous models ability to look at quality: quality of object, process, infrastructure, interaction and atmosphere (Zineldin, 2006b). In doing so the 5Qs model has set itself up as a model that healthcare providers can utilize in order to evaluate patient satisfaction (Hussain & Rehman, 2012).

The criticism of the 5Qs model is that it focuses too much on perceptions and leaves out expectations (Cardona & Bravo, 2011). This could be critical when evaluating healthcare providers where it would seem like expectations would usually be high. Expectations could play a significant role when evaluating a healthcare provider and based on the literature the 5Qs may fail to properly account for this dimension.

**Measuring the Patient Experience**

As previously mentioned the Beryl Institute defines the patient experience as “the sum of all interactions, shaped by an organization’s culture, that influence patient perceptions, across the continuum of care” (Wolf et al., 2014, p. 8). While broad in its scope the definition does provide basic framework from which we can begin to look at
elements of the patient experience. The ability to identify and measure indicators of the patient experience is key if healthcare providers are to achieve the patient satisfaction levels that they covet. LaVela and Gallen (2014, p. 29) who have contributed significantly to the study of the patient experience noted, “measuring the patient experience is important because it provides an opportunity to improve care, enhance strategic decision making, meet patients’ expectations, effectively manage and monitor health care performance, and document benchmarks for health care organizations”.

In measuring the patient experience healthcare providers can also make improvements to the organization. These improvements include amelioration to the processes and outcomes, and the provider can better utilize resources if they are aware of the areas in which those resources will make the greatest impact on a patient’s experience (LaVela & Gallan, 2014). In addition by making such improvements the provider enhances its ability to both attract new patients and retain patients that they are currently treating by enhancing loyalty (LaVela & Gallan, 2014). These improvements highlight the goals of any successful business and provide insight for medical organizations as to the importance of viewing the patient experience in terms of consumer satisfaction. This view is increasingly taking a more important role in quality of care reforms and healthcare delivery (Bleich, Ozaltin, & Murray, 2009).

Healthcare organizations realize that measurement of the patient experience is no easy task (Needham, 2012). Problems exist in the measurement of the patient experience do to a lack of agreed upon benchmarks, a standardized definition, established set of standards and measurable indicators would be the preferred platform to work from when establishing what matters most to patients and how to understand and improve those
factors (LaVela & Gallan, 2014). Adding to this difficulty is a reluctance by healthcare organizations to take patient reported information as a valid measure. Reasons such as patient feedback not being credible, factors not dealing directly with the quality of the process and the patient-experience being influenced by immediate gratification rather than the desired outcome, have all been highlighted as weaknesses by providers (LaVela & Gallan, 2014). Accompanied by the numerous terms that have been used in conjunction with or synonymously with patient experience, such as patient satisfaction, have created difficulty in defining the indicators for measurement.

This led to the question proposed by LaVela and Gallan (2014) “is the right goal being measured and how to do we incorporate the patient experience measure to optimally achieve (and measure) the best clinical outcomes and/or subjective goals that matter to patients?” (p. 29). By asking this questions healthcare organizations can begin the journey of creating a process that will truly bring a customer service mindset to the patient experience. Thus far these organizations have focused on improving things such as wait times but for the most part little attention has been paid to the emotions and stresses patients experience (Needham, 2012).

By taking into account the emotions associated with a patient’s health, and how those emotions affect not only their experience but their perceived outcome of that experience, providers can begin to close this gap. Therefore a framework needs to be created that will focus on optimizing the patient experience by not only measuring the tangible (physical) indicators of the experience but the intangible (emotional) experience (Needham, 2012; Wolf et al., 2014).
To accomplish this, healthcare needs to adopt methods from other industries that go beyond just aiming to measure satisfaction and look to measure the complete patient experience (LaVela & Gallan, 2014). Improving the quality of the experience will take an effort by providers to look at their process in a new light. Throughout the literature a number of different views on the measurables of the patient experience were expressed but some central themes were established. Autonomy, choice, communication, confidentiality, dignity, prompt attention, quality of basic amenities and support (access to family and community networks) were the indicators established by Bleich, Ozaltin and Murray (2009) and set a basic framework from which the patient experience can be approached. There were also the most consistent themes established in reviewed sources: emotional and physical lived experiences, personal interactions, organization and culture, responsiveness, information, perceptions and partnerships/patient involvement into categories that can then be developed into instruments of measurement (Wolf et al., 2014). By looking at the patient experience in these terms healthcare organizations can begin to prioritize quality improvements to their process.

While there is still some question as to how the patient experience should be defined and measured there is some consensus on a framework in which to move forward. By building their services around the needs of the patient, healthcare organizations can begin to take steps to improving the quality in their process (Needham, 2012). Incorporating the patient’s point of view has been shown to increase confidence in healthcare services and proven to be a positive return on investment for providers (Lees, 2011). In developing instruments that can capture not only the patient’s point of
view but the tangible aspects of the patient experience providers can position themselves as pioneers in the industry as patient satisfaction takes on a more prominent role.

**Patient Perceptions of Quality**

To properly understand how to build instruments to measure the quality of the patient experience, and use that information to build a process that leads to increased patient satisfaction it is necessary to understand what patients perceive as quality (Sofaer & Firminger, 2005). With an increased understanding of patient’s perceptions of quality, providers can begin to identify dimensions of quality from the patient’s viewpoint. A number of factors influence this perception such as: experience, knowledge, competence of healthcare personnel, commitment to the patient, willingness to serve the patient, reliability, trust, empathy and handling of critical factors (Duggirala, Rajendran, & Anantharaman, 2008). Understanding the patient perspective is vital to developing healthcare services that are patient-centric (Dabney & Tzeng, 2013). By acknowledging that these factors influence perceptions of the care they provide, healthcare organizations can achieve a more patient-centered process.

To improve the overall effectiveness and in turn increase patient satisfaction and loyalty healthcare organizations need to engage patients on every level of their care (Dabney & Tzeng, 2013). Effectively achieving this means that these organizations need to look at the process through the eyes of the patient and how they define quality. Sofaer and Firminger (2005) found that across a number of patient studies, that they categorized their experience as quality experience in terms of patient-centered care. The areas that were highlighted by patients in these studies “included having their physical and emotional needs met; receiving individualized care; being involved with their care and
decision-making about their care; having doctors, nurses, and staff who have personalized knowledge of the patient, who respect and know about the patient’s health beliefs, including beliefs regarding non-Western health practices, who build a rapport with the patient, show respect for the patient, listen to the patient and anticipate the patient’s needs; protecting patient privacy and confidentiality; having nurses who act as advocates for the patient; giving equal care for all patients; and involving family and friends in the care of the patient” (Sofaer & Firminger, 2005, p. 521). When accompanied with access to services and quality of infrastructure, healthcare providers have a solid foundation from which to analyze the quality of their process.

There are however issues with determining patients’ perceptions of quality that need to be discussed. One such issue is the instability of patient definitions and perceptions of quality (Sofaer & Firminger, 2005). These definitions can change based on a number of reasons that were identified throughout the literature. Characteristics that cause the variations can come from demographics, a patient’s health status and difficulties that exist in determining whether patients’ understand the differences between expectations and perceptions (Sofaer & Firminger, 2005). Additionally, difficulty exists in that providers believe that the technical aspects of patient care cannot be reliably evaluated by the patient (Sofaer & Firminger, 2005).

The importance of understanding patients perceptions of quality is paramount as the healthcare industry continues to progress and patients are provided with more options. By incorporating the highlighted aspects of patient-centered care, healthcare organizations can refine their care process to focus on both the physical and emotional needs of the patient. Focusing on the issues associated with identifying and measuring
patients’ perceptions of quality is essential to providers. As patients are required to accept more financial responsibility in their healthcare they expect value in their healthcare purchases, and this is achieved by providing them with a quality experience (Dabney & Tzeng, 2013). It is not enough just to collect information about expectations of patients through surveys or one-on-one interviews, the information must be used as a tool to improve quality (Sofaer & Firminger, 2005). By embracing the concept of patient-centered care, a healthcare organization can position itself as an industry leader and set the standard for service quality.

Patient Satisfaction

Patient satisfaction as an outcome of providing a patient experience that is centered on meeting the patient’s expectations of quality care, would seem to be the goal of healthcare organizations. Research has demonstrated that patient satisfaction is directly related to healthcare quality, and there is evidence that patient satisfaction plays a role and individuals will move toward those organizations providing higher quality care (Kessler & Mylod, 2011). This clearly illustrates the benefits of designing a process that will lead to improved patient satisfaction. For HMOs this is vital as satisfaction is being used to measure the performance of healthcare providers through public reporting and pay-for-performance incentives (Farley et al., 2014).

With patient satisfaction being identified as not only the desired outcome of care but as a key distinguisher of a quality process it is important to identify the areas of service that drive satisfaction in healthcare. There have been numerous studies done on what patients identify as the critical factors in what they believe lead to satisfactory care. Outcome of care, access to care, personal interest in the patient and seeing their physician
of choice are all areas that patients have deemed as essential in the evaluation of a satisfactory patient experience (Cliff, 2012; Gill & White, 2009; Meng et al., 1997). With these areas highlighted providers have the foundation necessary to shape their services to meet the expectations of their patients. If providers adopt these guidelines they should see increased levels of patient satisfaction (Meng et al., 1997).

Much like the patient experience and patients’ perceptions of quality, problems exist in accurately measuring patient satisfaction. It is difficult to draw a correlation between a provider’s performance and patient satisfaction levels given the demand and restrictions on the current healthcare system (Farley et al., 2014). Other issues with measuring patient satisfaction exist in the characteristics of the patient. Identifiers such as age, sex, geographical location, education, medication and utilization also can play a role in a patient’s satisfaction level (Meng et al., 1997). A patient’s health may also play a role in satisfaction levels. While the patient may be dissatisfied with their current health, it may not be representative of either their treatment, or the process. “Those in poor health status tended to be less satisfied with the selected dimensions (quality, costs, availability), compared with those with better health status” (Rosenbach, 1995, p. 163). The listed issues with the measurement of patient satisfaction are significant for Medicare HMOs, as they can have an impact on their star ratings and in turn their ability to generate revenue.

The problems with accurately measuring patient satisfaction do not discount its significance in determining and measuring the outcomes of the patient experience. By increasing patient satisfaction levels healthcare organizations can develop patients in terms of customer service. There has been a significant statistical link shown between
patient satisfaction and loyalty (Kessler & Mylod, 2011). Like all business, developing loyal, repeat customers, enhance an organizations ability to increase revenue. When the development of loyal customers is accompanied by the previously discussed ability to attract new patients, providers have reason to take patient satisfaction seriously. For example hospitals who score in the top 25 percent of Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) are on average the most profitable in the industry (Cliff, 2012). This demonstrates the positive impact that patient-centered care can have on a provider. “Patient satisfaction is regarded as an outcome of care itself, and it is one of the major contributors toward better patient compliance leading, presumably, to better clinical outcomes” (Duggirala et al., 2008, p. 560). With reimbursement for services performed being based on patient satisfaction, within HMOs providing Medicare services a need exists to focus on the care process and patient experience. Once again these need to be designed to meet both the physical and emotional needs of the patient.

**Selected Model**

The 5Qs model is the model adopted for this study. The focus on quality in both interactions and atmosphere seem to be an ideal fit for evaluating and improving the patient experience at healthcare providers. The 5Qs model views an organization as the sum of interdependent systems and processes (Zineldin, 2006b). This view allows management the ability to understand where problems occur and enhances their ability to correct them. Zineldin (2006a) applied the 5Qs model to the healthcare industry and identified characteristics of a quality healthcare experience in each of the five quality dimensions:
Q1: Quality of object – measures the treatment itself.

Q2: Quality of process – measures how well healthcare activities are being implemented. Examples include waiting times and speed of performing healthcare activities.

Q3: Quality of infrastructure – measures the basic resources which are needed to perform healthcare services.

Q4: Quality of interaction – measures the quality of information exchange. Examples are the percentage of patients who are informed when to return for check-ups, amount of time spent by physicians or nurses to understand the patient’s needs.

Q5: Quality of atmosphere – the relationship and interaction process between healthcare workers and patients is influenced by the quality of the atmosphere in a specific environment (Zineldin, 2006a).

The dimension above provide a solid foundation for analyzing the patient experience, the perceptions of quality in that experience and attributes that ultimately lead to a satisfactory experience. Each of the dimensions will be represented in the patient questionnaire that will ultimately be used to determine the quality of the system currently in place (Zineldin, 2006a).

The 5Qs model has been used to look at healthcare providers in other parts of the world, and this study should add significantly to the previous research by looking at a new demographic of patient, in a new country. The 5Qs model was intended to effectively analyze the process and additionally the environment, which could play a role in patient satisfaction. Zineldin (2006a) went on to state “this is applicable in hospitals, medical centre or private medical clinic atmosphere where the patient, physician, nurses
and other healthcare staff are operating in turn, the atmosphere influenced by the characteristics of the partners involved and the nature of the interaction itself. The atmosphere can affect the perceived quality by improving it or making it worse” (p. 69).

Zineldin’s (2006a) original research was done at medical clinics in Jordan and Egypt with funding from the European Union. He found that when the 5Qs model was used to evaluate these clinics, that the model provided insight into which dimensions would need to be influenced to improve patient satisfaction (Zineldin, 2006a). This research was confirmed by Hussain and Rehman (2012) when they conducted a similar study at University Hospital in Umea, Sweden. They too found that by utilizing the 5Qs model the dimensions in which the hospital was failing to meet patient expectations could be identified and then improved on (Hussain & Rehman, 2012). The success of these studies gives credence to this study’s choice to utilize the 5Qs model to identify dimensions in which the HMO provider in Las Vegas is failing to meet its patient’s expectations.

Even with the success of these previous studies there are still potentially limitations with the 5Qs model. As previously discussed one criticism of the 5Qs model is that it focuses too much on perceptions and minimizes the impact of expectations. Analyzing the differences between what a patient expects and what the patient perceives of their experience with a provider is also important. The GAP model was created just for this reason and has been successfully used in a number of industries. With this in mind the study will need to take steps to ensure that it takes into account both perceptions and expectations.
Surveys have proven to be reliable instruments for gaining insight into consumer and patient experiences and expectations (Sofaer & Firminger, 2005). They are a relatively inexpensive, quick, efficient and accurate way of collecting information about a population (Zikmund, Babin, Carr, & Griffin, 2010). As a means of collecting data on a large patient population, surveys are a productive instrument. In utilizing this instrument of measurement organizations, and this study, have the ability to gather data on patients’ perceptions of the healthcare process. In doing so, a quantitative analysis can be conducted that identifies themes in patient responses and draws conclusions based on those themes (Zikmund et al., 2010). This has been demonstrated by increased use of surveys such as CAHPS to evaluate the quality of care and level of patient satisfaction in the healthcare industry. Sofaer and Firminger (2005) noted that these surveys have “given us more confidence in the validity and salience of survey results and in research that uses the results as measures of either independent or dependent variables” (p. 553).

It must be noted that there has been discussion as to the effectiveness of surveys in measuring the patient experience and patient satisfaction. Areas such as the literacy of the study population, the reliability and validity across cultures, the confusion between expectations and experiences, and whether the results of surveys actually lead to clinical improvements have all been discussed in the literature (Lees, 2011; Sofaer & Firminger, 2005). These areas are a concern to this study and others conducting this type of research. These concerns provide justification for also including a more qualitative method of data collection and are a primary reason this study was done in conjunction with focus groups. Healthcare organizations have argued that surveys are not an
appropriate tool to discover objective elements of quality in the delivery of care (Farley et al., 2014). Providers believe that patients are incapable of accurately portraying their levels of satisfaction through the use of surveys. Even with these misgivings surveys have proven to be representative, reliable and accurate when assessing a company, a process or an individual in terms of quality (Lovelock & Wirtz, 2010).
CHAPTER THREE

RESEARCH METHODOLOGY

This chapter will explain the methods used to design and conduct this study. It will look at the study’s proposed hypotheses, discuss the sample design and selection, the instrument of measurement, how the instrument was administered and how the data was analyzed. Furthermore the chapter will discuss limitations of the study and conclude with ethical considerations of the research.

The HMO in this study is one of the largest providers of primary care services in Nevada with over 200 providers, nine healthcare centers, five urgent care clinics and an outpatient surgery center. Comparatively this is a good sized medical corporation and in its region is one of the predominate providers of Medicare services. This study came about due the selected HMOs failing marks in terms of the quality of their patient experience on the CAHPS surveys. As previously discussed the CAHPS survey results impact the providers Medicare Star Rating and ultimately their ability to be reimbursed for services performed. In these terms the research conducted is critical for the HMO, but there is a great deal more to be learned from this study. A quality experience should be the goal of all healthcare providers, and the research conducted in this study will contribute to previous research on both patient and customer satisfaction. With this information healthcare providers can design a patient experience based on patients’ perceptions of quality, and this can assist in achieving their desired outcomes.

After reviewing the literature it was determined that there had been a number of studies on the connections that exist between service quality and satisfaction. However, very few have been done using the 5Q model of service quality which allowed the study
to take a closer look at how atmosphere, interaction and infrastructure can impact patient’s perceptions of quality and satisfaction (Zineldin, 2006a). This study’s utilization of the 5Qs model to measure patient satisfaction based on their perceptions of quality pertaining to their experience has led to the development of the following hypotheses.

H1: The quality of the treatment and interaction with the doctor will have a positive impact on the patient’s experience.

H2: The quality of the healthcare process (wait times and scheduling) will have a positive impact on the patient’s experience.

H3: The quality of the facilities and equipment will have a positive impact on the patient’s experience.

H4: The quality of the information exchange between the provider and patients will have a positive impact on the patient’s experience.

H5: The quality of interactions between the staff and patients will have a positive impact on the patient’s experience.

Study Participants

The target population for this study is Medicare Advantage patients at the participating HMO. By studying this population and establishing relationships between the quality of process and patient satisfaction the study can add to existing research, and be valuable for the participating HMO and other similar Medicare providers. Having selected a survey as the research method it was necessary to select the participants who would be used in the study. The sampling framework was one clinic from the selected HMO providing service to Medicare Advantage patients in Las Vegas, NV.
A convenience sampling technique was utilized for selecting participants in this study. This sampling technique allowed for the research team to survey all available Medicare patients on the days that the HMO made available for administration of the survey. Being that the survey was done in a clinic as patients were leaving, a convenience sample was the most efficient way of administering the survey. It would have been ideal to take a random sample from the HMOs database and survey them directly, but this method was not feasible due to time constraints, and the HMOs desire to have the study done at the clinics. The research team was directed by the provider to administer this questionnaire to 100 participants during the allotted time at the clinic. A sample size of 100 was the target because it would have provided the research team with a large enough sample to be confident in the results. Given that the research team was only provided with two dates on which they could administer the study, the potential existed of the team not collecting 100 usable questionnaires.

**Questionnaire Design**

For the purpose of this study a questionnaire (located in appendix A) was built off of previous qualitative research done by the HMO. The HMO conducted focus group research on the quality of their process approximately three months prior to administration of the questionnaire. The focus groups were selected by an independent research firm and called into to participate in the study. The focus groups were recorded and the recordings were provided to this research group for analyzing. By analyzing the video areas in which patients seem dissatisfied were identified. Given that a portion of the focus group questions were grounded in the 5Q model of service quality these focus groups provided an excellent foundation for building the questionnaire that was
administered for this study. By utilizing a questionnaire both the research team and HMO were able to generate findings that are more representative of the larger Medicare population that is being treated at the provider.

The 5Q model of service quality was selected as the model from which the questions in the survey would be based. The primary variables in the study are patient satisfaction and the 5Qs model, with patient satisfaction being the dependent variable. In other words patient satisfaction as an outcome is dependent on the quality of service in the process. The 5Qs model will provided a framework from which the process was broken down and questions targeting the five dimensions of service quality were developed.

Reliability

The research conducted should demonstrate reliability characteristics, in that any research attempting to recreate the study should find similar results. The use of a fixed-alternative structured questionnaire is a good tool for developing a reliable study (Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M., 2010). Thus the use of the survey administered in this study will make for a good tool in assisting future researcher to replicate its findings. To truly test reliability of the study, the research would be best served by implementing a test-retest method. In doing this the survey could be administered a second time to the same respondents to verify the results of the first survey. Given the time constraints of this research project it will not be possible to verify in this manner.
Validity

There is also the potential for validity issues with the study. Validity with the research will indicate the study’s ability to accurately represent the views of Medicare Advantage patients on the quality of the patient experience and their subsequent satisfaction levels. The questions in the survey will be designed to capture this information as it is a vital part of the research that validity is established in the examined dimensions with the questionnaire. On a large scale it may be difficult to establish external validity because the study will only be conducted at one HMO, located in Las Vegas, NV (Zikmund et al., 2010). However, internal validity should be established because the research is a cause and effect study where one variable can impact another (Zikmund et al., 2010). The survey utilized in this research uses questions with fixed answers so this should provide an adequate level of internal validity.

Scoring and Analysis

The questionnaire is broken down into questions covering the five dimensions of the 5Q model of service quality. It was done using a fixed-alternative questionnaire which limits the number of responses available to the survey’s respondents. The survey will be scored on a Likert Scale to gauge the respondent’s reactions to different elements on quality in the service process (Zikmund et al., 2010). This allows the participants to decide how strongly they “agree” or “disagree” with the presented questions. A strong agreement will garner a score of ten, demonstrating a favorable attitude towards the presented statement (1=strongly disagree, 10=strongly agree). The survey was constructed to avoid difficult questions and encourage participants to answer honestly, thus the questionnaire was better suited to gather the information (data) the study needed.
for analysis. The data was then analyzed using statistical software to determine if there was a statistical significance in the quality of the patient experience as it pertains to patient satisfaction levels.

**Administration of The Study**

This study took place at the selected clinic that falls under the guidance of the HMO participating in this study. The survey was pretested to ensure the questionnaire established the metrics that the study was intended to identify. This was done by taking a convenience sample of Medicare patients on the morning prior to day the questionnaire was fully administered. The ease of a convenience sample assisted in facilitating the pretest in a timely manner.

As previously discussed the participants in the survey were also selected using a convenience sampling technique. They were contacted at the selected HMO as they checked out of the clinic and asked to participate in the survey. They were then read and offered a copy on the University of Nevada, Las Vegas Informed Consent Document (Appendix B) so that they had a full understanding of the process. There were two members of the research team administering the survey at the provider over a two day period. Both members of the survey team were trained to properly administer the survey in an effort to eliminate potential errors. At the conclusion of the administration of the survey the survey was collected by the research team for analysis.

The information collected is primary data which is data collected by the research team and used to test the proposed hypotheses. It provides original and specific information to be used in assessing the research problem (Hussain & Rehman, 2012). For collection purposes the HMO administration was contacted to arrange for dates and
times in which the research team could administer the survey. Once at the clinic the research team administered the survey to any interested parties that qualified as Medicare Advantage patients.

**Data Analysis**

The information collected in this survey was analyzed to determine if there was statistical significance between the quality of the process and patient satisfaction. Given that the questionnaire was designed using the 5Q model of service quality it was important to analyze the impact of the independent variables measuring quality on the dependent variable of patient satisfaction. The data was analyzed using Minitab 17.0 statistical software to identify standard deviations, frequency, means, response rates to the questions and various statistical regression tests.

**Ethical Issues**

There were potential ethical issues with this research process, and it is important in research that ethical guidelines are both set and upheld. This is done to prevent potential damage to those involved in the research process. For this study an informed consent document was read to the participants to assist them in understanding the research instrument and to aid in providing complete disclosure. There were also measures in place to ensure that the information collected remains confidential. To assist in maintaining confidentiality all surveys were taken anonymously. There were no names or identifying information on the surveys and once collected the information was maintained by the research team. The information is being presented as collected without any modification and all participation was voluntary.
Potential Sources of Error

There were potential sources of error that needed to be protected against in the administration of this study. One such error was administrative error in the analysis of the data. To prevent this the data was reviewed by multiple researchers for verification purposes. Only after sufficient review of the information yielded did the research proceed with drawing conclusions. Other possible errors are: nonresponse errors from respondents failing to complete the survey, acquiescence bias where the participants tend to agree or disagree with all or most of the questions and deliberate falsification of survey answers.

Limitations

With this research, as with all research there are limitations that need to be addressed. One limitation exists in the method chose to carry out this study. While surveys with close-ended questions are an excellent source for gathering information quickly, inexpensively, efficiently and accurately about a population, they can also miss some valuable data. They tend to be cold way of collecting data, and can fail to capture the actual opinions of the participants as they only allow for limited responses. The questionnaire involved in this study did not allow for a back and forth discussion with the respondents. Therefore it may not have clearly identified the reasoning for their opinions on the quality of the care they received.

Additional limitations existed in that only one HMO provider from Las Vegas, NV was used in this study, and that a convenience sampling method was utilized. By only using one provider the research can only be generalized to the population of that provider. To gain an accurate view of the larger Medicare Advantage population it
would be necessary to conduct further research at other providers in other cities. Due to
time constraints that was not possible for this study. These time restraints also facilitated
the research being done using a convenience sampling technique which will make
projecting the findings of the study beyond the selected clinic carry some risk. Other
healthcare providers would assume risk in using the findings as a way of measuring the
quality of their process.
CHAPTER FOUR

ANALYSIS OF THE DATA

This study aims to identify drivers of quality in a patient’s experience and how healthcare providers can improve their services by focusing on those drivers. As previously mentioned the provider analyzed in this study has received failing marks on their CAHPS in terms of quality so the research team utilized a survey as a means on conducting a quantitative analysis on the quality of their treatment process. The research team collected and analyzed this data, and the statistical results were interpreted and will be presented in this chapter.

Data Collection

The data for this study was collected over a two day period on April 30, 2015 and April 31, 2015. The participants in this study were Medicare Advantage Patients being treated at the selected provider. The surveys were executed using Quick Tap Survey, a survey application provided on the Apple IPad. The researchers intercepted potential study candidates, asked for the voluntary participation and read the respondents the University of Nevada, Las Vegas Informed Consent Document. The benefit of doing the survey on the IPads was that the surveyors were able to ask the questions and enter the answers. This lowered the potential for user error and unusable surveys. At the end of the two days the research team had collected 84 useable surveys.

Data Analysis

After the data was collected it was transferred into Microsoft Excel so that if could be formatted for use by Minitab. There were three questions associated with each area of the 5Qs model and these questions were then coded to assist in the analysis. The
questions were assigned a value of V2 through V16 and designated to determine their impact on V17 (Y or overall satisfaction with the experience) as seen in Table 1.

Table 1

*Question and Hypothesis Correlation*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2</td>
<td>Today the doctor listened to my concerns.</td>
</tr>
<tr>
<td>V3</td>
<td>Today the doctor clearly explained my situation.</td>
</tr>
<tr>
<td>V4</td>
<td>Today the treatment I received met my expectations.</td>
</tr>
<tr>
<td>V5</td>
<td>Today's appointment was easy to schedule.</td>
</tr>
<tr>
<td>V6</td>
<td>I was able to get an appointment today that fit well into my schedule.</td>
</tr>
<tr>
<td>V7</td>
<td>The wait times at the clinic today were minimal.</td>
</tr>
<tr>
<td>V8</td>
<td>There was plenty of parking available today.</td>
</tr>
<tr>
<td>V9</td>
<td>It was easy to reach the clinic where my appointment was scheduled.</td>
</tr>
<tr>
<td>V10</td>
<td>The clinic was very clean today.</td>
</tr>
<tr>
<td>V11</td>
<td>Instructions I was given by the staff were easy to understand.</td>
</tr>
<tr>
<td>V12</td>
<td>The staff prepared me for what to expect throughout the visit.</td>
</tr>
<tr>
<td>V13</td>
<td>The staff was clear in their instructions for possible follow up visits.</td>
</tr>
<tr>
<td>V14</td>
<td>The staff was attentive to my concerns today.</td>
</tr>
<tr>
<td>V15</td>
<td>I was treated very well by the staff today.</td>
</tr>
<tr>
<td>V16</td>
<td>The staff was friendly today.</td>
</tr>
<tr>
<td>V17(Y)</td>
<td>My experience at the clinic met my expectations today.</td>
</tr>
</tbody>
</table>

H1: The quality of the treatment and interaction with the doctor will have a positive impact on the patient’s experience. (V2, V3, V4 impact Y in a positive way.)
H2: The quality of the healthcare process (wait times and scheduling) will have a positive impact on the patient’s experience. (V5, V6, V7 impact Y in a positive way.)

H3: The quality of the facilities and equipment will have a positive impact on the patient’s experience. (V8, V9, V10, impact Y in a positive way.)

H4: The quality of the information exchange between the provider and patients will have a positive impact on the patient’s experience. (V11, V12, V13 impact Y in a positive way.)

H5: The quality of interactions between the staff and patients will have a positive impact on the patient’s experience. (V14, V15, V16 impact Y in a positive way.)

The data was then entered into Minitab and a graphical summary of the data (Appendix C) was generated to show the frequency with which respondents chose the various answers to the questions. The questions associated with the five areas of the 5Qs model were scored on a ten-point Likert Scale. There was also one question associated with the frequency with which participants use the facility. The graphically summary shows the frequency that the respondents selected the corresponding numbers on each question in the survey.

**Demographics**

In addition to the questions listed above there were three demographic questions on the survey to help categorize the respondents. The majority of those who responded to the survey were female (54%), white (67%) and fell between the ages of 66 and 70 (30%). Table 2 shows the breakdown of the variables examined by the demographics questions.
As is shown in the above table demographics were broken down into three areas: gender, age and ethnicity. Given the small sample size this study made the decision to focus on whether gender played a role in a patient’s perceptions of a quality experience.
Figure 2 below is a heat map showing the proportions as to where both males and females answered the various questions in regards to quality.

Figure 2 shows the questions on the vertical axis and the responses on the horizontal axis. It is evident by the shading that for the most part both males and females answered similarly throughout the survey. However, the yellow shading on V2-V4 show
that females did tend to rate their interactions with the doctor more favorably than their male counterparts.

**Statistical Results and Data Interpretation**

Table 3

*Descriptive Statistics*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment (V2+V3+V4)</td>
<td>8.52</td>
<td>1.49</td>
<td>84</td>
</tr>
<tr>
<td>Process (V5+V6+V7)</td>
<td>6.75</td>
<td>1.76</td>
<td>84</td>
</tr>
<tr>
<td>Facilities (V8+V9+V10)</td>
<td>8.81</td>
<td>1.48</td>
<td>84</td>
</tr>
<tr>
<td>Information (V11+V12+V13)</td>
<td>8.36</td>
<td>1.27</td>
<td>84</td>
</tr>
<tr>
<td>Interactions (V14+V15+V16)</td>
<td>7.98</td>
<td>1.43</td>
<td>84</td>
</tr>
<tr>
<td>Overall Experience (V17)</td>
<td>7.93</td>
<td>2.43</td>
<td>84</td>
</tr>
</tbody>
</table>

Table 3 shows the mean and standard deviation of the five dimensions of the 5Qs model of service quality and overall experience as related to this study. It is important to note that all of the areas with the exception of process (V5+V6+V7) had means of 7.93 or higher. Process came in with a mean of 6.75 which demonstrates that patients selected lower numbers when it came to wait times and scheduling. This could be evidence of a problem that the provider will want to address in their patient treatment process.
Multiple Linear Regression Analysis

Next a multiple linear regression (MLR) model was run to show the relationship between Y (my experience at the clinic today met my expectations) the dependent variable and independent variables (V2 through V16). After running this analysis it was shown that only two variables were significant with a Variance Inflation Factor (VIF) less than 10%. The results for V6 and V16 are shown in table 4 below.

Table 4

*Significant Coefficients*

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Beta</th>
<th>Std. Error</th>
<th>T-Value</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>V6</td>
<td>-0.332002</td>
<td>0.139622</td>
<td>-2.378</td>
<td>0.0228</td>
</tr>
<tr>
<td>V16</td>
<td>0.425828</td>
<td>0.162450</td>
<td>2.621</td>
<td>0.0128</td>
</tr>
</tbody>
</table>

The other independent variables in the regression showed a high degree of multicollinearity or similarity, and had VIF’s sometimes exceeding 10% which resulted in a poor initial model for analysis. It was decided that the model would be run a second time after insignificant predictors were dropped from the formula and when this was done the only on predictor left that was significant at 5% was V16 (the staff was friendly today). This proved to be a poor model as well and it was determined that a Principle Component Analysis (PCA) (Appendix D) should be run to determine which of the variables should selected for a final regression model.

Principle Component Analysis

To remove the correlation between the importance ratings, a PCA was done for the data collected on each segment of the total sample. Principal component analysis is
used to reduce a number of variables into smaller sets of composite variables, called “components.” These components are linear combinations of the original variables. For example we asked respondents three questions about their experience with the physician. The answers to the three questions were very similar throughout the population. By using a PCA we can combine the three questions into a single component.

One advantage of this is that the data becomes more meaningful and easier to analyze. Rather than considering three individual attributes, you only need to think about the thought that the three variables represent. This is an advantage in that by removing the redundancy in the original data, the derived components are essentially uncorrelated with each other. Principal component analysis is considered subjective because the analyst needs to determine how many components to keep.

To determine which components to keep we looked at the data in the following way. The PCA on the first set of questions (V2+V3+V4) revealed that PC1 explains 82.38% of the variance so it can be used in the final model. On the second set of questions (V5+V6+V7) the first two PC’s explain 89.52% of the variability and therefore can be used in the final model. When dealing with the third set of questions (V8+V9+V10) it was determined the PC1 and PC2 would be used as they explained 91.36% of the variance. PC1 and PC2 once again were chosen from the next analysis as they explained 88.99% of the variance in V11+V12+V13. The final set of questions (V14+V15+V16) showed that only PC1 would be necessary for analysis as it explained 82.68% of the variance. With this information available a Principle Components Regression (PCR) was run to determine which components were significant for a final regression analysis to be run. The final regression model can be seen in Appendix E.
From this final model significant information was identified and can be seen below in Table 5.

Table 5

**Significant Principle Coefficients**

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>T-Value</th>
<th>P-Value</th>
<th>Sig.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pca1D</td>
<td>0.10802</td>
<td>0.04702</td>
<td>2.297</td>
<td>0.0242</td>
<td>.05</td>
<td>1.16</td>
</tr>
<tr>
<td>Pca1EF</td>
<td>-0.09890</td>
<td>0.05037</td>
<td>-1.964</td>
<td>0.0531</td>
<td>.10</td>
<td>1.06</td>
</tr>
<tr>
<td>Pca1INF</td>
<td>-0.24114</td>
<td>0.07230</td>
<td>-3.335</td>
<td>0.0013</td>
<td>.05</td>
<td>1.59</td>
</tr>
<tr>
<td>Pca1INT</td>
<td>-0.26580</td>
<td>0.05775</td>
<td>-4.602</td>
<td>1.57e-05</td>
<td>.05</td>
<td>1.63</td>
</tr>
</tbody>
</table>

In this table Pca1D can be thought of as the questions associated with treatment (V2+V3+V4), Pca1EF can be thought of as equipment and facilities (V8+V9+V10), Pca1INF can be thought of as V11+V12+V13 (information exchange) and interaction with staff (V14+V15+V16) can be thought of as Pca1INT.

This final model produced an R-Square of 59.94%, and an adjusted R-squared of 57.91%, which indicates that nearly 60% of our dependent variables have success on the statistical analysis. It also indicates that with 60% confidence that research can predict future variability. Additionally Pca1D is 0.01802 which is greater than zero and each loading is greater than zero which implies that Y (V17) increases with Pca1D. Pca1EF, Pca1INF and Pca1INT are less than zero with all loadings being less than zero, which implies that Y (V17) increases with all three components. This accompanied with all four components having a VIF close to 1.00 demonstrates that the final PCR fits the data.
quite well. With this analysis done it is now possible to look at the significance of the five proposed hypotheses.

**Hypothesis Testing**

There were four components of the 5Qs model of service quality that demonstrated a positive impact on the overall patient experience. Therefore based on the analysis of the data the proposed hypotheses.

H1: The quality of the treatment and interaction with the doctor will have a positive impact on the patient’s experience. (Accepted)

H2: The quality of the healthcare process (wait times and scheduling) will have a positive impact on the patient’s experience. (Rejected)

H3: The quality of the facilities and equipment will have a positive impact on the patient’s experience. (Accepted)

H4: The quality of the information exchange between the provider and patients will have a positive impact on the patient’s experience. (Accepted)

H5: The quality of interactions between the staff and patients will have a positive impact on the patient’s experience. (Accepted)
CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSION

The purpose of this study was to utilize customer service theory, more specifically the 5Q model of service quality to analyze the service process at the selected Medicare HMO. Looking at an HMOs process in these terms had yet to be done, and by doing so the research was able to identify weaknesses and just as importantly strengths in the process of the selected provider. The study asked questions about the quality in five distinct categories: treatment, wait times and scheduling, facilities, information exchange and interactions with the staff. The study also looked for feedback on the patients overall experience and the demographics of study’s population.

Key Findings

The data analysis showed a link between the quality of the process and the level of satisfaction with their experience at the selected provider. Table 4 showed the means and standard deviations within the five dimensions of the 5Qs model. While four of the dimensions scored relatively well near or above a mean of 8.00, the area of quality of the healthcare process as it deals with wait times and scheduling only scored a 6.75 which could indicate displeasure among the patients with these areas. The standard deviation for the process also was higher than the other dimensions which indicates are wider range of answers being selected. This could demonstrate a lack of consistency in this area at the provider.

Table 3 shows that generally males and females had the same experience during their visits to the HMO. However, females did tend to rate their interactions with the
doctors higher than their male counterparts. This demonstrates that females feel as if their interactions with the doctors are more favorable.

After running a PCA to better determine the variables to be used in the final regression model it was eventually determined that four of the five dimensions of the 5Q model of service quality had a positive impact on a patient’s experience. This aligns with Zineldin’s theory that, “patient satisfaction is a cumulative combination of different constructs, summing satisfaction with various facets of the healthcare organization, such as technical, functional, infrastructure, interaction and atmosphere variables items” (Hussain & Rehman, 2012, p. 36). The data also supports the researcher’s idea that it takes a quality interaction in each aspect of the 5Qs model to have an overall positive impact on patient satisfaction.

**Implications**

This research could have implications on both future research and the way that the healthcare provider in this study operates. As the healthcare industry continues to become more competitive and reimbursements for performed services hinge on patient satisfaction levels this study can provide insight for companies looking to improve the quality of their process. The literature on customer service theory has demonstrated the importance of providing a quality experience. By providing a quality experience a provider can have an effect on their ability to both attract and retain patients.

The practical implication of this study is that it provides specific answers to the Health Maintenance Organization utilized for the research. The research provides insight for the provider as to where their process is succeeding and failing to meet expectations. They can use this information in conjunction with their knowledge of the CAHPS survey
to improve their ratings in terms of quality on the surveys that are sent out annually to their patients. It provides them with a data set to show their employees areas in which they can make an impact while keeping the patients’ perceptions of quality as the company’s focus.

From a theoretical perspective the research provides insight into how to operate a healthcare organization with a customer service mindset. The information gathered and examined in this research through the use of reviewed literature and empirical data can be used by future researchers. The study is a contribution to literature on healthcare quality and the patient experience, and highlights that the 5Q model of service quality can be used to effectively research the quality of a provider’s process. By looking at patients’ perceptions of quality, the predominate drives of quality and the attributes of a patient’s experience that lead to patient satisfaction the study has added to the research in each of these areas.

**Limitations**

The study did come across some limitations during its execution. The first limitation encountered was that the research team was only able to accumulate 84 usable surveys. While this is enough to provide statistical significance, it would have been beneficial to the research to collect more. The increased participation would make the information more generalizable to the larger population of the provider’s patients. This lead to the study’s second limitation in that because of time limitations the research team only had two days to collect responses to the questionnaire. This contributed to the study not reaching its goal of 100 usable surveys.
Another limitation was not knowing the demographics and attitudes of the employees working at the provider. There could be correlation between the ratings identified in this study and these areas. For example women rated their experience with doctors more favorably than men. Knowing the gender, ethnicity and other identifying characteristics of the doctors treating the group could play an important role why the men and women in this study answered these questions differently.

There were two more significant limitations that had an effect on the study. The use of a convenience sampling technique which limits the randomization of the study. Thus it is difficult for other providers to use the findings to make assumptions about their patient populations. The use of one Medicare HMO provider in Las Vegas also put limitations on the study. If the research had more time it would have been beneficial to survey multiple providers in Las Vegas or other cities. This would make the data collected more generalizable to the larger Medicare Advantage population.

**Discussion**

Studying the healthcare industry in terms of customer service theory can prove to be useful to the medical industry. The data collected can help the provider and other healthcare organizations to determine the areas of their patient treatment process in which they are failing to meet patient expectations. Research has demonstrated that by focusing on the patient’s experience, healthcare providers can generate the responses they desire for the services they provide. Generating higher Medicare Star Ratings is now more important than ever for healthcare organizations providing care to Medicare patients. As of 2015 not only will it directly impact how they are reimbursed for services performed,
but with the implementation of bonus payments programs for quality care there is a new revenue stream available for these providers.

Based on both the literature review and the results of this study it would be beneficial for the healthcare organization in this study to begin implementing their own hospitality and customer service programs. Achieving quality is a continually evolving process so it is imperative that the healthcare organization create quality control positions within their organization. These positions need to oversee every aspect of the patient’s experience including clinical, administrative and operational functions of the provider. By ensuring that each aspect of the company is meeting quality standards implemented to improve the patient’s experience, providers can move past viewing the patient’s health outcomes as a benchmark for success and embrace both the physical and emotional health of the patient. By governing and demonstrating quality improvement, marked improvement in the patient care process can be achieved and remain a priority.

In effort to engage patients more effectively the provider in this study could create case manager or patient advocate positions. These positions would be a direct point of contact for patients to assist them with all aspects of their healthcare. They could provide assistance scheduling appointments, reminding patients of scheduled appointments, help with refills of prescriptions, arrange for transportation and ultimately act as voice for the patient within the healthcare provider. It has been shown that by engaging patients more outside of the provider there is a reduction of use of healthcare facilities (LaVela & Gallan, 2014). Over time these patient advocates could reduce the stress being placed on clinics by over or improper use, and help to ease the burden being placed on the staff.
It will be important for the provider to implement customer service benchmarks within their organization. This will require training the staff on expectations the provider has about their interactions with the patients. Areas such as not updating patients on wait times, failing to inform patients of future appointments, and the lack of a friendly and pleasant exchange with a patient can all have a negative impact on the provider. To ensure that the staff is engaging patients in an effective manner that is in line with the provider’s goals, the organization can implement a mystery shopper or shadowing program. While no single visit can encompass what every patient’s experience is like, over time by mystery shopping the clinics you can begin to establish patterns. The reports from these events can then be used to refine and improve the process. There is the additional benefit when using these programs of the element of the unknown, which can have positive impact on an employee’s performance if they suspect that they are being observed.

Conclusion

With the recent changes in healthcare laws in the United States it is more important than ever for providers to achieve higher patient satisfaction levels and an improved patient experience. The focus of this study was to identify key drivers and attributes of the patient experience that influence patient satisfaction. As HMOs continue to trend towards becoming more customer service focused the opportunity exists for forward thinking companies to expand their operations.

Based on the analysis of the collected data in this study the opportunity exists to have a positive influence on the overall quality of a patient’s experience by focusing on the quality of every interaction point with a patient. The 5Q model of service quality
provides a solid model in which healthcare providers can examine the quality of each of area of treatment. The research demonstrated that treatment, equipment and facilities, information exchange and interaction with staff all had a positive impact on the patients overall experience. This establishes that a provider must identify the key drivers of a quality patient experience in each dimension of their treatment process in order provide an overall experience that meets their patients’ expectations. For the provider in this study this information can be used to establish customer service processes that will in turn lead to the Medicare Star Ratings and increased revenue they desire.

**Future Research**

The opportunity to further explore how understanding the patient experience exists. One such way would be to take the data in this study and see how manipulating the areas examined would influence patient behavior. This could be done by implementing some of the previously suggested strategies and then repeating the survey after a designated period of time. It would also be pertinent for the provider to survey their employees to determine levels of employee satisfaction. Having an employee base that is displeased with the company they work for can most certainly have an impact on customer service.

It would also be beneficial to conduct this study on a larger scale and over a longer time period. This would be beneficial in establishing a more generalizable population and identifying patterns over time. Lastly, research could be done to look deeper into the demographics and identify trends in the different areas. For example the provider has clinics throughout the Las Vegas area and their ratings at clinics in areas that have different demographic makeup could influence how the patient populations view
their treatment. There was evidence in this study that differences exist between the genders in their interactions with the doctors. These sort of differences could exist in any number of arrangements, and if a provider can identify them across their entire organization they have the ability to enact real change.
APPENDIX A: QUESTIONNAIRE

Hello, I am a graduate school student at the University of Nevada- Las Vegas (UNLV). I would be very grateful if you could answer some questions about your visit today for my master’s thesis project. It will take approximately 5-10 minutes to complete the questionnaire.

Participation will be treated as anonymous and confidentially.

Thank you for your participation.

Including today how many times have you visited a Southwest Medical Associates (Optum Medical Services) clinic, quick care clinic or convenient care facility in the last 12 months?

0-3
4-6
7-9
10 or more

*Treatment

How does each of the following statements reflect the care you received today?

- The doctor listened to my concerns
- The doctor clearly explained my situation
- The treatment I received met my expectations

Scale 1 = strongly disagree
10 = strongly agree

*Waiting Times/Scheduling

How does each of the following statements reflect your experience with today’s visit?

- It was easy to schedule to my appointment
- I was able to get an appointment that fit well into my schedule
- Wait times at the clinic were minimal

Scale 1 = strongly disagree
10 = strongly agree

*Facilities
How does each of the following statements reflect the clinic you visited today?

- There was plenty of parking available
- It was easy to reach the clinic where my appointment was scheduled
- The clinic was very clean

Scale 1= strongly disagree
10= strongly agree

*Information exchange

How does each of the following statements reflect your experience with the staff during today’s visit?

- Instructions I was given were easy to understand
- The staff prepared me for what to expect throughout the visit
- The staff was clear in their instructions for possible follow up visits

Scale 1= strongly disagree
10= strongly agree

*Interactions with the staff

How does each of the following statements reflect your experience at the clinic today?

- The staff was attentive to my concerns
- I was treated very well by the staff
- The staff was friendly

Scale 1= strongly disagree
10= strongly agree

*Overall Experience

How does the following statement reflect your experience today?

- My experience at the clinic today met my expectations

Scale 1= Very bad experience
10= Great experience

Now I would like to ask you just a few more questions to gather some information about patients visiting the clinic today.
Demographics
-Please select the appropriate answer.

Are you male or female?
Male / Female

Which age group do you fall in?
59 or under
60-65
66-70
71-75
76-80
81 or over

Ethnicity origin (or race): Please Specify
White
Hispanic or Latino
Black or African American
Native American or Indian American
Pacific Islander or Asian
Other
TITLE OF STUDY: Understanding the Experience of Medicare Advantage Patients in a Health Maintenance Organization

INVESTIGATOR(S): Boldman, Curtis E., Shoemaker, Stowe and McBeath, Jessica

For questions or concerns about the study, you may contact Curtis Boldman at (702) 496-7272.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted, contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794 or via email at IRB@unlv.edu.

Purpose of the Study
You are invited to participate in a research study. The purpose of these study is to gain insight into what drives patient satisfaction for an HMO providing medical services to Medicare Advantage patients.

Participants
You are being asked to participate in the study because you fit this criteria: Medicare Advantage patient utilizing the services provided by Southwest Medical Associates (SMA).

Procedures
If you volunteer to participate in this study, you will be asked to do the following: Participate in a questionnaire about your experience with the SMA clinic.

Benefits of Participation
There will not be direct benefits to you as a participant in this study. However, we hope to learn areas where the provider can improve the services that they provide to you.
**Risks of Participation**
There are risks involved in all research studies. This study may include only minimal risks. *These risks may be some discomfort with the questions being asked by the research team.*

**Cost**
/Compensation

There will not be financial cost to you to participate in this study. The study will take 5-10 minutes of your time. You will not be compensated for your time.

**Confidentiality**
All information gathered in this study will be kept as confidential as possible. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time the information gathered will be destroyed.

**Voluntary Participation**
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

**Participant Consent:**
I have read the above information and agree to participate in this study. I have been able to ask questions about the research study. I am at least 18 years of age. A copy of this form has been given to me.
APPENDIX C: GRAPHICAL REPRESENTATION OF DATA

**Frequency**

- 0-3: 35
- 4-6: 25
- 7-9: 20
- 10+: 15

**Doctor listened to concerns**

- 1, 2, 3, 4, 5: 5
- 6, 7, 8, 9, 10: 25

**Doctor clearly explained my situation**

- 1, 2, 3, 4, 5: 5
- 6, 7, 8, 9, 10: 25

**Treatment met my expectations**

- 1, 2, 3, 4, 5: 5
- 6, 7, 8, 9, 10: 25
Today's appointment was easy to schedule

Today's appointment fit my schedule

Today's wait times at the clinic were minim

There was plenty of parking available today
It was easy to reach the clinic

The clinic was very clean today

Instructions given by staff were easy to understand

The staff prepared me for what to expect throughout the visit

1 = SD, 10 = SA
Response
My experience at the clinic met my expectations today

1 = SD, 10 = SA
APPENDIX D: PRINCIPLE COMPONENT ANALYSIS

Treatment and Interaction with the Doctor
Importance of components:

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<th></th>
<th>Comp.1</th>
<th>Comp.2</th>
<th>Comp.3</th>
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</thead>
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<tr>
<td>Std Dev</td>
<td>2.7127210</td>
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<tr>
<td>Prop Var</td>
<td>0.8238518</td>
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<td>Cum Prop</td>
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Use PC1 only

Loadings:

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<tr>
<td>[1,]</td>
<td>0.565</td>
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<td>[2,]</td>
<td>0.616</td>
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<td>[3,]</td>
<td>0.549</td>
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------------------------- Healthcare Process (Wait times & Scheduling) -------------------------
Importance of components:

<table>
<thead>
<tr>
<th></th>
<th>Comp.1</th>
<th>Comp.2</th>
<th>Comp.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std Dev</td>
<td>2.8607490</td>
<td>1.3522851</td>
<td>1.0825729</td>
</tr>
<tr>
<td>Prop Var</td>
<td>0.7317151</td>
<td>0.1635005</td>
<td>0.1047844</td>
</tr>
<tr>
<td>Cum Prop</td>
<td>0.7317151</td>
<td>0.8952156</td>
<td>1.0000000</td>
</tr>
</tbody>
</table>

Use PC1 & PC2

Loadings:

<table>
<thead>
<tr>
<th></th>
<th>Comp.1</th>
<th>Comp.2</th>
<th>Comp.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1,]</td>
<td>-0.484</td>
<td>-0.484</td>
<td>0.729</td>
</tr>
<tr>
<td>[2,]</td>
<td>-0.567</td>
<td>-0.461</td>
<td>-0.683</td>
</tr>
<tr>
<td>[3,]</td>
<td>-0.667</td>
<td>0.744</td>
<td></td>
</tr>
</tbody>
</table>

------------------------- Equipment & Facilities -------------------------
Importance of components:

<table>
<thead>
<tr>
<th></th>
<th>Comp.1</th>
<th>Comp.2</th>
<th>Comp.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std Dev</td>
<td>2.4245777</td>
<td>1.1894263</td>
<td>0.83029973</td>
</tr>
<tr>
<td>Prop Var</td>
<td>0.7364137</td>
<td>0.1772249</td>
<td>0.08636136</td>
</tr>
<tr>
<td>Cum Prop</td>
<td>0.7364137</td>
<td>0.9136386</td>
<td>1.0000000</td>
</tr>
</tbody>
</table>

Use PC1 & PC2
Loadings:

Comp.1  Comp.2  Comp.3
[1,] -0.783 -0.539  0.310
[2,] -0.500  0.251 -0.829
[3,] -0.369  0.804  0.466

Comp.1  Comp.2  Comp.3
SS loadings 1.000 1.000 1.000
Proportion Var 0.333 0.333 0.333
Cumulative Var 0.333 0.667 1.000

------------------- Information Exchange between Provider and Patient -------------------
Importance of components:

Comp.1  Comp.2  Comp.3
Standard deviation 2.0603804 0.9624602 0.7996523
Proportion of Variance 0.7305473 0.1594113 0.1100414
Cumulative Proportion 0.7305473 0.8899586 1.0000000
Use PC1 & PC2

Loadings:

Comp.1  Comp.2  Comp.3
[1,] -0.458 -0.519  0.722
[2,] -0.584 -0.436 -0.685
[3,] -0.670  0.735  0.104

Comp.1  Comp.2  Comp.3
SS loadings 1.000 1.000 1.000
Proportion Var 0.333 0.333 0.333
Cumulative Var 0.333 0.667 1.000

------------------- Interactions between Staff & Patients -------------------
Importance of components:

Comp.1  Comp.2  Comp.3
Standard deviation 2.611568 0.9030421 0.78255110
Proportion of Variance 0.826886 0.09886875 0.07424521
Cumulative Proportion 0.826886 0.92575479 1.0000000
Use PC1 only

Loadings PcaINT:

Comp.1  Comp.2  Comp.3
[1,] -0.576  0.816
[2,] -0.576 -0.446 -0.685
[3,] -0.579 -0.368  0.727

Comp.1  Comp.2  Comp.3
SS loadings 1.000 1.000 1.000
Proportion Var  0.333  0.333  0.333
Cumulative Var  0.333  0.667  1.000
APPENDIX E: FINAL REGRESSION MODEL

Call:
lm(formula = survdata$V17 ~ pcaD$scores[, 1] + pcaEF$scores[, 1] + pcaINF$scores[, 1] + pcaINT$scores[, 1])

Residuals:

<table>
<thead>
<tr>
<th>Min</th>
<th>1Q</th>
<th>Median</th>
<th>3Q</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2.28934</td>
<td>-0.79668</td>
<td>-0.03866</td>
<td>0.61525</td>
<td>2.99449</td>
</tr>
</tbody>
</table>

Coefficients:

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Std. Error</th>
<th>T-Value</th>
<th>(P-Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>7.92857</td>
<td>0.11824</td>
<td>67.057 &lt; 2e-16 ***</td>
</tr>
<tr>
<td>pcaD$scores[, 1]</td>
<td>0.10802</td>
<td>0.04702</td>
<td>2.297   0.0242 *</td>
</tr>
<tr>
<td>pcaEF$scores[, 1]</td>
<td>-0.09890</td>
<td>0.05037</td>
<td>-1.964   0.0531 .</td>
</tr>
<tr>
<td>pcaINF$scores[, 1]</td>
<td>-0.24114</td>
<td>0.07230</td>
<td>-3.335  0.0013 **</td>
</tr>
<tr>
<td>pcaINT$scores[, 1]</td>
<td>-0.26580</td>
<td>0.05775</td>
<td>-4.602 1.57e-05 ***</td>
</tr>
</tbody>
</table>

---

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 1.084 on 79 degrees of freedom
Multiple R-squared: 0.5994, Adjusted R-squared: 0.5791
F-statistic: 29.55 on 4 and 79 DF, p-value: 5.01e-15

(VIF) pcaD$scores[, 1] pcaEF$scores[, 1] pcaINF$scores[, 1] pcaINT$scores[, 1]
1.163669 1.066812 1.587422 1.627301

Doctor: pca1D can be thought of as V2+V3+V4

Equipment and Facility: pca1EF can be thought of as V8+V9+V410

Information Exchange: pca1INF can be thought of as V11+V12+V13

Interaction: pca1INT can be thought of as V14+V15+V16

The final PCR model has R^2 of 60%, max VIF = 1.63, and total responses o D, INF, INT are significant at 5%; sum of Equipment & Facilities (EF) responses is marginally significant at 5%
REFERENCES


CURRICULUM VITA

Curtis Boldman

Contact Information:
Email: boldman@unlv.nevada.edu
curtis.boldman@yahoo.com

Education:
M.S. in Hotel Administration, May 2015, University of Nevada, Las Vegas
B.S. in Supply Chain Management, December 1998, Arizona State University

Experience:
Psychological Operations Specialist: September 2014 – current, United States Army Reserve
Corporate Operations Manager: June 2013 – September 2014, Block 16 Hospitality
Infantry Reconnaissance Squad Leader: July 2007 – July 2013, United States Army
Marketing and Promotions Director: August 2005 – May 2007, Tryst Nightclub

Activities:
University Veterans Association: August 2013 – May 2015, University of Nevada, Las Vegas
Disabled American Veterans: May 2013 – May 2015, Las Vegas Chapter

References:
Jesse Waits
jesse.waits@wynnlasvegas.com
(702) 556-7171

Jessica McBeath
mcbeathj@gmail.com
(702) 378-5683

Billy Richardson
billy.richardson@block16lv.com
(702) 830-3228