

2020

## Evaluating an Incentive Program to Improve Teamwork and Productivity in the Operating Room

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# Walden University

College of Health Sciences

This is to certify that the doctoral study by

Chris Bejil

has been found to be complete and satisfactory in all respects,  
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Walden University

2020

Abstract

Evaluating an Incentive Program to Improve Teamwork and Productivity in the  
Operating Room

by

Christopher G. Bejil

MS, Walden University, 2014

BS, Hardin-Simmons University, 2007

Project Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Nursing Practice

Walden University

August 2020

## Abstract

The operating room (OR) is a complex system that must run efficiently to remain profitable and of value to its multiple stakeholders who include the patient, surgeon, OR staff member, and hospital administration. The OR at the practice site struggled with teamwork and efficiency in the areas of first-case on-time starts, turnover time, and last-case out times, resulting in a less than favorable impact on the organizational bottom line. The practice-focused question asked if a performance-based incentive bonus program can improve OR efficiency in the department's three major problem areas. Using Gittell's relational coordination theory as a framework, the practice site's leadership group established goals and provided feedback and tools necessary for the OR team to meet productivity benchmarks. The project compared retrospective to prospective productivity performance data before and after the leadership intervention. The use of incentives was successful in improving teamwork and productivity. The OR team reduced turnover times by an average of 20 minutes per turnover, increased on-time first-case start percentages by 25%, and reduced average last-case out times by an average of 2 hours per day. Remarkably, as improved productivity reduced daily hours worked, surgical minutes increased by over 50,000 in a year. The project studied the use of incentives to improve teamwork and collaboration in a novel way. Project limitations included the absence of qualitative comparative data, unreliable retrospective data, and the lack of a true quality improvement framework such as Lean or Six-Sigma methodologies. Through dissemination, OR leaders will gain knowledge to impact social change through improved access to healthcare made possible by greater operational efficiency.

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## Section 1: Nature of the Project

### **Introduction**

Operating rooms (ORs) are one of the most important revenue-driving departments in the healthcare system (Biala & Fitzpatrick, 2018). ORs are complex by nature because they serve a multitude of customers. The patient, the staff, the surgeon, and the bottom line all play an important role in defining and measuring the success of the department based on the results they expect to deliver or receive. OR nurse executives constantly look for ways to increase productivity, reduce cost, improve efficiency, decrease waste, and improve the quality of care delivered to their patients (Biala & Fitzpatrick, 2018). Many would argue that revenue production is the major consideration in efforts to improve efficiency, but there are also other benefits to improved efficiency. Decreasing delays and avoiding last-minute cancellations can reduce frustration for all stakeholders, impacting patients, staff, and customer satisfaction (Sohrakoff et al., 2014). Within this scope of the project, I evaluated how an incentive program affected efficiency and teamwork in a struggling OR to improve community access to critical surgical services provided by the facility. The goal of the incentive program was to increase productivity, boost revenue, and enable patients to have increased access to the OR. Organizations around the country struggling with similar issues can adapt the concepts explored in this project to effect change in their own work environments. Section 1 introduces the problem, background, problem statement, purpose, nature of the project, and its significance.

## **Problem Statement**

Delays and inefficiencies in the OR can wreak havoc on productivity and revenue production. Each OR, no matter its size, has a limited capability to handle the flow of patients requiring surgical procedures. Those limitations come from many different factors including, but not limited to, the number and type of surgeons, the number of rooms and their rating for specific case types, staffing, ability to provide anesthesia coverage, and scheduling capabilities (Biala & Fitzpatrick, 2018). When an OR is running inefficiently, each of these factors is negatively impacted, creating a domino effect on workflow. For example, if a room is not turned over in a timely manner, fewer surgical cases can be completed due to the extended resources being used to run the room later than anticipated. The negative effect of inefficiency is compounded based on the number of cases and rooms working in the suite. A simple 15-minute delay per case could result in millions of dollars in lost revenue and a decreased ability to meet the scheduling needs of the surgeon, hospital, or community (Biala & Fitzpatrick, 2018).

Across the nation, OR nurse leaders rely on a set of commonly accepted standard metrics to gauge OR productivity, including first-case start time, last-case out time, and the turnover time between cases (Devgan, 2017). The OR at the practice site performed well below national standards in each of these areas. First-case on-time starts averaged 62%, which is 20% below goal. The turnover time averaged 38 minutes per case, which is nearly double the goal of 20 minutes per case, and the last case out time average was 1823 hours, compared to a goal of 1700 hours. The practice site set goals for turnover time, first-case on-time starts, and last case out times based on organizational

performance as it compared to national benchmarks in these areas (OR manager, personal communication, June 3, 2019).

The practice site has 13 OR suites, is limited by a staff who can operate 10 ORs to start the day, which decreases to four rooms at 1500 hours, and ultimately goes to call-only cases by 1900 hours (OR manager, personal communication, June 3, 2019). As the only hospital and inpatient surgery center in the county, the OR is responsible for efficiently using its resources to meet the needs of the surgeons and, ultimately, the surgical needs of the community. The inefficiencies became apparent when scheduled cases started running late into the evening, and doctors were struggling to fit cases in the time they had allotted (OR manager, personal communication, June 3, 2019). To further magnify the problem, the economic climate in the surrounding area caused a significant population boom to the area, increasing by over 30% in just two years according to the U.S. Census Bureau in 2020. These conditions combined to create a situation where the success of the facility to provide surgical services hinged on the ability of the OR to use the available time most efficiently.

The incentive program evaluated in this project provided a means to reward increased efficiency with a financial bonus up to 10% of the employee's monthly salary (OR manager, personal communication, June 3, 2019). For each of the three metrics, the staff are paid on a scale for two levels of performance: first by meeting the incentive goal, then at a higher rate for reaching the stretch goal. All full-time employees of the OR including registered nurses, certified surgical technologists, support staff, management, and scheduling personnel are eligible to receive the incentive. The incentive program has

been in place since August 2018, and has delivered seemingly positive results (OR manager, personal communication, June 3, 2019) that were evaluated and quantified in this paper.

### **Purpose**

The purpose of this project was to evaluate an incentive program designed to increase productivity and teamwork in the OR. In a review of literature, the use of incentives in the OR has not been well studied. Martin and Langell (2017) used surgeon-paid incentives to improve on-time start percentage resulting in an overall improvement in start times that produce over \$700,000 in savings for the organization. Kacmar, Davidson, Victor, Bullard, and Melendez (2016) used an at-risk bonus structure to provide bonuses to anesthesiologists, but only when the specific bonus criteria were met. The project resulted in increased productivity in the areas of first-case starts and turnover times (Kacmar et al., 2016). Han et al., (2016) used a modest but effective bonus structure that paid medical residents 400 dollars to identify, solve, and document a problem within their specialty. The incentives paid to medical residents in Hans's study ultimately led to improved on-time starts. Other studies provided incentives with mixed results (Hill & Evers, 2019; Masursky, Dexter, Garver, & Nussmeier, 2009). Even with monetary incentives on the line, the expected results from providing incentives were either not realized or realized to a lesser degree than expected (Hill & Evers, 2019; Masursky et al., 2009). At the time of this project, there was no research found showing the effect of incentive programs on productivity paid directly to the frontline staff member.

By studying the effects of paying a performance-based incentive directly to frontline staff, the project provided meaningful data that can be used to guide financial decisions in the hospital setting. In the current economic, social, and political climate, independent hospitals across the country are struggling to stay open on their own (Meyer, 2019). Revenue production and decisions to spend money are highly scrutinized to give these hospitals the best shot at survival. The findings that come from studying incentives, their cost, and their impact provide real-world data to interested hospitals who can study results without the risk of depleting or wagering their own precious resources (Kacmar, 2016).

The practice-focused question asked if a performance-based incentive bonus program improved OR efficiency in the three major problem areas of on-time first-case starts, turnover times, and last-case out times. Evaluation of the effects of the incentive program provided valuable data to nurse leaders who must make critical decisions about how best to address inefficiencies in the surgical suite. Efficiency gains in the OR are realized when stakeholders come together to form common goals and use consistent strategies and tactics to accomplish them. When key stakeholders are not aligned, goals are not likely to be met. The project evaluated if incentives can help keep teams aligned and better capable of attaining their goals (see Biala & Fitzpatrick, 2018).

### **Nature of the Doctoral Project**

The literature supported an evaluation of a quality improvement or process improvement project, as there are numerous approaches to improving efficiency in the OR. I performed a literature search using the resources made available through the

Walden Library. I searched the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Pro Quest Nursing, Allied Health Source, Medline, and PubMed. The key terms that I used included OR, operating suite, operating theater, ambulatory surgery center, and *surgery center*, combined with Boolean operator and *efficiency, process improvement, incentive program, merit program, bonus, and at-risk salary structure*. The search was limited to peer-reviewed articles written in the past 5 years that took place in a hospital inpatient/outpatient surgery center or an ambulatory surgery center. Editorials were not included in the review. The evidence-based approach of this study used a before-after design to evaluate the effectiveness of the project's incentive program. Preintervention baseline data was the average performance in each metric the month prior to the intervention start date and was collected and analyzed in three measure areas of performance including (a) turnover time, the average time it takes to get one patient out of the OR and another patient in; (b) last-case out, the average end time of the last scheduled case of the day; and (c) on-time starts, a monthly average of the percentage of first cases that started by their scheduled start time. These reports were obtained through the OR management team at the practice site where they are reported daily or monthly. The OR manager collects information daily related to each of the metrics and reports them monthly after calculating the averages. The information delivered to me via secure, password-protected e-mail provided by the practice site. The information contained in the e-mail was de-identified information about the average performance of the practice site in each measured area and did not include any identifying information for any patient or stakeholder. Once baseline data was identified, I studied the effect of the incentive



program for 12 months of performance by comparing post-intervention data that was collected in the same way. Using a simple Excel spreadsheet, each data point was documented and compared to reveal serial changes over time.

A project of this nature and scope has not been well-studied in the nursing professional literature. The incentive program is a program capable of delivering a high return on investment in a relatively short period of time. Completing this project provided valuable resources to nurse leaders to help improve teamwork and communication in the workplace.

### **Significance**

Operational inefficiencies can be very costly to a hospital system, especially smaller hospitals where minor differences in revenue production can have a dramatic impact on organizational profitability. Delays and wasted time can cost the department an average of \$35 per minute per room (Volpin, Khan, & Haddid, 2016). Smaller hospitals must remain highly efficient to have the best chance of remaining productive and valuable to the communities they serve. By rewarding positive performance, efficiency may be improved, revenue production increased, and critical services for the community provided. The incentive program should have provided a means to empower nurses to think outside of the box, creating new opportunities to expand capacity to provide much needed surgical services, thereby boosting revenue production through increased efficiency.

The use of incentives may have a profound effect on all stakeholders in the project. One potential effect of the incentive program is the financial impact to the staff

members who participate in the program. When they perform well, they receive monetary rewards that can be used at their discretion. The less obvious impact, however, is the change that comes as coworkers begin to work as a team (Garbers & Konradt, 2014). Suddenly, broad ideas like improved efficiency and better teamwork are made tangible and achievable and staff are leaving work on time, enjoying their days at work, and spending more quality time with friends and family outside of work (Garbers & Konradt, 2014). Surgeons could also be affected by the incentive as productivity improves in their own schedule. With faster turnovers and more timely case starts, many surgeons may gain the ability to add more cases to their day without jeopardizing the rest of their schedule in the process. When efficiency is consistent, the surgeons can do more with what they have (Perkins et al, 2014).

Increasing costs and decreasing reimbursements in today's healthcare marketplace have made it increasingly difficult for hospitals of any size to succeed financially (Meyer, 2019). If the team performs to the fullest potential, the incentive program has the potential to increase salary costs for an entire department by up to 10%. Saving time by starting on-time and reducing turnover times increases the amount of cases that can be performed while reducing the cost of those cases by minimizing waste. Combined, the increase in revenue and the decrease in cost may have a dramatic effect on profit production.

The last stakeholders who could potentially benefit from the work in the project are the patients themselves. Patients prefer having surgery in their hometown and in a timely manner. Patients who were being asked to wait for weeks for their surgeries can

request to schedule them closer to or on their preferred date. The community benefits from this increased efficiency as the hospital brings more services to the area.

Access to health care is vital in small communities. Using incentive programs to reduce financial pressure on health care systems by increasing productivity and revenue potential may help organizations provide and maintain important health care services (Ubel & Jagsi, 2014). By using cost avoidance strategies described here, hospitals and health systems could use the money saved to expand existing services or create new ones to better serve their communities.

The nurse leaders at the practice site are confronted with the challenge of increasing productivity in a struggling OR. The project demonstrated the potential to impact nursing practice in that it provided real-life data that can be used to make meaningful changes for the good of all stakeholders. The incentive program can be easily adapted to many areas of nursing practice including the emergency room, admitting/throughput and other procedural areas. Although the project does require a capital investment, the concepts are relatively simple and applicable in a broad spectrum of circumstances.

Social change is an inevitable product of the work of the project. The program places value and worth on key stakeholders in a process designed to better serve a community. The incentive rewards the efforts of frontline team members who work hard to ensure that patients are taken care of in a timely, efficient, and safe manner. The bonus creates a mechanism by which the team member feels valued and appreciated, which has the potential to create better patient care (Garbers & Konradt, 2014). The local healthcare

system uses its financial gains to maintain critical operations and, in some cases, even expand the capacity to serve the community (Sohrakoff et al., 2014).

### **Summary**

This project was a study of the effectiveness of an incentive program to improve teamwork and efficiency in an OR. Operational efficiencies are paramount to the success of hospital programs. The program had the potential to provide a multitude of benefits to all stakeholders including more money paid to staff, improved efficiency and teamwork in the OR, increased revenue production, and possibly allowing for more access to critical surgical therapeutics to better serve the community. Studying pre- and postintervention data determined the benefits of an incentive program in the OR, including the prospective impact on nursing practice and social change. In the next section I explore the concepts, models, and theories used in the project, and describe the project's relevance to nursing practice, local background and context, and my role as the DNP student.

## Section 2: Background and Context

In the project I evaluated how an incentive program affected efficiency and teamwork in a struggling OR to improve community access to critical surgical services provided by the facility. The goal of the incentive program was to increase productivity, boost revenue and enable increased access to surgical services in the OR to the patients the organization serves. Section 2 will explore the concepts, models, and theories used in the project, and will describe the project's relevance to nursing practice, local background and context, and the role of the DNP student.

### **Concepts, Models, and Theories**

The main concept for this quality improvement project was the use of an incentive program to improve teamwork and efficiency in an OR. Gittel's (2013) relational coordination theory posits that providing shared goals, knowledge, and mutual respect among coworkers creates a relational coordination that improves outcomes for stakeholders in a process (Laflamme, 2017). Gittel's (2013) relational coordination theory has been shown to foster a positive work environment by providing an easy path to greater alignment with others by improving information processing with better communication. In addition, use of the theory improves positive connections using the same high-quality communication, the development of mutual respect, and the sharing of goals and knowledge amongst the stakeholders. Finally, when used, the theory provides an environment for fostering resilience by increasing the ability of individuals to cope with stress and burnout (Gittel, 2015).

The practice project was supported by Gittell's (2013) relational coordination framework to help with understanding how improved outcomes are achieved by increasing participation and teamwork in a group or process (Laflamme, 2017). The aim for incentive program was to improve communication and teamwork by creating shared goals and knowledge in the group. The incentive offered for meeting benchmarks in three specific areas. The monetary incentive shifts the focus of individual group members and intensifies it towards the pursuit of a new and specific shared vision. The focused intensity created in the group by aligning goals provides a pathway for improved communication and collaboration to accomplish the community goals, creating an ideal platform for generating mutual respect amongst participants and an attitude of helpfulness and mindfulness. Accomplishing goals using Gittell's (2013) framework provides an array of benefits, including improved quality, efficiency, employee satisfaction, and customer satisfaction (Laflamme, 2017). According to the framework, once mutual goals are set and effective work begins to accomplish those goals, the team will enjoy a work environment with less stress where employees are more likely to stay engaged and are less likely to separate from the team (Gittell, 2015).

### **Local Background and Context**

This DNP project was designed to evaluate an existing process improvement that was implemented in an OR department comprised of 13 OR rooms staffed by approximately 55 staff members, of which 33% are registered nurses. The remainder of the staff are considered ancillary, which includes housekeeping, anesthesia technicians, and certified surgical technologists. The department's multi-disciplinary nature presents

an opportunity for chaos. Each discipline works independently, potentially creating an inharmonious team environment where efficiency suffers. Productivity indicators in the OR at the practice site have been stagnant for years, creating a need for improving productivity in the department. First-case on-time start percentages for the OR were less than desirable for all stakeholders. Of all the first-case starts measured in the data, only 62% were considered to have started on time (OR manager, personal communication, June 3, 2020). Almost half of all first-case starts were incurring delays OR manager, personal communication, June 3, 2019), which cost the department around \$35 per minute per room in potential lost revenue (Volpin et al., 2016). In addition, the time it takes to turnover a room between cases was approximately 38 minutes, 18 minutes above the goal time (OR manager, personal communication, June 2, 2019). Because surgeons tend to spend more time outside of the room between cases due to set-up, tear-down, and positioning and prepping times, the time wasted here has an acute effect on physician satisfaction (Devgan, 2017). Finally, the last case out time average was around 1823 hours, compared to a goal of 1700 hours (OR Manager, personal communication, June 3, 2019). The last case out time measures the case-out time for the last scheduled case of the day. The scheduling team at the practice site tries to schedule cases so that the last case should be scheduled to be completed prior to 1600 hours (OR manager., personal communication, June 3, 2019). The scheduling practice allows the evening crew to complete add-on and emergency cases in the evening and ensures the OR closes on time. When scheduled cases run nearly two and a half hours behind schedule, emergency cases

are delayed, causing extended hours, overtime, and many other costly issues (Cima et al., 2011).

The site implemented the new QI initiative that consisted of bonus reimbursements when the staff in the OR met the key outcome metrics (OR manager, personal communication, June 3, 2019). The QI initiative consisted of a productivity-based incentive bonus program that provides a monthly payout to employees based on their performance in meeting the three major categories of first-case on-time starts, turnover times, and last case out times (OR Manager, personal communication, June 3, 2019). While the QI initiative has been implemented in the OR, it has never been formally evaluated (OR Manager, personal communication, June 3, 2019). Therefore, the purpose of this project was to evaluate the existing QI initiative to determine its effectiveness and the practicality of continuing the initiative.

### **Role of the Doctor of Nursing Practice Student**

Up to this point in the DNP coursework, I have gained knowledge about evidence-based projects and their usefulness and applicability to the nursing profession. Exploring the latest research relevant to a practice area has, in my experience, been a successful way to improve outcomes in the clinical care setting. My role in the project was that of an analyst. The physical work of the project including the collection of metrics and providing the incentive payouts had already occurred, and I analyzed the project work that had been completed to date to assess whether a performance-based incentive bonus program improved OR efficiency in the three major problem areas of on-time first-case starts, turnover times, and last-case out times.



I serve as the Director of Perioperative Services at the practice site and have responsibility for the OR, same-day surgery, preadmission testing, postanesthesia care unit, preanesthesia care unit, endoscopy, and the Weigh to Success Program. The program evaluated by this project was carried out by the leadership team in the OR. As an executive nurse leader in this division, I am responsible for ensuring the success of each of the departments. The leadership team proposed the use of an incentive paid to frontline staff for achieving group goals in three areas of first-case on-time starts, turnover time, and last-case out times. The first incentive in this program was paid in August 2018. Based on the historical data provided to me, I first evaluated the preintervention data to establish baseline data for the DNP project. I then evaluated the postintervention data to determine the impact the intervention had in increasing teamwork and productivity in the OR. I then compiled the information collected during the evaluation process, analyzed it, and disseminated it to the local leadership team and eventually beyond to further develop the nursing profession.

The incentive program was started in hopes of rescuing a struggling OR by improving teamwork and increasing productivity with the aim of better accomplishing stakeholder expectations. The goal areas were set based on nationally recognized areas of productivity measurement. The targets themselves were set by the leadership team based on industry comparison data while keeping them realistically achievable for the practice site's OR team. All data collection was performed and validated by the OR management team before submission to me for review related to the project.

During the project, I did not participate directly in the program and did not receive any monetary incentive at any point during the incentive program or during the project proposal phase. The project was designed to avoid bias in the pre-, intra-, and postintervention phases by keeping all measurements objective and fair. Each of the measured areas were simple calculations with no room for interpretation. The performance in each area was simply what it was, and the target was either met or it was not. Because of this objectivity, I had no biases to report regarding the incentive project.

### **Summary**

Inefficiencies and lack of teamwork can severely compromise the productivity of an OR, creating multiple problems for all stakeholders. For the DNP project I evaluated whether an incentive program was successful in improving teamwork and productivity in an OR. Gittel's (2013) relational coordination framework guided the project as it posits that when a team comes together to accomplish goals, all stakeholders can benefit. The incentive project is relevant to nursing practice because it can help fill a gap in nursing practice related to the use of incentives to improve teamwork and collaboration. Before this project, very little data was available in this area. The project took place at a small OR where I evaluated the effectiveness of an incentive program put into place over a year ago. In Section 3 I discuss in greater detail the practice-focused question, sources of evidence, analysis and synthesis methods, and end with a summary of the project.

## Section 3: Collection and Analysis of Evidence

### **Introduction**

The project evaluated the effectiveness of an incentive program in increasing productivity and teamwork to create positive outcomes for all stakeholders in a struggling OR. By boosting teamwork and productivity, the incentive program was intended to improve potential for revenue production, increase services provided by the department and hospital, and create a positive working environment for all who enter the OR. In Section 3 I review the practice-focused question, sources of evidence, methods for analysis and synthesis of data, and summarize the project work.

### **Practice-Focused Question**

Depending on the population that they serve, ORs around the country have different purposes. Some are purely outpatient facilities that concentrate on performing procedures where patients return home the same day. Other facilities have a stronger focus on inpatient procedures and are typically found inside of hospitals or medical centers and treat mostly non-elective cases and those cases that include an extended hospital stay. The practice site for this project, located in the Southern United States, serves both types of surgical populations, inpatient and outpatient. The hospital serves its small community by providing surgical services for every type of procedure except for the treatment of severe burns, pelvic fractures, and transplant operations (OR manager, personal communication, June 3, 2019).

When it comes to the measurement of productivity in the OR, there are several possible measurements that can be used including off-hour surgery, same-day

cancellation rate, first-case start-time accuracy, OR use, percentage of unplanned closures, case duration accuracy, turnover time, and excess staffing costs (Rothstein, 2018). In this project, productivity was measured with three metrics of turnover time, first-case on-time start percentage, and last case out time. Turnover time is defined as the average time it takes for one patient to leave the OR and the next patient scheduled in that room to enter it (Biala & Fitzpatrick, 2017). First-case on-time starts is an average percentage of first cases of the day that start on or before the time that they are scheduled. The last case out time is an average of the time in which the last scheduled case of the day leaves the OR. The average of the last case out time indicates how accurate scheduling practices are in the OR (Rothstein, 2018).

ORs that struggle with teamwork and productivity run the risk of creating shortcomings when attempting to meet the expectations of their stakeholders (Biala & Fitzpatrick, 2017). When these expectations are not met, it is possible to lose surgeon customers, ultimately compromising the sustainability of the department and eventually the hospital itself (Biala & Fitzpatrick, 2017). Creating a program to boost teamwork and productivity can help mitigate shortfalls and provide opportunities for growth and development in the OR. The practice-focused question was:

PFQ: Does a performance-based incentive bonus program improve OR efficiency in the three major problem areas of on-time first-case starts, turnover times, and last-case out times?

## Sources of Evidence

To explore current research regarding the use of incentives in the OR, the I used Walden University databases to perform a literature review on the topic. The databases that I searched included CINAHL, ProQuest Nursing & Allied Health Journals, Medline, Ovid Nursing Journals, and the Cochrane Database of Systematic Reviews. The key terms that I searched were *operating room*, *operating suite*, *operating theater*, *ambulatory surgery center*, and *surgery center*, combined with Boolean operator AND *efficiency*, *process improvement*, *incentive program*, *merit program*, *bonus*, and *at-risk salary structure*. The search was limited to peer-reviewed articles written in the past 5 years that took place in a hospital inpatient/outpatient surgery center or in ambulatory surgery centers. Editorials were not included in the review. The search returned 107 articles that were related to the topic, but none of them completely matched the method of this program, which pays frontline staff for performance in these areas. I explored 13 articles based on relevant content. The following paragraphs will summarize the findings of the literature search.

## Review of Findings

### Insults on Productivity

As a top producer of revenue for most organizations, the productivity in the OR is highly scrutinized by all stakeholders. Many of the most common insults on productivity were captured in the literature review. First, a performance-improvement study showed that surgery scheduling issues can be very common and are typically caused by a lack of consistency, unequal block utilization, scattered or disorganized cases, or just a general

lack of organization (Xiang & Li, 2015). Scheduling accuracy is a measurement of how effectively the management and scheduling teams can work together with their customers to forecast activity in the OR and is easily influenced by staff performance (Rothstein & Raval, 2019). When scheduling accuracy is low, all stakeholders are negatively impacted with longer wait times, lower efficiency levels, lower potential revenue, and an increased capacity for customers to be displeased (Nensi et al., 2019).

A second insult on productivity is measured by a team's ability to start the first case of the day on time. On-time starts can be affected by multiple factors as well. Several studies found that physician tardiness was the biggest barrier to starting cases on time (Cima et al., 2018; Coffey, et al., 2018; Deldar et al., 2017; Tagge et al., 2018). Regardless of how well a team performs, surgery cannot occur without the surgeon who is performing it. The two main issues affecting surgeon timeliness are unanticipated issues related to patient care and the surgeon's capacity to plan and regulate their own schedule. Competing priorities often reveal themselves in the OR because the nature of surgical work is designed to stay on schedule to respect the schedule of all stakeholders, including the surgeon who is late (Higgins et al., 2013). Accordingly, Nensi et al. (2019) found that an OR team's capacity for efficiency also has a great impact on on-time starts. The study's authors asserted that teams can be affected by several factors including lack of clinician competency related to new or inexperienced staff, time issues created by inefficient workflows or processes, problems created by scheduling and management teams as described above, and even stakeholder apathy that creates a work environment that is not conducive to high-efficiency workflows.

The third insult to productivity found in the literature review was an overall lack of teamwork in the OR. Some articles found that lack of teamwork came from confusing preoperative processes (Warner et al., 2019; van Veen-Berkx et al., 2015). There are certain criteria that must be met by law when taking a surgical patient to the OR. In order to ensure that a doctor has seen the patient and that the patient does indeed meet criteria for the procedure, the complete history and physical is required along with a signed consent form indicating the patient understands the procedure they are about to undergo. While the process seems simple enough, the great number of stakeholders including, the surgical team, surgeon, residents, hospital staff, and administration, and others can make it quite a complicated task to ensure these things are completed in a satisfactory manner. Other studies attributed lack of teamwork to abrasive work environments where staff are constantly pushed beyond the limits causing them to respond with behaviors that negatively affect efficiency, worsen the work environment, and lead to customer dissatisfaction (Dyas et al., 2018; Heslin et al., 2008; Volpin et al., 2019). Disruptive behavior by surgical teams in the clinical setting can extend to outside departments relied on by the OR to accomplish goals.

Materials management and sterile processing departments can also have a dramatic effect on productivity in the OR (Dyas et al., 2018). When cases are not planned appropriately or the OR and sterile processing department are not communicating effectively, it can become increasingly difficult to have the right tools in the right place at the right time. Coordination between the OR and the departments that support them with instruments and supplies is paramount to efficient success (Dyas et al., 2018).

## **The Use of Incentives**

Incentive programs have been used broadly to achieve goals in the marketplace. In this project, the focus was maintained on incentives that have been used in the healthcare setting. Seitovirta et al., (2015), found that the use of incentives or rewards can positively influence the nurse's well-being at work and solidify their commitment and attraction to the medical field. There is, however, older data that suggests the use of financial incentives alone is not enough to make meaningful change, and that the nurse or employee's needs must be considered as the top priority when considering what reward should be used as an incentive (Ratto et al., 2002). In a quantitative review of incentives in general, Garbers and Konradt (2014) found that incentives of all types will commonly result in the creation of positive outcomes. The literature search did not return any articles that included the use of productivity incentives for surgeons.

## **Six-Sigma and Lean Methodologies**

In the literature review, a common theme amongst those attempting to improve productivity in the OR was the use of Six-Sigma Lean (SSL) methodologies to reduce waste in their departments. There were mixed results reported in the literature, but they were mostly positive. Cima et al. (2011) used SSL to improve operating efficiency in several areas including volume variation, the preoperative process, reduction of nonoperative time, elimination of redundant information, and the promotion of employee engagement. Coffey et al. (2018) improved on-time starts with SSL by addressing several barriers to the preoperative process including multidisciplinary group communication, variability in OR case types, case cancellations, and overall operational dysfunctions.



Dyas (2018) reviewed the instrument reprocessing procedure, eliminated waste and redundancy, and provided new sets and a system that made set up and decontamination much easier for all stakeholders. Tagge et al. (2017) used SSL to review surgical patient flow processes in a large academic children's hospital. The project team met with stakeholders to identify what they considered to be bottlenecks in the perioperative process, created plans to address those issues, and ultimately observed improvements in the areas of turnover time and turnaround time, which the project team defined as the interval between surgical dressing application and subsequent surgical incision. Nensi et al. (2019) also used SSL methodology to create an ideal state process map where they identified areas of waste and eliminated them to improve surgical times and case cancellation rates. Through a similar process, Warner et al. (2019) described how SSL was utilized to look at resident workflows, as they were primarily responsible for booking, performing, and starting procedures on time. The project team collaborated to reduce waste from their rounding workflow and improved on-time starts from 39% to 86%.

### **Participants**

The project used a before-after design to compare retrospective data before implementation of the incentive program on productivity to productivity after implementation at a small community hospital in West Texas. The project focused only on quantitative data related to the efficiency of the department. Deidentified aggregate data for three outcome metrics of turnover time, first-case on-time start percentage, and

last case out time were provided by the site OR administration and will include baseline and monthly data reports one year after the QI initiative began.

Operating efficiency statistics can be difficult to categorize as standard simply because ORs can be drastically different from each other in the way they analyze or calculate the information used in the statistics. The three metrics used in this project are commonly accepted as appropriate and meaningful measurements of OR efficiency and were selected based on their ability to assess performance in each of the areas found to be contributing to reduce efficiency (Devgan, 2017). First-case on-time starts measures the ability of a team to cooperate with one another and with all stakeholders to start cases on-time. Starting cases on-time has a huge impact on the day's efficiency (Coffey et al., 2018). Accordingly, turnover time effectively measures how well a team can keep that momentum throughout the day and reduce the amount of time it takes to remove one patient out of the OR, clean it, set it up, and bring the next patient into the same OR for their procedure. Slow turnovers negatively impact all stakeholders creating longer wait times and the potential for longer days (Perkins et al., 2014). Lastly, the last case out metric captures the average time the last scheduled case of the day leaves the OR. The measure is important because it allows the team to gauge scheduling accuracy, which involves many stakeholders collaborating in a complex scheduling routine (Xiang & Li, 2015).

### **Procedures**

After the authorization of the Walden Institutional Review Board (IRB) was obtained, the OR manager in charge of performance improvement and scheduling

provided 12 months' worth of retrospective deidentified data using a secure, encrypted email system managed by the practice site information security team. The computers used in this project are password-protected. If at any time the security of the information is compromised, the project site can remotely log into the computer and email systems and wipe the drives.

The OR manager committed to being available to answer questions about the data as they arose. Retrospective data collected from the OR manager was used to create a baseline performance level and assess each of the three target areas of turnover time, first-case on-time start percentage, and last case out time for performance improvement. The performance data for the month prior to the start of the intervention served as the baseline data for the project. Each of the three aspects of the project had targets set based on the department leadership's guidance using benchmarking data from local and national sources. A target goal represented competitive market performance, a difficult but achievable goal for the group based on baseline performance data and the benchmarking data. A second, more demanding goal, was identified as the stretch goal. The stretch goal represented top industry performance and was harder to achieve.

Prospective data was collected in the three target areas of turnover time, first-case on-time start percentage, and last case out time 12 months following the initiation of the OR incentive program. The data was collected using the same methods and by the same OR manager. The data was delivered via secure, encrypted email as done with the baseline data. The prospective data was compared to the baseline data and then month-to-

month as the project data grew over time with the delivery of more information from the OR manager.

### **Protections**

Approval of the doctoral project was obtained from the Walden IRB. The OR manager oversaw the exchange of institutional data between the project site and me. Since there were no human subjects, no additional action was necessary to protect the identity of participants. There was no exchange of health information during this project, and all efficiency data was kept in a locked file cabinet in a folder labeled DNP project. The identity of the project site remained confidential in all publications.

### **Analysis and Synthesis**

To evaluate the effectiveness of the use of incentive to improve productivity in the department, retrospective data in three key outcome measures of turnover time, first-case on-time start percentage, and last case out time was compared to prospective data month to month for up to one year after implementation of the incentive program. The comparison of the two data sets would determine if productivity and efficiency were impacted using incentives in the OR. Revenue-producing quality-improvement models in the OR have substantial and sustainable effects that could apply to other specialties within the healthcare system (Cima et al., 2011). The DNP Quality Improvement Evaluation Manual will be used to complete this evaluation project.

### **Summary**

To better understand the practice problem, a literature review of peer-reviewed scholarly sources was used to gather and study available data related to the use of

performance-based incentive programs to improve productivity and teamwork in the OR. Several overriding themes were revealed in the literature review including descriptions of insights on productivity, the different studied uses of incentives, and the use of six-sigma methodologies to promote positive change in productivity. The practice-focused question was aligned with the approach as I studied the use of incentives as a tool to increase productivity and teamwork. After IRB approval was attained, the OR manager and leadership team committed to providing retrospective and prospective data for comparison in the project. The practice question and approach addressed the problem statement by comparing results in three areas including, average turnover time, average last case out, and average percentage of on-time first-case starts. Results were compared to benchmark's set by the department's leadership team based on regional and national standards.

## Section 4: Findings and Recommendations

### **Introduction**

In the OR, multiple stakeholder expectations and varying levels of stakeholder engagement contribute to the difficulty of being successful as a nursing leader in the perioperative area. Every day, new demands present themselves that require the perioperative leader to respond with greater efficiency to meet the needs of each stakeholder. At the practice site, demands on the OR, unruly physicians and staff, and an overall sense of apathy led way to a very dysfunctional and inefficient operation. To improve efficiency, the leadership team gathered to discuss various options on what could be done to create an environment that would promote teamwork in order to increase efficiency. Ultimately the team decided to offer a performance incentive-based program on the metrics of on-time first-case starts, OR turnover time, and average last case out time. Using Gittel's (2013) relational coordination theory as a basis, the project was designed to answer the practice-focused question that asked if a performance-based incentive bonus program improved OR efficiency in the three major problem areas of on-time first-case starts, turnover times, and last-case out times. A literature search returned no exact matches for studies where incentives were offered directly to frontline employees for performance, but it did provide a basis for contextual research in the areas of improving productivity and efficiency and the offering of incentives to promote teamwork. In the next section, I analyze the data provided by the OR leadership team and offer the recommendations of the project. In the following section I also discuss the

strengths and limitations of the project, as well as provide recommendations for future studies.

## **Findings and Implications**

### **Turnover Time**

Turnover time is the first metric discussed in the section. Turnover time is defined as the interval of time between when one patient leaves the OR to the time when the next patient on the schedule arrives in the room, referred to in the perioperative world as “wheels out to wheels in.” The practice site studied industry standards for turnover time and decided that with their case mix, an appropriate goal for the department in this metric would be 22 minutes per turnover. The leadership team, including the chief medical officer and chief of surgery, agreed the 22 minute goal was a fair and achievable one based on the fact that there is great variability in the time it takes to turnover rooms for quick, outpatient procedures, and bigger inpatient joint and open procedures. Once the goal was set, the team also created a secondary stretch goal of 18 minutes or less for turnover time. Using percentages of base monthly salary, the incentives offered were 2.5% for achieving the target goal and 3.5% for achieving the stretch goal. I intended to study 12 months of retrospective data for the project, but due to an electronic medical record (EMR) change in June, 2018, the OR management team could only provide reliable data in these three areas for the month of July, 2018. During that month, the OR team averaged 38 minutes per turnover.

When the incentive began to be offered in August, 2018, the OR team responded in dramatic fashion. There was a palpable change in the morale of the department,

including a newly apparent sense of camaraderie amongst the team members. Some of the anecdotal observations by the OR management team included more smiles and encouragement between team members, newfound motivation to help clean rooms by associates who before were unwilling to help, and a new initiative to work together as a team to meet a common goal. The target goal was met quickly and was sustained throughout most of the next 12 months. Gittell's (2013) research was confirmed in that when the staff was presented with a common goal and given the tools and training to achieve the goal, they succeeded. With daily, weekly, and monthly updates provided to staff, they remained motivated to achieving the goal. The following table shows baseline data as a compared to 12 months of prospective data.

Table 1

*Average Turnover Time (in Minutes)*

|        | 8/18 | 9/18 | 10/18 | 11/18 | 12/18 | 1/19 |
|--------|------|------|-------|-------|-------|------|
| Avg TT | 20   | 16   | 18    | 19    | 17    | 17   |
|        | 2/19 | 3/19 | 4/19  | 5/19  | 6/19  | 7/19 |
| Avg TT | 17   | 18   | 17    | 19    | 19    | 18   |

Turnover times were improved by an average of 17.9 minutes per turnover (Table 1). The OR at the practice site averages 20 turnovers per day, translating to an average of 400 minutes trimmed from waste to provide stakeholders with more usable surgical time in their day. The practice site's financial team provided historical data that revealed



revenue per minute for fiscal year 2018 was \$102 per OR minute. The site reduced waste and protected revenue in the amount of \$40,800 per day, or \$10,608,000 annually. The savings is considered a soft savings because it is impossible to ascertain if the changes in practice to improve productivity directly impacted case volumes, thereby increasing revenue. It is assumed that regardless of productivity, the same amount of cases would have been performed on any given day.

### **Last-Case Out Time**

The second metrics discussed in this section is average last-case out time. Last-case out time is defined as the monthly average of when the last scheduled case of the day leaves the OR. The last-case time out average provides insight into scheduling accuracy and overall efficiency as it gauges a particular day's efficiency by showing when the day ended, but it also provides a gauge to know how consistently a team is meeting scheduling goals over time. Based on industry standards, the OR leadership team at the practice site set the target goal at 1800 hours, with a stretch goal of 1700 hours. For reaching the target goal, the incentive would pay 1.75% of monthly base salary, while achieving the stretch goal would earn the employee 2% of the monthly base salary. In July, 2018, the practice site's last scheduled case end times were averaging 1823 hours.

Once the incentive payment program began, performance in this metric did not rapidly improve like the turnover times metric did. Scheduling practices were difficult to impact, and many surgeons took time to adjust to changes that came their way. After about two months, changes to last-case out times that occurred as a result of the incentive payment period began to be revealed (Table 2).

Table 2

*Average Last-Case Out Time*

|           | 8/18 | 9/18 | 10/18 | 11/18 | 12/18 | 1/19 |
|-----------|------|------|-------|-------|-------|------|
| Avg<br>TT | 1821 | 1820 | 1757  | 1735  | 1741  | 1640 |
|           | 2/19 | 3/19 | 4/19  | 5/19  | 6/19  | 7/19 |
| Avg<br>TT | 1649 | 1703 | 1626  | 1610  | 1631  | 1617 |

In the last 4 months of prospective data, the average last-case out time averaged at 1621 hours. On a consistent basis, the improved productivity and teamwork effectively reduced OR time by 2 hours per day. Cost savings are difficult to analyze in this metric because even though overtime is reduced for the scheduled cases that end earlier, there are still urgent and emergent cases that extend beyond this last-case out time average. Better performance in the last-case metric translated to better utilization of staff's, anesthesia providers', and the surgeons' time. Anecdotally, staff were able to complete assignments in a timelier manner, reducing the need for premium pay overtime and on-call work. The practice site did experience a reduction in overtime of approximately 10% in the project timeframe, which resulted in a savings of \$205,800 over 12 months.

**On-Time First-Case Starts**

The last metric reviewed in this project, on-time first-case starts, proved to be the metric that took the longest time to impact. On-time first-case starts is defined as the average percentage of first-start cases that begin on-time each day. For example, if the

OR schedules 10 first start cases and only eight start by the scheduled time, the on-time first-case percentage for that day would be 80%. The on-time first-case percentage is used broadly by OR leaders as an indicator of efficiency and, to some degree, the level of initiative of any given OR team. Highly motivated and efficient OR teams will strive to have their day start on-time and generally have very high first-case on-time percentages. Based on industry standards, the OR leadership team at the practice site set the target goal of 80% and the stretch goal at 90%. The target goal would provide an incentive paid at 2.5% of monthly base salary and the stretch goal would pay the incentive at 3.5% of the monthly base salary.

The start of the incentive payment did not automatically improve this metric to reach target and stretch goals. The payment structure rewarded frontline staff for being more efficient and working as a team; however, the onus of tardiness fell mostly on surgeons. As teamwork and productivity improved, the average start time did improve slightly month over month (Table 3).

Table 3

*Average On-Time First-Case Starts*

|           | 8/18 | 9/18 | 10/18 | 11/18 | 12/18 | 1/19 |
|-----------|------|------|-------|-------|-------|------|
| Avg<br>TT | 62%  | 62%  | 69%   | 69%   | 75%   | 68%  |
|           | 2/19 | 3/19 | 4/19  | 5/19  | 6/19  | 7/19 |
| Avg<br>TT | 75%  | 72%  | 85%   | 92%   | 93%   | 90%  |

Table 3 demonstrates how the incentive affected on-time first-case start times. In the first three reviewed quarters, the efficiency improved by about 10% with the monthly average ranging in the low to mid 70s, increasing from 65%. This change was due to practice changes on the staff's behalf such as arriving to work on time, eating breakfast before the start of the shift, and reporting to and preparing rooms in a timely manner. In March, 2019, the OR leadership team met with surgeon leaders to investigate how they could impact on-time starts. It was at this meeting that it was discovered the surgeons' rules and regulations provided surgeons a 15-minute start time allowance created to allow physicians time to round and visit patients without penalty from the OR Surgical Control Committee. The allowance was accounted for starting in April 2019. As long as surgeons were delayed for patient care, the 15-minute window extended the start time goal and the target and stretch goals were met quickly. Each individual improvement to on-time starts was highly variable. One room may have improved by 2 minutes to get to on-time while another may have improved 35 minutes to start on time. Using an average of 5 minutes saved per room with 10 first-case starts and estimated revenue of \$102 per OR minute, the OR efficiency improvements added or protected a potential revenue of \$5,100 or \$1,326,000 annually.

### **Recommendations**

The project findings demonstrate how the practice site was able to increase productivity and teamwork, resulting in a dramatic improvement in revenue acquisition potential. In the 12 months evaluated during the timeline of the project, there were over 50,000 more minutes of surgery performed as compared to the 12 months before the

incentive program was established. For organizations struggling with productivity, teamwork, and producing revenue in their OR, this project demonstrates quite clearly that an incentive program can be used effectively to increase productivity and teamwork in the OR.

### **Evaluation of Current State**

Operational changes in the OR are often complex and multi-faceted. Before implementing any kind of change, it is important to study the current state of the unit/department (Devgan, 2017). The process should begin with a look at national benchmarks in operational performance and how they compare to current operational statistics. When performing the unit analysis, it is vitally important to be sure metric components match. For example, the national standard for turnover time might be for wheels out to wheels in, while the organizational standard might be from case end to case start (Biala & Fitzpatrick, 2017). Once the comparison between local and national data is completed, work can begin on the change process.

### **Identification of Appropriate Metrics**

When the baseline performance data is formulated, OR leaders must decide what metrics could provide the most benefit to the department. Metrics in and of themselves provide data regarding performance, but it is ultimately up to the leader to evaluate the impact of that data for the organization (Biala & Fitzpatrick, 2018). For example, turnover time could have a significant effect on productivity in a major multi-suite OR that runs 24-hours per day but have little impact on a small OR that only performs 1-3 cases per day. With data and impact information, the OR leader can work together with

all stakeholders including administration, frontline staff, and surgeons, to create a plan to identify and target specific metrics that will have the greatest impact on the desired aspect of quality or productivity in the department (Biala & Fitzpatrick, 2018).

### **Creation of Incentive Program**

As evidenced in the project, an incentive program has the capacity to stimulate change, even in poorly coordinated units. It is important that the incentives provided by the program suitably address the needs of all stakeholders. The reward, money in the case of the current project, must be an amount that is meaningful enough to the frontline staff to work towards. At the same time, it is important to try to harness that reward so that the cost of the program does not exceed possible savings created by the program (Garbers & Konradt, 2017). If more than one metric is used, the same principle for weighing the impact should be used to determine what percentage of the reward should belong to each metric (Garbers & Konradt, 2017). Goals should be set to be achievable but should also stretch the capability of the team to accomplish them. When goals are stepped to be achievable and then stretched to a much higher level of productivity within a certain timeframe, the project is likely to have positive results (Adams et al., 2017).

### **Evaluation of Incentive Program**

After the implementation of the incentive program, it is important to evaluate the effect of the program and deliver the results to the stakeholders in a timely manner. When results are delivered this way, it allows the stakeholders to respond to the data to create meaningful change within the timeframe of the project (Adams, et al, 2017). By setting deadlines and timelines for results and incentives, the project can have a clear start and

end with clear objectives and rewards, thus creating a pathway for increased trust and an increased capacity for creating positive change in the team (Laflamme, 2017).

### **Strengths and Limitations of the Project**

One strength of this project lies in its simplicity. Because the project was not overly complex it was not difficult to understand how the intervention affected teamwork in the OR. The metrics used in the incentive program are easy to understand and were well received by the stakeholders within the OR. Additionally, the metrics are easily adaptable to whatever situation is most critically in need of change. Each OR leader could select appropriate metrics and goals based on the needs of their specific department (Hill & Evers, 2019).

The first limitation is that the project was purely quantitative. Because the project evaluated an intervention that was already in place, it was impossible to retrieve qualitative data on the nature of the unit and the environment of cooperation and teamwork in the department. Had this baseline data been available, a qualitative review of postintervention results might have confirmed the anecdotal data of an improved working environment and better cooperation and teamwork amongst the staff. By adding qualitative data to the original quantitative data set, it is possible, in a broad context, to give more “meaning” to the data. Qualitative data provides the reader/consumer with an easily relatable index to which they might compare their own practice setting or environment (Lester, Cho, & Lochmiller, 2020).

A second limitation of the project came from the lack of a quality improvement framework by which the staff could plan their improvement strategies. A system like Six

Sigma or Lean methodologies could have informed the staff on how to improve and reduce waste quickly and sustainably. The project incentive was introduced to the staff without a quality improvement framework and fortunately the staff responded well enough to earn incentives in every category. Perhaps with the addition of a quality improvement methodology to guide their actions, they could have reached their goals faster and earned more from the incentive program (Cima et al., 2011).

A third limitation was the availability of accurate retrospective data. A baseline was created based on the performance of the month prior to the start of the intervention because an EMR change created discrepancies in the data and it could not be relied on as accurate. With month by month retrospective performance data, I could have compared monthly data to examine differences in case type and volume. The monthly data could be grouped together more specifically to provide results in many different contexts, including seasonal variations in scheduling (Lex, Streit, Partl, Kashofer, & Schmalstieg, 2010).

In the future, a quantitative/qualitative performance improvement project could be designed to consider the monthly data described above to make better comparisons and provide greater detail into how and when the incentive intervention is most successful (Lex et al., 2010). Future quality improvement projects might include different metrics based on the needs of the individual practice site and could possibly include more staff than just the OR (Hill & Evers, 2019). During the work of this project, other contributing departments felt left out as the OR staff exclusively received incentive payments for performance, even though they assisted in the effort to improve efficiency while



receiving no additional compensation (OR manager, Personal Communication, June 3, 2019).

## Section 5: Dissemination Plan

### **Introduction**

As a nurse leader in the perioperative division of nursing, it is imperative to have a good knowledge not only of nursing practice, but also of the financial implications of quality work in the OR. The project focused on the effects of an incentive program to positively influence teamwork and productivity in the OR. It was clear, by the findings, that incentives improve the way teams work together to produce better quality results, including better efficiency and the potential for increased revenue production.

The dramatic results encountered in the project are highly desired by OR leaders across the country. The project findings should be spread throughout the perioperative sector as quickly and broadly as possible. I plan on submitting articles based on this work to *OR Manager Magazine* and the *AORN Journal*. In addition, I will be submitting the project and its findings as a presentation to the OR Manager Conference as well as the AORN Conference. I feel the results are easy to understand and reproduce, making the work a prime candidate for publication.

### **Analysis of Self**

Earning a Doctorate in Nursing Practice has been a dream of mine for quite some time. Each year as I drew closer to my goal, I became more excited at the possibility of graduating. Although life presented many challenges along the way, I persevered to finally reach this level in my education and professional development.

**Practitioner**

As a practitioner, I have come to appreciate the work it takes to turn evidence into practice and practice into evidence. I currently serve as an administrator in the Perioperative Services Division at a local county hospital. Many vendors and company representatives are frequently and consistently seeking my attention so that they might introduce me to what they believe is the latest and greatest technology that could dramatically impact our way forward as a department or organization. Based on Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice from the American Association of Colleges of Nursing (AACN), a fundamental component of a DNP graduate's education is the ability to appraise evidence-based literature, design and implement quality practice change, and disseminate the research findings (AACN, 2006). The skills and qualities I gained as a DNP graduate that were demonstrated through the work of this project will support my decision-making processes to ensure hospital administration use the community's resources in the most efficient ways possible.

**Scholar**

As a nurse scholar, I have a responsibility to the profession of nursing to contribute knowledge to the ever-growing and ever-changing state of the science that currently exists in nursing. As a DNP-prepared nurse, I possess the skills necessary to read and analyze literature based on scientific evidence to create a plan to improve the quality or efficiency of care delivery in my practice area. At the same time, I have also learned how to evaluate local practices, design an effective evaluation model, and disseminate findings into practice (see AACN, 2006). With these skills, I can contribute

my own gained knowledge and influence social change in my community and potentially around the world (see Yallop & McAvoy, 2007). For me, the potential of recreating the results seen in the project carry all the reward for scholarship in this application. Having performed my duty as a scholar in this instance is completely worth the time and effort consumed to finish this project.

### **Project Manager**

As a nurse leader, I have grown to understand that every individual must have their own personal motivation to achieve their own real and authentic goals. The work of this project demonstrated the power of meaningful motivation as I studied how a struggling corps of perioperative professionals became a highly functioning operating system. It has been my ultimate pleasure to study the effects of the incentive program in this regard because it has taught me not only what people are capable of as employees or followers, but also what I and other nursing leaders are able to inspire others to do and accomplish personally by providing goals, means, and rewards to our constituents (LaFlamme, 2017).

As a project manager, I required input and support from one other source, the OR leadership team. I found that it is important as a project manager to communicate needs effectively and provide appropriate and timely feedback, allowing the team to meet the project's needs to a greater extent. Coordinating the team's individual efforts to bring focus to a project is of vital importance for the project manager (Hernandez, Aderton, & Eidem, 2011). Throughout this project, I found myself clarifying requests to get to the desired information. I learned through the work of this project that clear, concise

instruction with return feedback is key to efficient communication (Frick, Muller, & Klasen, 2019).

One of the problems encountered in the project was the inability to retrieve accurate data from a legacy EMR. The historical data was limited for two reasons: it was neither tracked nor accurately retrievable from the legacy EMR system, and secondly, volume and efficiency were impacted by the EMR changeover. In this project there was nothing more that could be done because the intervention had already occurred, but in the future I will assess retrospective data availability in order to make a more consistent comparison (Lex et al., 2010).

The ultimate duty of the project manager is to disseminate project findings (Hernandez et al., 2011). With the guidance and support of mentors and my committee chair, I successfully gained the skills necessary to accurately describe how an inefficient department can be transformed into a highly productive unit through the use of goal-setting, information dissemination, and the use of a bonus structure that uses milestones to provide monetary rewards as an incentive for better performance. To effectively demonstrate the unit's improved performance required a literature review, process assessment and analysis, and dissemination of results (AACN, 2006). With the experience gained through the work as project manager, I can face future issues with confidence, knowing I am capable of organizing and leading a project with purpose, determination, and resolve to find the answers needed for the situation faced.

## Summary

The OR department performance studied by this project was in desperate need of improvement. The department's failures were having a negative impact on the organization's overall bottom line and performance. The team was struggling due to a lack of leadership in the department to guide them towards effective and feasible productivity goals. Using Gittel's (2013) relational coordination theory as a basis for change, the OR leadership team partnered with all stakeholders to create a plan and program that provided great results by increasing surgical minutes by over 50,000 year over year. Improving productivity in the department not only provided an opportunity for increased revenue production, it also changed the way the team members worked together. The work environment became a place where everyone knew their role in reaching team productivity targets. The leadership team provided clear access to identified team productivity goals while providing the necessary tools to achieve them. Posting goals publicly along with consistent follow-up and progress reports helped the team produce better outcomes. Although some elements of the project could have been improved, overall, it successfully demonstrated the effectiveness of the incentive program on productivity. I am thankful to all who participated to make this project possible and look forward to the dissemination phase and to continuous improvement in the OR.

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