Title Page

**A Comprehensive Literature Review of a Call Center’s Impact on Quality, Access, and Cost**

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Submitted to the Graduate Faculty of

Health Policy and Management

Graduate School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Health Administration

University of Pittsburgh

2019

Committee Membership Page

UNIVERSITY OF PITTSBURGH

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Abstract

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University of Pittsburgh, 2019

**Abstract**

Proper utilization of a call center system within a healthcare organization has many benefits to the overall health network. A patient’s healthcare journey typically begins with an interaction with a call center agent. This initial interaction has the potential to lay the foundation for a positive patient experience; however, there are numerous strategies that can be implemented within a health network’s call center that will greatly improve quality of services, increase patient access to services, and decrease costs associated with care for the patient and health network. Strategies used to address timeslot inefficiency, information accessibility, patient no-show/cancellation, and agent turnover challenges include offering same-day appointments, reducing appointment lead-times, increasing patient information accessibility, and improving agent retention rates. A culmination of best practices within each of these process improvement strategies can result in public health improvements in quality, access, and costs, as well as national recognition for setting excellent customer service standards.

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Glossary

**Call Center:** An office set up to handle a large volume of telephone calls and providing customer service

**In-house Call Center:** Call center operated from within an organization.

**Outsourced Call Center:** Call center operated from a third-party organization.

**Centralized Call Center:** Call center located at one centralized location.

**Decentralized Call Center:** Multiple call center system with more than one location.

**Nurse Triage Lines:** Feature of a call center comprised of certified nurses to handle calls and provide clinical information over the phone.

**Wait Times:** The amount of time spent waiting for an appointment.

**Same-Day Appointments:** The ability of a health network to schedule a patient’s appointment on the same day they called/requested their appointment.

**Patient No-show:** A patient that did not show up for their appointment.

**Appointment Lead-Time:** The amount of time between the scheduled appointment date and the date the appointment was created in the system.

**Time-To-Third-Next-Available Appointment:** Average length of time in days between the day a patient makes a request for an appointment and the third available appointment.

**Turnover:** The rate at which employees leave a workforce and are replaced.

It is recommended that acknowledgments, nomenclature used, and similar items should be included in the Preface.

# Introduction

 Healthcare network leaders have the responsibility to ensure all functions within their network are operating as effectively and efficiently as possible. Call centers are integral to the success of any medical practice or health network. A patient’s interaction with a call center agent is typically the first point of contact for their healthcare journey and this interaction plays a major role in the patient’s overall experience with the health network. Poor efficiency and effectiveness of a network’s call center can lead to poorly routed patient services, high readmissions rates, low patient satisfaction, decreased patient access to care, and increased costs for both the network and patient. A study shows that efficient healthcare call center models can improve patient service performance, retention, satisfaction, and access. By routing patients to the appropriate providers and services in a timely manner, the quality of care patients receive, as well as the amount of access patients have to services, will improve. Furthermore, improved routing of patients to services has been proven to decrease readmission rates, thus decreasing costs for both the patient and health network. From a provider perspective, call centers are essential for the preparation of appointment schedules. An effective call center operation will boost in-network referrals and maximize physician utilization, decreasing the total amount of wasted physician hours for a network (Damalcheruvu, 2014). Although optimizing a health system’s call center presents several challenges for network leaders, there are numerous strategies that can be applied to aid in managing a call center’s efficiency. Finally, analyzing state-of-the-art call center practices helps display the components needed for an efficient, successful call center.

# Early Studies

 Call centers were first introduced to the healthcare industry in the mid-to-late 1900s. Traditionally, healthcare call centers focused on basic repeatable functions such as appointment scheduling and physician referrals; however, drastic advances in technology and the overall healthcare industry have transformed call center operations from an expense to a feature of a health network that ultimately realizes a return on investment. In the past, healthcare call centers were decentralized, impersonal, and commonly had long hold times. Oftentimes, separate department-specific call centers were used to serve specific needs and callers would frequently be placed on hold and/or transferred to other departments before their concerns were addressed. For instance, in the 1990s, United Healthcare, the nation’s second largest managed care provider, operated 37 individual call centers to service its patients and physicians. Each call center was responsible for specific offices throughout the United States. In the year 2000, however, United Healthcare consolidated its network of call centers into just 5 centers based on region (May, 2000). With this consolidation, United Healthcare provided better consistency and improved customer service because each regional call center could access a much wider range of service options for patients. Not only this, but United Healthcare was able to decrease excess wage expenses by reducing the number of agents needed for call center operation.

 The use of nurses to provide telephone triage service is not new, as physician receptionists and nurses have performed telephone triage and advice services since the telephone was installed. In the mid 1990s, just 58% of health organizations provided some sort of nurse call center services. By 1997, approximately 35,000,000 Americans had access to nurse call centers, compared to just 2,000,000 in 1990 (Pursley-Crotteau, 1998). By the mid 2000s, cloud-based management systems technology allowed provider and patient data to be shared throughout the network on one integrated platform, significantly altering traditional call center processes. A study in 1999 sought to determine the quality of communication between call center agents, patients, and physicians. It was determined that the communication infrastructure did not allow for quick facilitation of information (Ledlow, 1999). With the advancement of communication technology and network-wide cloud-based management systems, common communication issues from earlier years became obsolete. Today, the healthcare industry has shifted to place a major emphasis on the patient’s experience and technological advances have allowed call centers to significantly improve upon the customer service they provide. With access to healthcare customer-relationship management data (HCRM) on a centralized cloud-based system, agents have the ability to personalize patient interactions, access comprehensive caller profiles, and tailor their conversations to the individual patient at a moment’s notice (Evariant, 2018). Modern call centers also frequently hire clinically trained nurses to provide expertise and suggestions on medical concerns over the phone. This level of agent-patient engagement can drive positive customer service, and potentially lead to increased patient satisfaction, loyalty, and retention.

# Call Center Types

 Call centers can be classified based on who owns them, i.e., the healthcare organization or a third-party, professional call center company. Call centers can also be classified based on their structure, whether multiple call centers are dispersed across multiple sites, or if one centralized call center is used for the entire network. There are many pros and cons for each type of call center and it is important to understand the concept, processes, and risks associated with each type.

## In-House Vs. Outsourced Call Centers

 In-house call centers are owned and operated within a healthcare organization, which can serve as beneficial in multiple ways. In-house call centers have the advantage of dealing exclusively with a single healthcare organization, which allows agents to dedicate appropriate attention to every caller, train to become trusted brand ambassadors, and deliver personal touches to the provided customer service. In outsourced call centers, agents may not show any strong loyalty towards the healthcare organization, which can compromise the quality of customer service provided. Another advantage of in-house call centers is that since there is no third-party involvement, the risk of exposing highly protected patient data is mitigated. This is not only relieving for healthcare organization leaders, but it gives patients more confidence interacting with a direct representative of the healthcare organization. Additionally, in-house call centers have more flexibility than outsourced call centers. In-house call centers are under direct control of the healthcare organization itself; therefore changes to business processes can be addressed immediately. It also gives the healthcare organization flexibility to make adjustments to their existing call center process without extra lag time (Rongala, 2015).

 Although in-house call centers may be more reliable, secure, and flexible than outsourced call centers, there are also disadvantages. Because of the expenses associated with in-house call centers, more healthcare organizations are relying on outsourced call centers, which offer an attractive and less costly alternative due to their lack of maintenance. When call centers are in-house, every expense from the call center, from staff to infrastructure, must be covered by the healthcare organization. According to a 2013 Global Call Center Survey by Deloitte Consulting, companies can save up to 50% by outsourcing their call center operations (Deloitte Consulting, 2013). As mentioned earlier, the maintenance required to keep an in-house call center operating is ongoing and extensive. Regular assurance that technology is working properly, call center infrastructure is robust, and staff strength is upheld is a substantial amount of responsibility for organizational leaders to maintain. This allows for healthcare organizations to concentrate more on core activities and less on call center operations. Also, outsourced call centers eliminate a healthcare organization’s need to invest in training agents and when call volume increases, scalability of call center size can easily be adjusted to meet customer service requirements (Rongala, 2015).

## Centralized Vs. Decentralized Call Centers

 Centralized call centers are singular contact centers that are responsible for all call center operations for a company in one location. In healthcare settings, centralized call centers are more common than their decentralized counterparts. The benefits of having one centralized call center for an entire health network are that only one communication platform, one customer relationship management system, and one real estate expense are needed. Also, supervision of call center agents and data collection/analysis is easier to manage at one centralized location compared to managing multiple locations. However, for large organizations that provide services across a vast geographic area, multiple call centers may provide a well-suited solution (Datamark, 2014).

 When adopting a decentralized call center model, there are three main strategies to route various call responsibilities. The first is to allow each site to operate independently, with each site handling specific types of calls exclusively. While one site may be responsible for technical support, another site may be responsible for billing, etc. Another option for decentralized call center models is route specific calls to one site, then utilize other sites during overload conditions or during after hours periods. This method is especially beneficial to healthcare organizations that frequently have large call volumes and also wish to have call centers open overnight or on weekends. The third option for decentralized call centers is to treat all centers as if they were one centralized location, routing each call to the next available representative (Klenke, 2019). Both centralized and decentralized call centers are capable of being either in-house or outsourced, and the best model is contingent on individual healthcare organizational needs.

## Nurse Triage Call Centers

 One call center model that is exclusive to the healthcare industry is the use of nurse triage phone lines. Nurse triage lines are hotlines within a health system’s call center that are staffed with medically qualified nurses who have the clinical knowledge and experience to provide medical insight and directives based on the caller’s symptoms and questions. Benefits can include increased patient access, coordinated care, and cost savings. All patient messages related to clinical advice, medication renewal requests, and test results notifications will be transferred to clinical nurses within the call center that have the medical knowledge and qualifications to answer patients’ questions and direct them to the care they need. Providing patients with access to live representatives to answer medical questions not only improves patient satisfaction, but their services can also incentivize callers to schedule an appointment with a referred physician during the call, rather than make an unnecessary emergency room visit (Raheja, 2015). By having someone available to evaluate whether a patient’s symptoms are serious or not, call center triage nurses can save costs for both health networks and patients, while providing customer service that improves patient satisfaction.

# Impact Outcomes

## Quality

 Implementing a call center strategy impacts many facets of a healthcare organization. Perhaps the most obvious influence call centers strategies have on healthcare organizations is their impact on the overall quality of the customer service agents provide. Enhancements in the quality of customer service provided ultimately trickles down to improved quality of services/health outcomes, patient access to services, and costs for the patient and organization. In a study supported by the Marketing Science Institute (Strother, 2006), researchers evaluated the organizational impacts a newly implemented call center strategy had on an unnamed healthcare delivery system in Central Florida. The study found that corporate strategies focused on customer satisfaction and service quality are more profitable business models compared to strategies that focus on cutting costs. It also found that higher customer service quality increases patient loyalty. Performance indicators from the case showed that the adoption of automated call distribution telecommunication technology improved the quality of their customer service, increased their patients’ overall satisfaction with the health system, and increased the cost-effectiveness of their call center. In this particular case, the average speed of answering calls decreased to 30 seconds and the rate of callers who abandoned their call fell below 5% (Strother, 2006). These metrics are used to show improvements in the quality of customer service provided.

 In a study by TriageLogic (Raheja, 2015), researchers wanted to determine the impact a nurse triage service within Intermountain Health System’s call center would have for patients and their network. After a year of implementation and data collection, it was determined that nurse triage lines in call centers can greatly reduce unnecessary trips to the emergency room. By asking patients what they would do if they did not have access to a nurse triage line, 31% said they would go to the emergency room, 63% said they would have stayed home, and the remaining 6% would have gone to an urgent care center. Comparing these findings to survey results of what a call center nurse would have told patients to do, it was determined that only 30% of the patients who would have gone to the emergency room would have been told to go to the emergency room. This equates to access to nurse triage lines decreasing unnecessary emergency room visits by 70% (Raheja, 2015). Although this an access improvement, fewer unnecessary emergency department visits can translate into significant cost-savings. The results of this study proved that nurse triage lines were effective in improving the quality of Intermountain Health’s patient routing services. Efficient routing of patients can also trickle down to an improvement in the quality of care delivered, a reduction in readmission rates, and as well as improved patient satisfaction.

 In another example of a healthcare organization utilizing its call center services to improve quality, researchers evaluated the impact that redesigning their network’s call center would have on a single urology clinic within the network. Using LEAN methodology to reorganize call center staff based on call volume, design a back-up call coverage system during break times, move offsite call center agents to a centralized location, hire a registered nurse to implement a triage line, and establish new performance standards, efficiency of the call center was enhanced greatly. Using LEAN and 6 Sigma tactics to improve call center performance translated into increased patient satisfaction and better patient care (Tieu, T. et al. 2015).

## Access

 Efficient use of call centers can result in patients gaining increased access to the health services and treatments they need. Call center scheduling strategies arguably play the largest role in increasing patient access to timely care. Integration of information technology software in a call center that allows agents to immediately access valuable patient and provider information reduces the demand for inappropriate medical services while improving access to appropriate services at the right time and place. This allows healthcare organizations to align patient and provider desires and better manage overall patient demand (Burton, 1998).

 Emory Healthcare, a seven-hospital delivery system in the Atlanta region adopted Kyruus scheduling software into their call center operations in an attempt to improve their efficiency of appointment scheduling and meet growing patient demand (Goedert, 2017). By consolidating multiple separate scheduling workflows into a single solution, call center agents’ ability to build caller profiles and match appropriate providers with patients based on their health needs improved while also giving patients the ability to schedule appointments online. With the Kyruus software, agents are given special search capabilities that make it easier to identify appropriate provider matches for patients. With improved scheduling capabilities, Emory Healthcare patients now have the ability to search for providers, view their availability, and book appointments directly into Emory’s scheduling systems online. Not only this, but this software also allows agents to provide patients with better access to physicians best suited for their health needs. This feature speeds up patient access to definitive treatments of care and in turn, improves quality of care while reducing the pain and suffering of the patient.

 Call centers also have the ability to decrease appointment wait times, thereby increasing patient access to care. In a 2017 Merrit Hawkins survey (Merrit Hawkins, 2017), it was determined that physician appointment wait times have increased by 30 percent since 2014. When patients are required to wait days or even weeks for an appointment, patients are often left frustrated and may even decide to forgo seeking care. Allegheny Health Network, a healthcare network based out of Pittsburgh, Pennsylvania, introduced a same-day appointment scheduling strategy into their centralized call center in 2017 (Crowell, 2018). Patients who call the health network’s call center between the hours of 7 a.m. and 11 a.m. are able to schedule a physician appointment for the very same day based on the patient’s most convenient care location and the availability of services. By assessing patient volumes, scheduling trends, and historical data, Allegheny Health Network built an appointment slot within their call center scheduling process designated specifically for patients interested in seeking same-day care. In 2017, more than 150,000 same-day appointments were scheduled within Allegheny Health Network. Of those 150,000 appointments scheduled, an estimated 5 percent were new to the health system (Crowell, 2018). This call center scheduling strategy not only aided in increasing patient volume for the network, but it also provided patients with immediate access to care that expedited their healthcare journey and, in some cases, saved lives.

## Cost

 Effective call center operations are capable of realizing increased revenue streams through reductions in costs, greater provider efficiency, and increased patient volume. Research suggests that corporate strategies focused on customer satisfaction and service quality are more profitable business models compared to strategies that focus on cutting costs. In a study published in 2003 by healthcare information company, Solucient LLC (Strother, 2006), researchers found that patients calling call centers represent a return on investment of at least $3 in downstream revenue for every $1 the hospital spends on the call center. Furthermore, comparing revenue generated from call center callers vs. hospital patients overall, the report states call center callers generate an average of $13,848 in hospital charges within one year after calling, compared to $5,524 for hospital patients overall (Page, 2004). This finding addresses the argument that these callers would have used the hospital services regardless of the call center’s existence and proves that the call center directly affects revenue streams. In the same study, researchers found that callers’ incomes are 25% higher than those of non-callers, and that they are less likely to be on Medicaid (Strother, 2006). This discovery refutes a common misconception that the patients who utilize a health network’s call center aren’t high paying patients. Solucient’s director of marketing, Paul Spencer, also mentions, “The study shows that the call center represents a tremendous opportunity to bring patients into the system. Every time the phone rings, there are dollars at stake” (Page, 2004). Not only does this study dispel the widespread misconception that it is not possible to make money on a call center, but it also proves that call centers are successful marketing tools to bring in new patients.

 As mentioned earlier, implementing a nurse triage line strategy within Intermountain Health System’s call center reduced unnecessary emergency department visits by 70%. By utilizing a nurse triage strategy to route patients to services more appropriately, both health networks and patients save costs on unnecessary emergency department visits (Raheja, 2015). In December 1995, the Physician’s Managed Care Report (Ledlow, 1998) found that a 100,000 patient population that accessed health care via a nurse triage telephone service system could realize cost savings of $5.5 million for pediatric care, $5.4 million in adult care, and $2.7 million in geriatric care by decreasing unnecessary patient visits when compared to systems without nurse triage services. It was found that a self-care program via a telephone based nurse call center saved $4.75 per $1 invested as compared to a $2.40 savings per $1 in a program that did not utilize nurse triage personnel. Also, regarding Allegheny Health Network’s same-day appointment access strategy, physicians are likely to have an increased patient volume, thus maximizing their daily patient capacity (Crowell, 2018). By increasing the amount of patients a physician sees each day, week, etc., health networks can realize increased revenues due to maximizing their physician utilization.

# Challenges Today

 Easy access to healthcare is critical for patients to realize optimal health outcomes (Heath, 2016). Access issues that may cause delays for patients to receive the treatment they need not only can result in irreversible disease progression for the patient, but it can also increase the cost of care for both the patient and the health system. Major challenges call centers currently face today include unavailability of appointments due to timeslot inefficiencies, information inaccessibility, patient no-shows/cancellations, and call center agent turnover rates (Gupta, 2007). In order for all patients to have sufficient access to care, necessary and appropriate scheduling services must be available, convenient, and accessible in a timely manner.

## Timeslot Inefficiencies

 A core challenge for healthcare call centers when filling patient appointment slots often includes knowing the appropriate amount of same-day appointment slots to offer to patients. With the implementation of a same-day appointment scheduling strategy, it is possible for valuable physician hours to be misused due to having too many same-day appointment slots available that go unfilled. Although utilizing same-day appointment slots properly will significantly increase patient access, throughput, and satisfaction, inefficiencies in this strategy will lead to a failure to capitalize on opportunities to maximize physician utilization and revenue (Gupta, 2007). Furthermore, having a high rate of patient no-shows will result in underutilized physician hours, which also leads to failed opportunities to maximize revenue. Implementing policies to regularly analyze call volume, time-to-third-next-available appointments, provider fill-rates, and patient no-shows/cancellations will help call centers better manage physician-staffing and same-day appointment scheduling operations (MGMA, 2017).

## Information Inaccessibility

 Another major difficulty often present in call center structures is a call center agent’s inability to access information that is necessary to proactively engage with patients efficiently and effectively (Gupta, 2007). Patients look for an excellent customer service experience at every stage of their healthcare journey. When call center agents are unable to proactively answer patient questions or access patient information vital to the scenario, patient satisfaction is reduced. Having a centralized platform for consumer and provider data accessible by call center agents will reduce the amount of effort needed by the agents to deliver the thorough, personalized support patients expect (MGMA, 2017). With proper information technology software, call center agents have accessibility to existing patient medical records, caller profiles, past inquiries, call center activities, class and event registrations, campaign inquiries, provider referrals, and appointment scheduling requests. These tools allow agents to deliver highly personalized patient experiences throughout the patient’s call center experience. Patient-specific information can also be used to improve patient allocation and decision-making. Focusing on risk factors such as age, gender, body mass index, and co-morbidities, call center agents can place patients into specific classes based on anticipated urgency and physician capacity (Gupta, 2007). Then, with the use of reservation scheduling models, there is a potential to reduce waiting time while simultaneously increasing patient throughput and provider utilization.

## Patient No-Show/Cancellations

 The MGMA 2016 Practice Operations Report found the patient no-show rate varied slightly among specialties, with most specialties reporting a median of 5% patient no-shows (MGMA, 2017). This can dramatically impact a health system’s financial bottom-line. By taking the average number of patients seen per month, multiplying it by a health system’s no-show rate, then multiplying that number by the health system’s average revenue per appointment, one can quantify the amount of revenue that could have been realized by effectively eliminating no-show rates. Evidence suggests that patients that tend to miss the most appointments are younger, male, of lower socioeconomic status, and have a record of missed appointments. Also, the top three reasons why patients miss appointments were noted to be discomfort experienced during the appointment, patient perception that the health care system disrespects their time and beliefs, and patient misconceptions about the consequence of missed appointments (Gupta, 2007). Implementing a financial penalty to patient no-shows may help a health system recover costs, but can be a very negative and alienating strategy. Furthermore, the previously mentioned MGMA study found that the amount of lead-time for patient appointment scheduling had a large impact on the amount of no-shows and cancellations for a particular practice. It was determined that appointments with a lead-time of less than one week had a 25% no-show or cancellation rate, appointments with a one- to two-week lead-time had a 46% no-show or cancellation rate, and appointments with a lead-time of more than three weeks had a 53% no-show or cancellation rate (MGMA, 2017). It is crucial for call centers to reduce appointment lead-times to meet patient demand. Health systems with consistently long lead-times may be indicative of potential staffing or operational issues.

## Agent Turnover Rates

 A common issue internal to call center operations is their high turnover rates for agents. According to research conducted by the Quality Assurance & Training Connection (Wells, 2019), average annual turnover rates for call center agents in the United States ranges between 30-45%, which is more than double the average for all occupations in the United States. Excessive turnover rates in call centers can be attributable to repetitive work, lack of recognition, little to no career growth opportunities, inflexible working environment, excessive stress, abusive calls, low pay, and low job satisfaction. High rates of turnover in call centers can have multiple negative effects on an organization. Call centers with high rates of turnover also tend to experience a loss in expertise and productivity, a drop in morale among remaining employees, and high costs associated with recruiting, hiring and training of new staff (Tuten, 2004).

#  Strategies

 Call center scheduling strategies arguably play the largest role in increasing patient access to timely care. Other strategies include improving an agent’s ability to provide excellent customer service and improving employee satisfaction to decrease employee turnover. Successful implementation of strategies to improve same-day appointments, reduce appointment lead-times, improve patient information accessibility, and decrease agent turnover rates will improve a call center’s operational efficiency (MGMA, 2017).

##  Same-Day Appointment Efficiency

 A great way to improve call center efficiency is to increase physician availability to see patients through effective use of physician timeslots. Call center agents are only able to schedule patients during open timeslots on physician schedules (MGMA, 2017). Although leaving open slots in provider’s schedules for same-day appointments can be seen as a risk, in that there is a chance they will not be filled, it opens up availability for patients who feel that they cannot wait to be seen by their physician. Implementing a same-day appointment scheduling strategy, however, can decrease a health network’s average lead-time and potentially improve health outcomes for the patient. To optimize a health network’s same-day appointment initiative, it is crucial for call centers to collect data on their number of same-day appointment requests and the amount of their same-day appointment capacity (Huang, Y., & Bach, S., 2016). Rather than reserving a fixed number of same-day appointment slots for different patient types, algorithms that measure same-day appointment patterns can be used by call centers to determine the optimal number of same-day appointments that should be offered per specialty. It is important for call centers to use algorithms that analyze call volume metrics, provider-fill rates, and patient no-show/cancellation rates to determine an optimal same-day appointment strategy (Huang, Y., & Bach, S., 2016). Having methods of collecting call center data, knowledge of how to utilize the data, and physician buy-in are the tools necessary for a health network to adopt a same-day appointment scheduling strategy.

## Reducing Appointment Lead-Times

 The larger the amount of calendar days between when an appointment is scheduled and the actual appointment date, the larger the chance the patient will not show or even cancel their appointment. A Merritt Hawkins survey from 2017 found that patients in metropolitan areas wait on average 24.1 days to schedule a new patient appointment due to unavailability of physician timeslots (Merrit Hawkins, 2017). In the same study, it was found that appointments with lead-times of more than three weeks had over twice the amount of patient no-shows/cancellations than appointments with lead-times of less than one week. A common procedure to decrease a health system’s no-show rate is to confirm the appointment with the patient via phone call or electronic communication about 36 hours prior to the scheduled time as a reminder of their appointment (MGMA, 2017). Furthermore, time-to-third-next-available appointment is one of several performance measures that allow health networks to balance their physician supply and demand. Collecting this data and addressing physician-staffing and operational issues provide call centers with a framework to decrease appointment lead-times and benchmark best practices (MGMA, 2017). Minimizing appointment lead times so that patients have access to more timely care revolves around the call center’s timeslot policies and scheduling practices. To decrease appointment lead-times, health networks should first determine a targeted lead-time for their appointment requests. Once a targeted lead-time goal is set, an algorithm that uses a call center’s number of appointment requests and amount of appointment capacity to measure feasible lead-time adjustments can be used to determine the optimal number, length, and types of appointment slots call centers should offer. Depending on patient mix, one health network may optimize their appointment lead-times by shortening the length of certain types of appointment slots, whereas another health network may benefit most from decreasing the amount of same-day appointment slots offered (Huang, Y. & Bach, S., 2016). Analyzing metrics to find a proper balance between provider supply and patient demand can aid health networks in decreasing appointment lead-times. Shortening the amount of time between scheduling an appointment and the actual appointment can help maximize patient access to services, throughput through the healthcare delivery system, and overall patient satisfaction.

## Patient Information Accessibility

 Holding call center agents accountable to providing high standards of customer service can greatly improve customer service and loyalty. Having a loyal customer base will help provide a positive return on investment for all of the time and money invested in developing and maintaining its customer service (Strother, 2006). Call center with access to robust patient profiles allow agents to personalize each patient’s call center experience at a moment’s notice. Centralized databases within health networks can provide agents with access to patient, consumer, and provider data, as well as past inquiries, provider referrals, and appointment scheduling requests. With a centralized database system, call center agents can have access to existing patient’s electronic health records, and with authorization for a records transfer, agents can have access to new patients’ health records as well. With complete caller profiles on-hand, agents have the tools to see what resources callers have previously interacted with, allowing them to proactively answer any questions and connect patients with other services and opportunities within the health network that could benefit them (Strother, 2006). Adopting a centralized call center tool allows schedulers to see availability in all facilities, making it easier for them to get patients to the right provider in a timely manner. Agents have the ability to look into every physician in the database’s appointment books at the same time during a single call, streamlining the experience for themselves and the patient (Heath, 2017).

## Reducing Agent Turnover

 High rates of turnover within a health network’s call center can be detrimental to costs associated with recruiting, hiring, and training of replacements. Not only this, but turnover can also decrease productivity and morale for remaining call center agents (Heath, 2016). A major concern for call center agents is the repetitiveness and monotony of their work responsibilities. By giving agents administrative tasks such as application processing, faxing, or office paperwork, agents’ daily activities are diversified, which can counteract boredom. Furthermore, lack of career advancement and job support are listed as one of the most cited reasons for leaving a call center (Wells, 2019). Many call center agents are forced into learning their job role while on-the job, which can cause undue stress while fielding calls. By providing training and career development options, agents can see a clearer career path, which can incentivize them to stay longer and grow within the company. If progression within the company is not an option, offering enhanced training programs can allow agents to succeed and feel more secure in their role (Wells, 2019). In a study involving 318 call center agents in an Italian Telecommunication Company (Zito, M., et. al., 2018), it was found that promoting the well being of call center employees is key to enhancing job satisfaction and reducing turnover. The study revealed that emotional stress from negative customer interactions causes disengagement, decreases in productivity, and increases in turnover. To foster a sense of job satisfaction, and ultimately reduce turnover, it is important to make support resources available and offer specific training programs to raise awareness about the consequences of emotional dissonance (Zito, M., et. al., 2018).

# Discussion

## Best Practices

 In today’s complex and demanding healthcare industry, it can be a challenge for call centers to maintain high performance. As patient mixes and customer needs change, industry leading call centers are examining ways to modernize their technology usage and expand their connectivity options. According to research by benchmarking firm, Best Practices, LLC (Biotech Business Week, 2015), top areas of call center technology exploration include voice recognition, text analytics, mobile apps, and live chat services to increase contact options for patients. In 2006, CIGNA became the first national health carrier to be recognized for its call center operation customer satisfaction excellence under the J.D. Power and Associates Certified Call Center Program. It was reported that CIGNA HealthCare’s call centers surpassed the rigorous standards of the certification process, exhibiting a strong commitment to customer satisfaction (Health & Medicine Week, 2006). Their call center representatives scored well above average for their knowledge and courtesy, as well as for the usefulness of information they provided to patients during calls. In 2008, TriWest Healthcare Alliance, a Phoenix, Arizona based healthcare organization, also earned recognition for call center customer satisfaction excellence under the J.D. Power and Associates Certified Call Center Program. TriWest scored in the top 20 percent in all customer service scores, which include evaluation of courtesy, knowledge, concern for the patient, usefulness of the information provided, convenience of operating hours, ease of reaching a representative, and timely resolution (J.D. Power and Associates, 2008). In 2011, Mayo Clinic led process improvement efforts designed to increase their call center service quality and efficiency (Rohleder, T., et. al., 2012). With goals to reduce average answering speed and call abandonment rates without increasing staff levels, quantitative data analysis and operations research tools were used to improve staff scheduling, lead cultural change, collaboration, and other service improvements. Their efforts resulted in a 70% improvement in patient service performance as measured by average answering speed and average abandonment rate. Although call volume increased by 12% during the study, these improvements were achieved without adding additional staff (Rohleder, T., et. al., 2012). These three organizations are prime examples of healthcare companies that utilized best practices to realize successful call center efficiency.

# Conclusion

 There is no doubt that healthcare call centers can dramatically improve a health network’s business operations in several ways. Throughout the 20th century, technological advances have led to substantial improvements in call center operations and best practices. Depending on the size, patient mix, and resources available, various types of call centers should be used to improve quality of services, access to care for patients, and costs for the patient and organization (Huang, Y., & Bach, S., 2016). Perhaps the largest impact call center can have on a healthcare organization is through the quality of customer service provided. Improved quality of customer service can result in higher rates of customer loyalty, reductions in unnecessary emergency department visits, and overall improved patient satisfaction. Effective call center strategies can also increase the amount of access patients have to services. Using software to enhance the patient scheduling process, call centers can balance physician supply and patient demand to maximize physician utilization and patient capacity. Finally, efficient use of call centers can ultimately result in decreased costs for the patient as well as the healthcare organization (Strother, 2006). Strategies to appropriately route patients to services and increase physician utilization will allow healthcare organizations to properly allocate resources while increasing revenues through maximizing physician utilization. Although there are many challenges associated with managing call center operations, efficiency and agent turnover reduction strategies can be utilized to maximize call center effectiveness and efficiency (Gupta, 2014). Proper use of these strategies will likely result in improved quality, increased access, and decreases in costs associated with healthcare.

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