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A PROVIDER NEEDS ASSESSMENT FOR A PULMONARY REHABILITATION PROGRAM AT A RURAL COMMUNITY HOSPITAL

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An Abstract of the Scholarly Project by
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Pulmonary rehabilitation is a comprehensive rehabilitation program that utilizes exercises and education in order to assist with the management of chronic obstructive pulmonary disease (COPD) by decreasing COPD exacerbations and increasing patient quality of life. A critical component to proposing a pulmonary rehabilitation program at a rural community hospital involves the support for a program by the potential referring providers. It is theorized that positive thoughts and attitudes towards pulmonary rehabilitation by providers correlates with support and ongoing success of a pulmonary rehabilitation program. A survey of providers associated with Labette Health was conducted to assess such attitudes and thoughts on pulmonary rehabilitation. Results of the survey indicated that providers were generally supportive of pulmonary rehabilitation and that developing a pulmonary rehabilitation program should be considered by Labette Health administrators.

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CHAPTER I

Introduction

When discussing the leading causes of death in the United States, many people initially think about cardiovascular disease, diabetes, or cancer. Many individuals may not consider or give thought to pulmonary disease having a substantial impact on the nation's health as a whole. Chronic obstructive pulmonary disease (COPD) is affecting millions of Americans today and has grasped the attention of medical providers across the nation. COPD is a lung disease "characterized by chronic and recurrent obstruction of airflow in the pulmonary airways" (Norris, 2019, p.935). The two most common conditions that contribute to COPD include chronic bronchitis and emphysema. According to the World Health Organization (n.d.), smoking is the primary cause of COPD. Other risk factors include air pollution, occupational dusts and chemicals, and frequent childhood lower respiratory tract infections.

Chronic obstructive pulmonary disease is preventable and manageable with help from health care professionals. The management of COPD is a taxing clinical issue that affects and is affected by the nursing profession. Throughout this chapter, the description of the clinical issue, the significance of the impact on nursing, specific purpose of this project, theoretical framework used to support the clinical issue, and a logic model will be addressed in support of the development of a pulmonary rehabilitation program.

Description of Clinical Issue

In 2016, chronic obstructive pulmonary disease was ranked the fourth leading cause of death in the United States (Centers for Disease Control and Prevention, 2017). Today, chronic obstructive pulmonary disease ranks sixth in the leading causes of death in the Unites States and COVID-19 is the new holder of the third leading cause of death (Centers for Disease Control and Prevention, 2021). According to the COPD Foundation (2018), 5.9% of American adults had been diagnosed with COPD during 2014 to 2015. The Centers for Disease Control and Prevention (2021) lists numerous complications of COPD on health including activity limitations, decrease in social activities, depression, and increasing emergency room visits and hospital stays. The Australian Institute of Health and Welfare (2020) report those with COPD generally describe their health as poor, were more likely to have psychological distress and pain, along with other chronic diseases.

The financial toll the disease puts on the economy has also been discussed. The COPD Foundation (2018) reported that the estimated increase in economic costs would increase from $32.1 billion in 2010 to $49.0 billion by the year 2020. Zafari et al (2021) noted in their study that "the projected 20-year COPD-attributable direct medical costs were estimated to be $800.90 billion" (p. 1402). Exacerbations of COPD "place a major financial burden upon healthcare systems with recent estimates for COPD inpatient care in the USA totaling US $11.9 billion" (Maddocks et al., 2015, p. 395). With the alarmingly high numbers financially associated with COPD, there comes a heightened awareness of the need of healthcare officials to direct more attention to management of the disease.

Chronic obstructive pulmonary disease is not just a major concern at the national level, but also at the state level. When considering the direct impact that COPD has on our health care, we need to consider how the disease is affecting us closest to home. The State of Kansas is not doing any worse than the national average in terms of how much the citizens of the state are being burdened by the disease. The COPD Foundation (2018) reported that, in Kansas alone, 139,100 individuals have been diagnosed with COPD and 48.2 per 100,000 persons die each year from the disease. The estimated annual cost for treatment is $331million. This information indicates the burden COPD places on Kansas as a whole. What is more alarming and should trigger a response is the increase of COPD incidence in rural areas. Croft et al., (2018) conducted an analysis report of individuals diagnosed with COPD and concluded that prevalence of COPD, hospitalizations, and deaths were seen at higher rates in those individuals living in rural areas than in other areas.

Labette Health is a nationally ranked hospital located in Parsons, Kansas. Being in the heart of Southeast Kansas, Labette Health provides services to a large number of rural area residents. According to the admission statistics provided by the quality department at Labette Health, from January 2018 to October 2019, a total of 687 patients were seen at Labette Health that had a primary diagnosis or previous diagnosis of COPD. Those 687 patients accounted for 5.37% of the total number of patients being treated at the facility during that time. Although this may seem like a small percentage of patients treated with this diagnosis, this group of patients are in one of the top categories of diseases frequently treated at the facility. This highlights a need for attention from the professionals and stakeholders at Labette Health. A pulmonary rehabilitation program could possibly be the

best avenue for change. The advantage for Labette Health, but also a disadvantage to the population in which they serve, is that the three pulmonary rehab facilities in closest proximity to Labette Health are over 30 miles from the facility. This indicates a need for a program that can be delivered to our valued individuals.

Pulmonary rehabilitation is at the forefront of medical research for the management of COPD. Pulmonary rehabilitation utilizes exercise and education to assist with management of COPD and improve quality of life (NIH, n.d.b). A rehabilitation program specifically designed for COPD patients could be a major benefit to this population, and also the economy of the health care system. A growing interest for implementation of a rehabilitation program has been in "the peri- and early post-hospitalization setting, with the aim to counteract the deleterious consequences of a hospital admission for an acute exacerbation of COPD" (Maddocks et al., 2015, p. 396).

Research has proven support for the use of pulmonary rehabilitation programs. In a study conducted by Maddocks et al., (2015), their research concluded that "exercise-based rehabilitation interventions have the potential to not only improve exercise capacity and health-related quality of life, but to reduce healthcare utilization, and in particular, the risk of early hospital readmission" (p. 402). In another research study comparing patients receiving pulmonary rehabilitation in conjunction with standard medical therapy compared to those receiving standard medical therapy alone and no rehabilitation, Jayasheela and Sivabalan (2017) determined that the study group receiving both sets of care showed significant improvement in activity, symptoms, and quality of life overall. More research is available that discusses the major benefits of pulmonary rehabilitation. Although the research is available that proves the benefits of a pulmonary rehabilitation

program and programs are being developed all across the nation, Southeast Kansas is in need of more programs to be established.

Significance to Nursing

On a daily basis, nurses are on the frontlines of health care. They are the individuals providing the direct patient care, spending hours on end with each patient. Nurses are one of the most valuable assets to the doctor-patient relationship. With COPD being one of the largest medical conditions being treated today, nurses care for these individuals very frequently. Nurses can provide great insight to guideline development by offering their experiences with providing care to COPD patients. They can also use their direct access to patients to help communicate with the doctor if they believe the patient would be a good candidate for the pulmonary rehabilitation program. The pulmonary rehabilitation program can also benefit from nursing by utilizing the professions ability to help educate patients and administer program activities.

Specific Purpose

The purpose of this project was to inquire about provider interest in the development of a pulmonary rehabilitation program with the intention of future presentation of a proposal for a pulmonary rehabilitation program at Labette Health, a rural community hospital. Patients seen at any Labette Health facility with the diagnosis of chronic obstructive pulmonary disease will be recommended by a physician overseeing their care in either the primary care or acute care setting. Referral by the physician will be sent to the pulmonary rehab program and a screening process will be completed in order to determine if the patient meets criteria to participate in the program.

The patients that are seen throughout this program will utilize the guidelines set forth by this project as delivered by pulmonary rehabilitation staff.

An important goal for pulmonary rehabilitation program guidelines was to effectively manage chronic obstructive pulmonary disease in patients, not only seen at Labette Health, but also in the surrounding communities that may have to travel to other areas for rehabilitation programs. Provider support for pulmonary rehabilitation is highly necessary prior to program development, and this projects major aim is to assess that support from providers at Labette Health. It is with high hopes that better disease management will directly reflect a decrease in admission and readmission rates of COPD to Labette Health. A reduction in admission and readmission rates will in turn save Labette Health time, resources, and money in the long-term. The major goal of this project was to provide a better quality of life to the COPD patients that utilize or surround Labette Health.

Theoretical Framework

The theoretical framework chosen to help guide this project was Nola Pender's Health Promotion Model. Pepitrin (2016) notes that this model considers the nature of the patient and their pursuit of health through their interaction with their environment. Pender theorized through the health promotion model that health is not simply an absence of disease, but also a positive changing state. Pender makes four major assumptions, but for the purpose of this project, two of them are going to be utilized. The first assumption is that individuals "interact with the environment, progressively transforming the environment as well as being transformed over time" (Pepitrin, 2016, para. 3). Pulmonary rehabilitation helps promote positive change, not only in the patient, but also the way

they interact in their environment. Improving the patients' health, but also assisting them to become more adaptable to their environment can help decrease their chances of COPD exacerbation. The second assumption states that "health professionals, such as nurses, constitute a part of the interpersonal environment, which exerts influence on people through their lifespan" (Pepitrin, 2016, para. 3). The health care team involved in the rehabilitation program, including nurses, physical therapists, respiratory therapists, and providers play a vital role in influencing health promotion in the patients participating in the program. Nurses and various therapists are in charge of assisting patients with activities, monitoring progress, and patient education. Even more importantly, providers are the foundation of a pulmonary rehabilitation program considering they have to manage the care of patients with COPD and provide the referral for a patient to attend pulmonary rehabilitation.

There are thirteen theoretical statements included in the model that can be relatable to goals of the pulmonary rehabilitation program. Pepitrin (2016) notes all thirteen theoretical statements, but six of the most relatable to this project are as follows:

- "Persons commit to engaging in behaviors from which they anticipate deriving personally valued benefits."
- "Perceived competence or self-efficacy to execute a given behavior increases the likelihood of commitment to action and actual performance of the behavior."
- "Positive affect toward a behavior results in greater perceived self-efficacy, which can in turn, result in increased positive affect."
- "When positive emotions or affect are associated with a behavior, the probability of commitment and action is increased."

- "Families, peers, and health care providers are important sources of interpersonal influence that can increase or decrease commitment to and engagement in health-promoting behavior."
- "The greater the commitments to a specific plan of action, the more likely health-promoting behaviors are to be maintained over time" (para. 3)

The pulmonary rehabilitation program should be designed with the intention of maximizing benefit to its participants. This can be accomplished by tailoring program activities to fit the patient, providing support by staff to increase motivation of the patient and family, and providing adequate education to the patient and family to develop adequate knowledge of the disease and maintenance in order to promote the best outcomes.

Practice Hypotheses

- The greater the number of patients seen with COPD assumes a greater number of possible pulmonary rehabilitation program referrals.
- If providers at Labette Health currently refer patients to other pulmonary rehabilitation programs at other facilities, then they will be more likely to refer their patients to a pulmonary rehabilitation program within their healthcare entity.
- Providers will be more likely to refer their patients to pulmonary rehabilitation if they perceive pulmonary rehabilitation programs as beneficial.
- A more positive perception of pulmonary rehabilitation program by providers can support the future development of a pulmonary rehabilitation program.
- Future development of a pulmonary rehabilitation program can be supported through the personal and professional opinions of providers.

Definitions of Key Terms

Key terms used throughout the Doctor of Nursing Practice (DNP) project are listed and defined below.

Rural- "all people, housing, and territory that are not within an urban area" (Health Resources & Services Administration, 2021).

Pulmonary rehabilitation- "supervised program that includes exercise training, health education, and breathing techniques" (National Heart, Lung, and Blood Institute, n.d.).

Quality of life- "a patient's general well-being, including mental status, stress level, sexual function, and self-perceived health status" (Farlex Medical Dictionary, 2012).

Guidelines- "information intended to advise people on how something should be done or what something should be" (Cambridge Dictionary, n.d.)

Self-efficacy- "people's beliefs about their capabilities to produce effects" (Bandura, 1994)

Logic Model

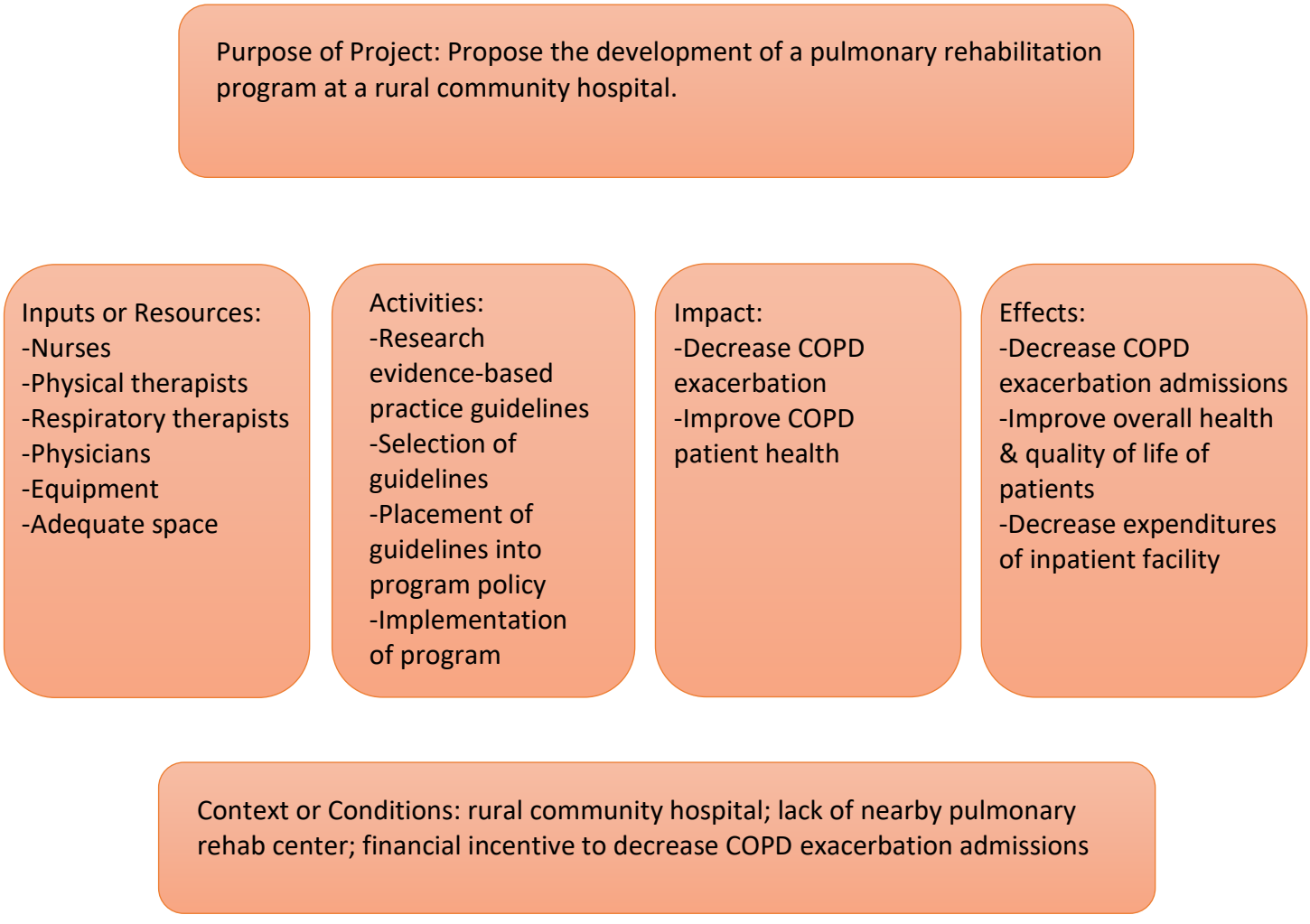
The logic model in Figure 1 was developed for this project to highlight major components of a pulmonary rehabilitation program as well as the potential effects of such a program. It is important to include the logic model in this project in order to graphically section key components of a pulmonary rehabilitation program and understand the major outcomes associated with program completion. This model creates an ease of access and understanding of a generalized picture of the project.

This model was chosen because it sections major components of developing a pulmonary rehabilitation along with goals for the program. The program requires various resources in order for it to be initiated including physicians, nurses, physical therapists,

respiratory therapists, equipment, and adequate space. After these resources are acquired, evidence-based practice guidelines are to be developed and adopted into the program policy. The potential effects the program can have on patient outcomes includes decreasing COPD exacerbations associated with hospital admissions, improving the quality of life of patients, and decreasing expenditures on the facility associated with COPD.

Figure 1

Project Logic Model



Chapter Summary

Chronic obstructive pulmonary disease is a pulmonary disease affecting the airflow in and out of the lungs. It causes many different symptoms in patients, mainly including shortness of breath, discomfort, and decreased functionality. Accompanying these symptoms, patients can experience a decreased quality of life and frequent admission to the hospital. Chronic obstructive pulmonary disease is not only a burden on patient health, but is also a financial burden on patients and health care facilities. Efforts to cut costs for patients and facilities include the development of pulmonary rehabilitation programs. Pulmonary rehabilitation programs utilize activities and education delivered to the patient to allow patients to better manage their disease and decrease incidence of COPD exacerbations.

Nurses have the ability to make a large impact for COPD patients by partnering with physicians and being part of the pulmonary rehabilitation team. Being directly involved with patient care can allow the nurse to communicate with physicians when they encounter a patient they believe would be a good candidate for pulmonary rehabilitation. Nurses can also be utilized throughout the program by helping implement activities and educating patients. The purpose of this scholarly project was assess provider interest in pulmonary rehabilitation in hopes to develop a proposal for implementation of a pulmonary rehabilitation program at Labette Health, a healthcare facility providing care to thousands of the rural area citizens that surround it.

Nola Pender's Health Promotion Model was the theoretical framework that provides the foundation for the development of the program guidelines. The health promotion model hypothesizes that individuals react with their environment to pursue

health. If they believe the health promotion activities are beneficial, they will be more likely to engage in the activities. It is believed that patients with COPD participating in the program will develop enhanced disease management skills, increased overall perception of quality of life, decreased inpatient COPD exacerbation admission rate, and decreased expenditures experienced by the facility.

CHAPTER II

Review of the Literature

Chronic obstructive pulmonary disease (COPD) is one of the leading causes of mortality in Americans. Xu et al. (2020) reports that, as of 2018, the fourth leading cause of death in the United States was contributed to lower respiratory disease (p. 2), which includes chronic obstructive pulmonary disease. The development of a pulmonary rehabilitation (PR) program to aid in the management of COPD includes multifactorial components tailored towards the needs of the program participants and operators with the intention of increasing patient management, quality of life, decreasing exacerbations, and decreasing admission rates for exacerbations. According to Medline Plus (2018), pulmonary rehabilitation includes exercise training, nutritional counseling, disease management education, techniques to save energy, breathing strategies, and psychosocial counseling. The Global Initiative for Chronic Obstructive Lung Disease (2020) recommends pulmonary rehabilitation for all individuals with a diagnosis of COPD GOLD standard B through D.

Research has proven that rural area residents are at a disadvantage for access to healthcare, including pulmonary rehabilitation programs. Research has also proven that rural area healthcare systems are at an increased financial burden for delivering care to patients. One option for initiating a pulmonary rehabilitation program in a rural area

would be paying an outside institution to own and operate the program in agreeance with the participating facility. This option may not be feasible or in the best interest of the facility. Before initiating the development of a pulmonary rehabilitation program, it is important to consider the risks and benefits of the development of such a program. Therefore, the aim of this chapter was to review relevant literature on COPD and pulmonary rehabilitation. This chapter is dedicated to compiling a number of research articles, synthesizing the results, and indicating support for such a program.

Multiple databases were utilized for retrieval of research articles and information to contribute to the literature review portion of this project. Databases searched include CINAHL, PubMed, and ProQuest. The keywords searched in each database included pulmonary rehabilitation, pulmonary rehabilitation and healthcare utilization, pulmonary rehabilitation cost, pulmonary rehabilitation and mortality, pulmonary rehabilitation and quality of life, and pulmonary rehabilitation in rural areas. Selection criteria of articles for the literature review included peer reviewed articles and those developed during or after year 2013.

Literature Review

There is a substantial amount of literature accessible that supports the use of pulmonary rehabilitation programs and/or the various components included in a program. A quick search of "pulmonary rehabilitation for COPD" can enlist a plethora of information that can be overwhelming to individuals. The subsequent literature review is utilized to generalize the information of selected research articles and denote their applicability to pulmonary rehabilitation initiation.

Pulmonary Rehabilitation

In order to understand the benefits of pulmonary rehabilitation, one must be educated on what is included in pulmonary rehabilitation and the clinical practice guidelines associated with PR. Pulmonary rehabilitation is a comprehensive approach to managing COPD with the intention to "reduce symptoms, optimize functional status, increase participation, and reduce health care costs" (Nici et al., 2021, p. 655). Pulmonary rehabilitation programs include exercise training, nutritional counseling, education, technique training, breathing strategies, and psychological counseling (MedlinePlus, 2018).

Clinical practice and competency guidelines have been developed for utilization by pulmonary rehabilitation programs and program personnel to guide delivery of PR. The Department of Veteran Affairs (2014) developed clinical practice guidelines for chronic obstructive pulmonary disease management and strongly recommend pulmonary rehabilitation to patients with stable chronic obstructive pulmonary disease experiencing exercise limitation despite pharmacologic treatment (p. 40). Nici et al. (2007) produced an outline of recommended competencies for pulmonary rehabilitation personnel. The competency guidelines make specific recommendations regarding personnel's ability to assess, intervene, and evaluate pulmonary rehabilitation. Complementary to the clinical competency recommendations, Nici et al. (2007) references the "American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) Guidelines for Pulmonary Rehabilitation Programs (p. 355) as a source for clinical practice guidelines.

Quality of Life

Pulmonary rehabilitation has the capability to increase quality of life for patients with not only COPD, but other lung conditions as well. In a retrospective research study conducted by Schroff et al (2017) regarding the benefits of pulmonary rehabilitation regardless of baseline lung function, questionnaires were delivered to 229 participants of a pulmonary rehabilitation program. Participants must have completed a minimum of 20 sessions of the program over a course of 12 weeks. In addition to improvements in functional capacity, six-minute walk distance, exercise capacity, and dyspnea, Schroff et al. (2017) saw an improvement in participants' health perception, emotional role, social function, mental health, pain, vitality, and depression. It was concluded that "patients with COPD experience meaningful improvements in quality of life" after completion of the pulmonary rehabilitation program (Schroff et al, 2017, p. 31).

Pulmonary rehabilitation is an integrated care program that combines various components of exercise and education to promote self-care and disease management by individuals with chronic disease. Ferrone et al (2019) conducted research on an integrated disease management (IDM) follow-up intervention that includes "patient identification, accurate diagnosis, case management, patient education, and skills training, and then to evaluate the IDM intervention in a high risk, frequent exacerbation population with a poor baseline QoL (quality of life)" (p. 2). Their integrated disease management program design is fairly similar to that of a pulmonary rehabilitation program. A total of 180 patients were studied before and after program delivery. Ferrone et al (2019) were able to prove that those individuals that had received IDM experienced improved quality of life, decreased severe exacerbations, and fewer number of emergency department visits.

Lou et al (2015) aimed their research at the effectiveness of a pulmonary rehabilitation program in 14 rural communities in China. The rehabilitation program delivered to participants with COPD included education on COPD, inhaler techniques, medications, smoking cessation, exercise, vaccinations, rehabilitation, and counseling (Lou et al, 2015, p. 104). The data produced by Lou et al (2015) indicated a positive impact on participants health status, as evidenced by a reduction in anxiety, depression, cumulative death rate, current smoking rate, hospitalizations and emergency department visits (p. 109). Lou et al (2015) concluded "these findings support the idea that our health management program may serve as an effective intervention strategy for managing patients with COPD who reside in rural areas" (p. 111).

Mortality

There is a substantial amount of evidence available indicating the effect COPD can have on mortality rates. Pulmonary rehabilitation has proven its effectiveness on reducing mortality rates in individuals with COPD. Camillo et al (2016) developed a study to investigate the changes in six-minute walk distance (6MWD) and five-year survival rate on individuals with COPD after utilization of a pulmonary rehabilitation program. The selected individuals of the study participated in a "6-month PR (pulmonary rehabilitation) program that included social, nutritional, and psychological support; optimization of prescription medications; and exercise training" (Camillo et al, 2016, p. 2672). The first three months of the program were considered the intensive phase, where participants participated in high-intensity activity three-times per week. The second three months of the program was considered the maintenance phase, where participants continued their exercises learned during the first phase, but only two-days per week at a

lower intensity. Data on those individuals that participated in at least the first phase were included for the study.

Results of the study indicated that improvements were seen in all participants in terms of six-minute walk distance, muscle force, health-related quality of life, and incremental cycling tests after completion of three months of pulmonary rehabilitation. Camillo et al (2016) also showed that 83% of those that completed three months of the program continued to follow the program for 3-6 months after program completion. Individuals with the greatest increase in 6MWD were shown to have decreased mortality predictors. The final conclusion of the study demonstrated an increased chance of five-year survival with the completion of pulmonary rehabilitation and significant improvements in 6MWD.

The components of a pulmonary rehabilitation program make PR an integrated care approach to disease management. In a study conducted by Hernandez et al (2015), an integrated care (IC) program was established for frail COPD patients and carried out over the course of 12 months, then participants were followed-up on over the course of six years to determine the effectiveness the program had on health, quality of life, emergency department visits, hospital admissions, and mortality. The IC program mainly consisted of an educational program that "covered knowledge of the disease, instructions on nonpharmacological treatment, administration techniques for proper pharmacological therapy and techniques for self-management of the disease and co-morbid conditions including strategies to adopt with future exacerbations" (Hernandez et al, 2015, p. 2). The researchers found that the IC intervention group proved to have better self-management, fewer emergency department visits, and a decrease in mortality.

Most commonly, pulmonary rehabilitation is delivered on an outpatient basis. That is, the program is completed while the patient is not admitted to the hospital. Delivery of a modified pulmonary rehabilitation program while admitted to the hospital is not impossible. Nakahara et al (2016) set to identify whether a reduction of in-hospital mortality was seen in patients admitted to a given facility that received their pulmonary rehabilitation during their admission. Of the 6,712 individuals included in the study, Nakahara et al (2016) were able to positively indicate that "rehabilitation had a positive effect in reducing in-hospital mortality by 20%" (p. 1500).

Healthcare Utilization

Healthcare utilization for COPD management and exacerbations can be physical, emotional, and financial burdening on the patient and the healthcare delivery system. Pulmonary rehabilitation has the capability to decrease the strain on healthcare utilization for the patient and the healthcare system. There are many factors that contribute to the overall financial burden of COPD on individuals, healthcare entities, and the healthcare delivery system. Healthcare entities are financially impacted by COPD in various ways, including money lost on individuals readmitted to the hospital within 30-days of dismissal with a diagnosis of COPD exacerbation. Medicare.gov (2021) reports that Labette Health has a 30-day readmission rate of COPD patients of 18.3%. Donesky et al (2015) conducted a study on individuals that had participated in a pulmonary rehabilitation program at a selected facility. There were multiple questions included in the questionnaire to develop data for the research. The researchers aimed to assess participants hospitalizations, emergency department visits, smoking status, health status, pulmonary rehabilitation strategy utilization, attendance to support groups, and

participation in exercise (Donesky et al, 2015, p. 1122) at six months and one year after PR completion. Results of the study showed that those who participated in the PR program, especially those that continued to utilize what they had learned in the program, showed a reduction in exacerbations, emergency room visits, and healthcare utilization.

Walsh et al (2019) conducted a research study of COPD participants with the aim to "determine healthcare benefits including utilisation benefits in the 0–12 and 12–24 months postpulmonary rehabilitation compared with the 12 months preprogramme" (p. 2). Developers of the study selected a total of 426 individuals diagnosed with COPD to be included in their study. The participants were divided into two separate groups based on number of respiratory-related hospital admissions in the 12-months preceding the pulmonary rehabilitation program. The non-presentation group included 270 individuals that had zero hospital admissions prior to the program. The presentation group included 156 individuals that had at least one or more hospital admission prior to the program. The pulmonary program delivered included an eight-week program with two exercise sessions per week.

The presentation group showed a reduction in hospital admissions by 9.2% in the first 12-months after program delivery. Emergency department visits and number of hospital days admitted were also decreased in the first 12-months after program delivery. Walsh et al (2019) concluded that pulmonary rehabilitation is an effective means in "reducing days spent in hospital and the number of ED (emergency department) presentations in the first 12 months postprogramme" (p. 4).

In another study conducted by Ozmen et al (2018), data regarding hospital and emergency department admissions were obtained on 51 patients with chronic respiratory

diseases of which 37 of the 51 had COPD. Participants of the study participated in an eight-week pulmonary rehabilitation program that included exercises and education particular for disease management. Exercise capacity, quality of life, emergency department and hospital admissions data were all included in the results. Ozmen et al (2018) found that all domains of health measured had improved after program completion as well as "the number of emergency admissions and hospitalization rates significantly decreased after PR" (p. 173).

Cost Effectiveness

The management of a chronic, incurable disease such as COPD, is not only a financial burden on the individual with the diagnosis, but the healthcare system as well. The Centers for Medicare and Medicaid Services (2020) now includes COPD under its realm of conditions eligible for decreased reimbursement based on unplanned readmissions. Simply, this means that a facility participating in the program will receive less reimbursement as readmission rates of COPD exacerbation in less than 30-days of previous admission increase. Gillespie et al (2013) developed and performed a research study that looked more specifically at the financial aspect of a structured education pulmonary rehabilitation program. The study included the cost analysis of COPD management with and without use of PR. While the program delivered did not include all of the components of a traditional rehabilitation program, such as exercises, it included many of the educational components that would be included in a traditional program. Cost analysis included financial data for the participating facility and the participants as well. Gillespie et al (2013) concluded in their research that the program may be cost-

effective in terms of disease-specific health status and "report the probability that the intervention is more cost-effective than the control" (p. 5).

It would be safe to assume that the cost of developing a pulmonary rehabilitation program may cause supporters of the program to be hesitant to proceed with its development. The components of the program itself have the potential to be relatively low cost. One important component of a PR program is exercise training delivered in various different modalities. Farias et al (2014) explored "the costs and benefits of implementing a simple aerobic walking program" (p.165). Quality of life, functional capacity, hospital admissions, and exacerbations were also quantified during the study. Farias et al (2014) found that after the eight-week course completion, six-minute walk distance, quality of life, sensation of dyspnea and fatigue, and respiratory muscle strength were all improved. Results also "demonstrate that subjects who did not participate in the intervention and consequently exacerbated, could incur a higher individual cost for the public health system" (Farias et al, 2014, p. 169).

Xie et al (2015) "aimed to evaluate the economic implications of early pulmonary rehabilitation (PR) programs (within 1–4 weeks after discharge) for chronic obstructive pulmonary disease (COPD) patients after hospitalization for an acute exacerbation" (p. 11) in Canada. During their research, data was collected on the cost of delivering a pulmonary rehabilitation program, cost per patient care, and cost of rehospitalization. "According to the cost-effectiveness analysis, outpatient hospital- or community-based PR leads to substantial cost savings" (Xie et al, 2015, p. 29).

Lack of Access

Anastasaki et al (2019) discussed the acceptability and feasibility of implementing a pulmonary rehabilitation program for chronic, stable asthma and COPD patients in a rural community located in Greece. Their research also included data on patient status and functionality prior to start of the program, as well as after completion of the program. The patients in this area experience a lack of access to healthcare, including PR. The program lasted for six weeks and participants attended two sessions per week. The results of the study included patient outcomes and the accessibility and feasibility of the pulmonary rehab program. After completion of the program, Anastasaki et al (2019) found that "both patients and stakeholders positively assessed the programme, noting the significant symptoms' reduction, the improvement and increase of physical activity and the benefits of received education on disease self-management" (p. 7). It was noted that program stakeholders largely supported the development and delivery of the PR program, providing feedback and "recommended that the PR programme should be sustained" (Anastasaki et al, 2019, p. 7).

Croft et al (2015) discuss the burden of COPD on Americans in their report of urban and rural disparities of COPD. Their report indicated that the disparity seen between rural and urban dwellers and poor COPD management may be attributed to "limited access to early diagnosis, treatment, and management of COPD" (Croft et al, 2015, p. 210). "In 2015, rural U.S. residents experienced higher age-adjusted COPD prevalence, Medicare hospitalizations for COPD as the first-listed diagnosis, and deaths caused by COPD than did residents in micropolitan or metropolitan areas" (Croft et al, 2015, p. 208). A large number of residents in the state of Kansas live in rural areas. Croft

et al (2015) noted that Kansas is ranked 15th in the nation regarding percentage of rural residents and 13.5% of the residents of Kansas living in a rural area having COPD (p. 209). Specific data related to Labette County residents living with COPD was unattainable. It was found, however, by Data USA (2021) that 22.7% of Labette County adult residents smoked cigarettes. The National Heart, Lung, and Blood Institute (n.d.a) states that "cigarette smoking is the leading cause of COPD" (para. 3). This data might infer that a substantial number of Labette County residents that smoke are also living with COPD. The above data also indicates the burden COPD plays on rural Kansans and can insinuate the need for access to pulmonary rehabilitation for these residents.

It has been shown that rural area residents generally experience a lack of access to healthcare. This lack of standard healthcare trickles over into lack of access to pulmonary rehabilitation programs as well. Moscovice et al (2019) aimed their research study at looking at the disparities seen between geographic areas and outpatient pulmonary rehabilitation programs. The research design focused on deriving data from a total of 3,142 hospitals. The hospitals included in the study were grouped based on geographic area, such as metropolitan, micropolitan, and noncore (rural). Moscovice et al (2019) collected the data on 1,316 noncore counties across the United States, resulting in 353 counties with a PR program and 963 without a PR program. "The results of this study indicate significant geographic disparities in access to hospital outpatient PR across the United States. Small rural hospitals and those in the most rural areas of the country are least likely to provide" (Moscovice et al, 2019, p. 311).

Conclusion

Pulmonary rehabilitation is a crucial component for the integrated disease management of chronic obstructive pulmonary disease. The review of literature provides unwavering support for use of PR and the benefits of such a program on patients and the healthcare system. Pulmonary rehabilitation programs continue to be underutilized, and access to PR programs is especially fewer and far between in rural areas. Rural access to PR can help cornerstone the progression of COPD in patients living in a rural community that may have a lack of access to the quality disease management strategies expressed in a rehabilitation program. Pulmonary rehabilitation is not only beneficial for healthcare entities, but more importantly, largely beneficial for the communities in which the healthcare entity serves.

CHAPTER III

Methodology

Project Design

The aims of this project were to determine healthcare provider interest in pulmonary rehabilitation (PR), create a stepwise approach to initiating a pulmonary program, and to present the business proposal to appropriate administrators at the potential pulmonary rehabilitation program facility. The included providers at Labette Health, a rural community hospital, were to be provided with an anonymous survey via SurveyMonkey to determine the amount of COPD management among providers, knowledge of pulmonary rehabilitation, thoughts and attitudes towards pulmonary rehabilitation, its perceived benefits, and support for a future pulmonary rehabilitation program. In order to initiate a program such as pulmonary rehabilitation, it is vital to complete a market analysis to determine the potential for success. Ball (2019) reports several advantages of conducting a survey for research including the ability to quickly deliver the survey, reach a large number of participants easily, minimal cost, and flexibility.

A key ingredient to the success of a program is support from those that will market the program, such as the providers ordering PR for their patient. A major focus of

this section of the project was to assess providers at Labette Health and their thoughts and support for pulmonary rehabilitation. Also included in this chapter are the necessary elements of the pulmonary rehabilitation program. Components of the program to be included in the business proposal were selected by support of literature for various program components, as well as what is required by the Centers for Medicare Services for reimbursement purposes. After compiling results of the survey and a rough development of the program characteristics, the proposal for the program was to be delivered to the Labette Health Board of Trustees for potential consideration and support.

Sample/Target Population

The Centers for Medicare and Medicaid Services (CMS) (n.d.) state that patient referral to pulmonary rehabilitation (PR) must be directly ordered by a physician or licensed practitioner including the type of therapies, frequency, duration, and should provide supporting diagnostic criteria of COPD GOLD Classifications B, C, or D. A key factor for a successful PR program involves the referral by physicians and practitioners at the participating facility. In order to obtain physician and practitioner support, it is crucial to assess the number of physicians that manage their patients' COPD, thoughts on PR, and their probability of referral.

The target population of the survey includes physicians, physician assistants, and nurse practitioners associated with Labette Health. Providers were recruited through collaboration with the Labette Health physician recruitment department. Approval for the survey and a list of the provider's contact information were provided. Providers chosen to receive the emailed survey was selected based on area of practice. Further details on inclusion and exclusion criteria are listed in the next section.

Inclusion/Exclusion Criteria

To be included in the survey, the provider must work in primary care or internal medicine, manage patients with COPD, and be willing to participate in the survey. In order to qualify as managing the patient with COPD, the provider must have COPD listed as an active health problem and primarily be in charge of the treatment of the disease. The survey was also sent to the pulmonologist associated with Labette Health that oversees the care of referred patients associated with the facility. Exclusion criteria includes providers that do not address or treat COPD within their patient population and/or are unwilling to participate in the survey.

Protection of Human Subjects

Limited protection of human subjects was needed for this project. Since there was no testing of treatments that could be potentially harmful included in this study, the focus for protection of the subjects will be geared towards maintaining confidentiality of the participants of the survey. Confidentiality was maintained through use of anonymous data retrieved from the survey.

Instruments

Support for a pulmonary rehabilitation program is a key feature to success. It was imperative to have support from the providers at Labette Health for the program in order to have a patient base that is referred to the program. In order to assess provider thoughts and support for a PR program, a survey was conducted. SurveyMonkey was the survey tool utilized to assess physician support. The survey was sent via e-mail to all physicians, nurse practitioners, and physician assistants associated with the facility that meet inclusion criteria. The demographic questions were used to determine if the participating

provider manages the treatment of COPD patients and how often. The remaining Likert-scaled questions were utilized to determine provider attitudes and support for a PR program at their facility. Likert-scaled questions were graded on a five-point scale with one being low support and five being of high support. Results of the survey were submitted anonymously. Once the survey was closed, data was analyzed and quantified to determine providers understanding of pulmonary rehab, their perceived need of a pulmonary rehab, and their likeliness of support of a program. The survey questions included two demographic questions followed by six 5-point Likert scaled questions. The questions included in the survey are listed in appendix A.

Procedure

There are a number of various details involved in developing and implementing a pulmonary rehabilitation program. Development of a program commonly includes effort from not only medical care teams, but administrators and office personnel as well. A business plan may be developed and presented to appropriate administrators prior to the development of the specific program components. In this section, various components that can be included in developing a proposal are discussed, but the major focus is on the survey that was completed within this project to assess providers thoughts and attitudes towards pulmonary rehabilitation.

Survey

In order to develop and deliver the survey to assess provider knowledge and support for a pulmonary rehabilitation program, the survey questions were strategically created and the details of the survey were defined. Survey responses to survey questions analyzed their primary area of practice, COPD-diagnosed patient load, thoughts on

pulmonary rehabilitation, and attitudes towards the development of a pulmonary rehabilitation program developed by Labette Health. The survey was sent through institutional review board (IRB) approval, eligible subjects determined, a timeline created, resources needed for delivery, and data collection and outcome determined.

IRB Approval/Statement of Mutual Agreement

After compilation of the survey that was delivered to all providers of the healthcare entity, Institutional Review Board (IRB) approval was obtained. A sample of the survey was provided to the IRB for review. Maintaining confidentiality and protection of human subjects was discussed with the review board when obtaining approval.

After receiving IRB approval, appropriate administrators of the healthcare entity of focus (Labette Health) are to be addressed and approval for delivering the survey to providers obtained. A sample of the survey, its purpose, and the protection of the participating providers was included in the information packet provided to the administrators.

Eligible Subjects

Once approval from administration was sought, eligible subjects included in the survey were selected based on inclusion and exclusion criteria as stated above. A detailed email including specific instruction on how to complete the survey, the purpose for it, and contact information for any questions regarding the survey was developed and sent to all of the providers eligible for participation.

Timeline

The initial time frame for completion of the survey was 14 days from delivery of the survey date. The goal for completion was to have at least 90% of the eligible providers to have participated in the survey. The deadline was extended out to 21 days from the initial email and a reminder email was sent one week prior to the survey closing since provider participation was not at least 90% of qualifying participants. Once the survey was closed, there was a 2-week time period for data collection and analysis.

Resources Needed

Resources to be used for delivery of the survey was SurveyMonkey. The only required resource for participants was an electronic device with data or internet capabilities. Electronic devices capable of allowing the participants to complete the survey included smart phones, tablets, and computers.

Data Collection and Outcome

The data collected once the survey was completed by the provider was only accessible by the survey developer. The intention of the survey was to assess the knowledge of pulmonary rehab, COPD patient population, provider attitudes towards PR, perceived benefits of PR, and support for patient referral.

Proposal Components

There are multiple components that can be included in developing a new service line presentation on a pulmonary rehabilitation program. Prior to initiation of a pulmonary rehabilitation program, it would be necessary to complete a formal market analysis, build a business plan, develop policies and procedures, and obtain insurance

credentialing. Specific proposal components are elaborated on subsequently for further consideration of a pulmonary rehabilitation program.

Market Analysis

The first step towards developing a pulmonary rehabilitation program could be conducting a market analysis. It is necessary to determine the target population that the program will seek. In the case of pulmonary rehab, individuals with a diagnosis of COPD Gold Standard II, III, or IV would be the target population. Next, it would be appropriate to determine the size of the patient population that would potentially be able to participate in the program. It could be necessary to determine the average number of patients seen within the facility and on average the number of patients with a qualifying diagnosis.

A critical component to the market analysis includes determining how patients will be marketed for the program. It would be significant to receive support from the providers associated with the facility in order to receive their referral and written order for pulmonary rehabilitation for a patient. The survey previously mentioned was utilized to assess the potential support of the providers at Labette Health with the capabilities of ordering PR to their patients. Another consideration included in the market analysis may be the financial stability of the program to support its longevity. Pulmonary rehabilitation is billable and reimbursable through Medicare and many other insurance companies.

Lastly, analyzing the competition with similar systems within the surrounding area is another important component to the market analysis. Labette County alone does not have a pulmonary rehabilitation program. The closest pulmonary rehab to Labette Health is at Girard Medical Center, which is 35 miles away and Neosho Memorial Regional Medical Center, that is 36 miles away. While both of these facilities have been

delivering rehabilitation services to the COPD population for some time now, they do not serve as wide of a patient base as Labette Health does.

Business Plan

The business plan may include a number of elements in order to comprehensively determine appropriateness of a new program development. A pulmonary rehabilitation program business plan could assess funding, a facility, staffing, equipment, and patient referral. The business plan should also be utilized to determine financial feasibility of such a program.

Funding. Funding may be necessary given that the facility isn't able to afford the upfront costs associated with establishing a PR program. There are various opportunities for financial support that can be considered. This may include applying for a grant through the state of Kansas or support through generous donations made by community members.

Facility. Selection of an appropriate facility capable for delivering pulmonary rehabilitation exercises and education courses is needed for program delivery. The facility should be large enough for more than one patient to be able to be participating in exercises or educational courses at a time. An ideal location for the program would be within the main facility of the health campus. The program will be a rolling program where patients will be able to begin and end based on referral timeframe and program availability.

Staffing. Staffing needs for the program may be dependent upon the facility associated with the program. Appropriate staff for a PR program may include a physical therapist, occupational therapist, registered nurse, and respiratory therapist. Additional

staff that may be beneficial to PR program delivery may include a dietician, social worker, pharmacist, and psychologist. Physical and occupational therapist are intended to deliver the exercise and/or endurance training throughout the program. The respiratory therapist will be available to perform pulmonary function tests.

Equipment. The equipment utilized in a pulmonary rehab program is fairly simple. Dependent on the amount of space available for the program to be delivered, it may be beneficial to utilize a treadmill, stair stepper, stationary bike, recumbent stepper, elliptical, incentive spirometer, and acapella. It is important to consider that not all patients will be able to complete the same exercise tasks and it is necessary to have a variety of different exercise machines to fit the needs of the patient. Other resources needed for the program include oxygen and a crash cart.

Patient Referral. In order to qualify for the pulmonary rehab program, participants must be referred to the program by their physician that primarily manages their COPD. The patient must have a diagnosis of COPD Gold Standard II, III, or IV and supporting evidence of this diagnosis. The providers must have it charted in the patient's record that the patient is medically stable for pulmonary rehab. A valid prescription order must be signed by the provider ordering the patient for PR.

Policies and Procedures

Policies and procedures must be developed and set forth for the rehabilitation program. Within the policies and procedures, a number of scenarios are addressed including necessary cessation of the program when patient status has changed, what to do in the event of a patient deteriorating quickly, and emergency management during possible environmental threats. Labette Health previously housed a cardiac rehabilitation

program. To the benefit of the future pulmonary rehab program, cardiac rehab and pulmonary rehab have the ability to utilize many policies and procedures interchangeably. Labette Health does not destroy any previous policies or procedures even after discontinuation of the program. Therefore, after review of the policies and procedures of the cardiac rehabilitation program, the previous policies and procedures may simply need to be updated and fitted more towards a pulmonary rehabilitation program.

Insurance Credentialing

As a final step prior to the startup of the program, it may be necessary for the program itself to receive insurance credentialing. Insurance credentialing provides the necessary credentials to the program with various insurance companies in order for the program to be able to bill for services. Medicare does not require credentialing, but other insurance companies may require credentialing in order for them to cover the cost of services.

Survey Data/Outcomes/Evaluation Plan

Survey results are necessary to include in the market analysis to understand the potential support of program implementation. Data from the survey was obtained and then analyzed to see what percentage of providers would endorse a pulmonary rehab program. Once this was determined, these results were included in the presentation to the Board of Trustees of Labette Health at the conclusion of this study.

Plan for Sustainability

A pulmonary rehabilitation program at Labette Health has the potential to be highly sustainable. Financial implications of the program to consider are the relatively

low cost equipment, low number of staff needed to deliver the program, small amount of space that will be needed to house the program, and the potential to use previous policies and procedures set forth by the cardiac rehab program that was once housed at Labette.

The cost-benefit analysis would have to be more thoroughly investigated, but there is great potential for the revenue to far outweigh the cost of the program. Pulmonary rehab is billable and reimbursable through many insurance companies and Medicare. An alternative to developing a stand-alone rehab program at Labette Health would be allowing an outside entity to deliver a PR program within the facility at Labette Health. An important consideration would be that any excess revenue created by the program would go back directly to Labette and would not have to be shared with the secondary company. Also, PR programs have been directly linked with a decrease in COPD exacerbations that lead to unnecessary hospitalizations. Decreasing the number of individuals admitted with a diagnosis of COPD exacerbation as well as those being re-admitted with an exacerbation within 30 days of dismissal would lessen the financial burden associated with those admissions at the facility.

The most important aspect for sustainability of the PR program would be the large number of patients that it could benefit. A successful program that delivers comprehensive care and promotion of quality of life to COPD patients only promotes health and wellness to the patient population that Labette Health already serves. Labette Health is known for centering their care around the patient, which should include the option of pulmonary rehabilitation to be offered to their most valued customers.

Physicians and providers at Labette Health are going to be the driving force for sustainability of the program. Without their support and referral to the PR program, there

will not be a target population to deliver the resource to. Ongoing collaboration between the program and the providers will be beneficial to make the program successful.

CHAPTER IV

Evaluation

The purpose of this project was to inquire about provider interest in the development of a pulmonary rehabilitation program at Labette Health, a rural community hospital. There are many goals for the completion of this project. An important goal for the development of the pulmonary rehabilitation program guidelines is to effectively manage chronic obstructive pulmonary disease in patients, not only seen at Labette Health, but also in the surrounding communities that may have to travel to other areas for rehab. It is with high hopes that better disease management will directly reflect a decrease in admission and readmission rates of COPD exacerbation to Labette Health. A reduction in admission and readmission rates will in turn save Labette Health time, resources, and money in the long-term. The major goal of this project is to provide a better quality of life to the COPD patients that utilize or surround Labette Health.

In order to support the future development of a pulmonary rehabilitation program for Labette Health, it is imperative to determine the need for such as program, as well as assess the potential support for the program from the referring providers. The primary care providers associated with Labette Health are going to be the foundational support for the program. Without their referral of patients, the program would not have the opportunity to positively impact the valued patients cared for by the healthcare facility.

The aim of the survey conducted was to assess the potential patient need and provider support for a pulmonary rehabilitation program. It was hypothesized that (1) the more individuals the pulmonary rehabilitation program can potentially reach, then the greater the chance of positively impacting the health of the individuals served by Labette Health, and (2) the more support for the development of a pulmonary rehabilitation program by the providers associated with Labette Health, then the higher the chance that the program will be developed and successful.

Description of Sample/Population

A total of thirty (30) healthcare providers, including twenty-nine (29) primary care providers and one (1) pulmonologist, associated with Labette Health received an invitation to participate in the survey via e-mail. The survey was open for participation for three weeks. A reminder e-mail notification was sent out one week prior to the survey closing in order to attract more participants to the survey. Of the thirty (30) providers invited to participate, twelve (12) of them elected to freely participate in the survey. The nine-question survey included two demographic questions at the beginning of the survey. Of the 12 individuals that participated in the survey, five (41.67%) were medical doctors, one (8.33%) was a doctor of osteopathic medicine, six (50%) were nurse practitioners, and none were physician assistants. When asked what type of practice each participant provides care in eight (66.67%) selected primary care, three (25%) selected internal medicine, one (8.33%) selected pulmonology, and none selected cardiology. All 12 (100%) participants reported that they do manage the primary care of patients with COPD in their practice.

Key Variable

The key variables for this study were the attitudes of providers regarding pulmonary rehabilitation that were elicited by use of a survey. The nine-question survey included three demographic questions, two multiple choice questions, three Likert-scaled questions, and one open-ended question. The three demographic questions were addressed in the previous sample description paragraph. The two multiple choice questions were provided to assess provider experience with COPD populations and if they currently refer to pulmonary rehabilitation programs elsewhere. The Likert-scale questions were scored on a scale from 1-5, with a score of 1 indicating the lowest support and 5 indicating the highest support for a pulmonary rehabilitation program. The open-ended question at the end of the survey allowed for the participants to provide additional comments regarding their opinion on a pulmonary rehabilitation program.

Analysis of Project Questions/Hypotheses

The survey questions were developed for the purpose of assessing how many providers treat patient diagnosed with COPD, their perceptions of pulmonary rehabilitation, and their thoughts on their entity developing its own pulmonary rehabilitation program. The two multiple choice questions, three Likert-scale questions, and open-ended comment survey questions were specifically designed to either support or oppose the development of a pulmonary rehabilitation program based on provider responses. There was a total of 12 providers that opted in to participate in the survey.

Relationship Between Number of Patients with COPD and Number of Referrals

The majority of the survey participants, 66.67% of providers reported that 25-50% of their patient population has a diagnosis of COPD. One provider (8.33%) reported

that 50-75% of their patients have a diagnosis of COPD. Three providers (25.00%) reported to see less than 25% of their patient population with COPD as one of their diagnoses.

Provider Willingness to Refer Within Their Organization

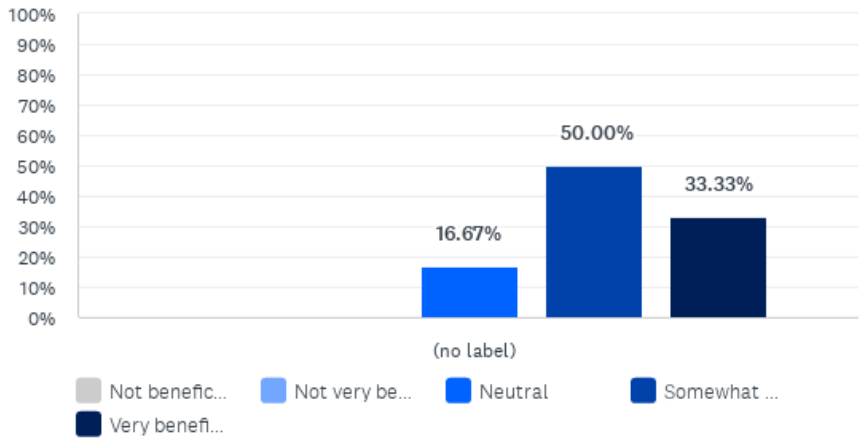
Providers were asked if they currently refer their COPD patients to pulmonary rehabilitation programs at other facilities. Only 4 of the 12 (33.33%) reported that they do currently refer patients to pulmonary rehabilitation. A majority of the providers, 8 out of 12 (66.67%), reported they do not currently refer their patients for pulmonary rehabilitation.

Provider Perception That PR Is Beneficial

When asked "To what degree do you perceive pulmonary rehabilitation to be beneficial?", 6 (50%) of the providers selected "somewhat beneficial", 4 (33.33%) providers selected "very beneficial", and two (16.67%) providers selected "neutral" (M= 4.17, SD= 0.69).

Figure 2

Provider Perception That PR Is Beneficial

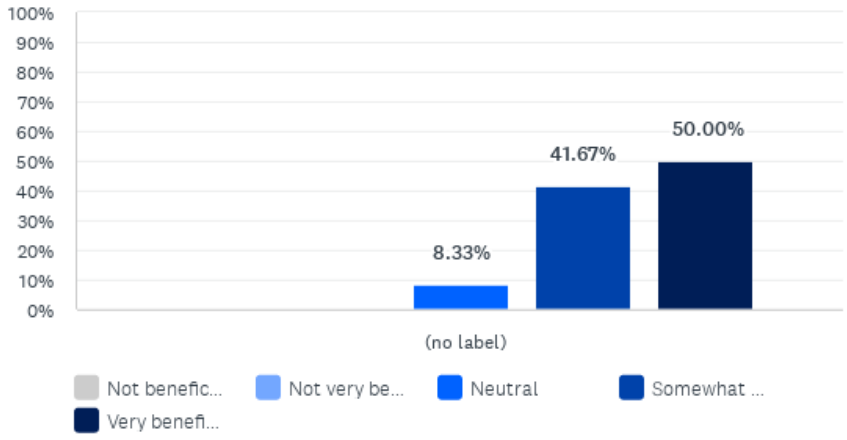


Provider Support for an In-House PR Program

Participants generally perceived a pulmonary rehabilitation program at Labette Health to be either “very beneficial” (50%) or “somewhat beneficial” (41.67%). Only one provider (8.33%) had a neutral perception on the benefits of pulmonary rehabilitation (M= 4.42, SD= 0.64).

Figure 3

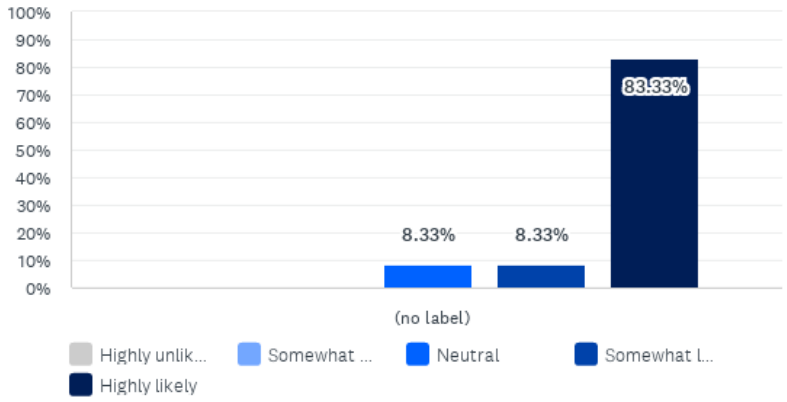
Provider Perception of the Benefit of an In-House PR Program



Although providers had slightly differing opinion on the perceived benefits of pulmonary rehabilitation, the majority were highly likely to refer their patients to pulmonary rehabilitation if their facility developed a program. Ten of the twelve participants (88.33%) reported they were “highly likely” to refer their patients to pulmonary rehabilitation within their entity. One provider (8.33%) was “somewhat likely” to refer their COPD patients and one provider (8.33%) responded “neutral” to referring their patients to pulmonary rehabilitation within their healthcare entity of Labette Health (M= 4.75, SD= 0.60).

Figure 4

Participant Willingness to Refer Patients



Provider Support for Development of a PR Program

Participants were provided with the opportunity at the end of the survey to provide personal feedback on their thoughts regarding the development of a pulmonary rehabilitation program at Labette Health. While only two participants offered comments, they should not be regarded as insignificant. One participant provided that "*I currently have patients for which it would be beneficial*." Another participant added "*I would greatly appreciate having a Pulm rehab program*."

Summary

The purpose of this scholarly project was to assess provider interest in the development of a pulmonary rehabilitation program with intent for future presentation of a proposal of a program at Labette Health. Prior to proposing the development of such a program, the need and want for a pulmonary rehabilitation program was assessed. Primary care providers are a critical component to a successful program due to their ongoing referral of COPD patients for rehabilitation. The thoughts and attitudes of

primary care providers at Labette Health regarding pulmonary rehabilitation and the potential benefits of pulmonary rehabilitation is an important assessment to complete prior to proposal. The survey conducted aimed to ascertain providers thoughts, attitudes, and need for a pulmonary rehabilitation program.

All 12 of the participating providers reported they managed the primary care of COPD patients. The majority of the providers reported that 25-50% of their patient population have a diagnosis of COPD, and one provider reported 50-75% of their patients has a COPD diagnosis. This finding implies that there is potential for a vast number of patients to be referred to pulmonary rehabilitation. Pulmonary rehabilitation was perceived as somewhat beneficial by 50% of the participants and very beneficial by 33.33% of the participants. While the majority of the providers reported they did not currently refer their patients to pulmonary rehabilitation, 88.33% of the providers selected that they would be highly likely to refer their patients to the program if their facility had one. The results of this survey indicated that initiation of a pulmonary rehabilitation program would be widely supported by the providers completing the referrals and that the development of a pulmonary rehabilitation program at Labette Health could be very beneficial.

CHAPTER V

Discussion

Relationships of Outcomes to Research

The overall purpose of this project was to assess provider interest in a pulmonary rehabilitation program at Labette Health with the future intent to improve patient quality of life, as well as reduce expenses on the facility in the future. A key component to the successful implementation and sustainability of a pulmonary rehabilitation program is the support and referral for pulmonary rehabilitation by the provider managing the patient's COPD. The aim of the survey completed for the purpose of this project was to determine provider thoughts and attitudes toward the development of a pulmonary rehabilitation program at Labette Health. It was concluded at the completion of the survey that providers generally perceived pulmonary rehabilitation to be beneficial and were highly likely to refer their patients for pulmonary rehabilitation if such a program was implemented at Labette Health.

A total of 30 providers received an email invitation to participate in the survey. There was a 40% completion rate with 12 of the 30 providers electing to participate. Of the 12 participating providers, five were medical doctors, one was a doctor of osteopathic medicine, and six were family nurse practitioners. Eight participants reported their

current practice is primary care, three practice in internal medicine, and one practices in pulmonology.

It was hypothesized that the greater the number of patients seen with COPD assumes a greater number of possible pulmonary rehabilitation program referrals. Data from the survey supported this hypothesis. Results indicated that the majority of the providers (66.67%) reported to see 25-50% of their patient population with a diagnosis of COPD and one provider reported that 50-75% of their patient population have a diagnosis of COPD. It is theorized that there is actually a larger number of patients seen within the Labette Health entity with a diagnosis of COPD that are managed by providers associated with Labette Health. Because of the relatively low number of survey participating providers associated with Labette Health, these results may not accurately represent how many patients with COPD are actually seen within the facility. Lack of participation may be contributed to inadequate promotion of the survey, lack of incentive for completing the survey, limited time for providers to participate, or possibly means of access to the survey considering it was only offered via email.

If providers at Labette Health currently refer patients to other pulmonary rehabilitation programs at other facilities, then they will be more likely to refer their patients to a pulmonary rehabilitation program within their healthcare entity and an improved positive perception of pulmonary rehabilitation program by providers can support the future development of a pulmonary rehabilitation program. Both of these hypotheses were supported by the data derived from the survey. Results indicated that, while only four providers currently refer their patients to pulmonary rehabilitation, ten of the 12 participants (88.33%) reported they were highly likely to refer their patients to

pulmonary rehabilitation if their health care entity established such a program. It is speculated that such a low number of providers do not currently refer their patients to pulmonary rehabilitation because of the lack of access to pulmonary rehabilitation in the area. The closest pulmonary rehabilitation program is roughly 40 miles away, making it difficult for many individuals to travel such a distance for rehabilitation.

It was also hypothesized that providers will be more likely to refer their patients to pulmonary rehabilitation if they perceive pulmonary rehabilitation programs as beneficial. The data relatively supported this claim with 50% of the providers selecting the "somewhat beneficial" option and 33.33% selecting the "very beneficial" option. Two providers selected that they are "neutral" on their perception of pulmonary rehabilitation. It is speculated that this may be due to those particular providers not currently referring their patients to rehabilitation programs. As previously stated, there is potential those providers do not currently refer their patients to pulmonary rehabilitation due to the lack of access of nearby programs.

Finally, future development of a pulmonary rehabilitation program can be supported through the personal and professional opinions of providers. The majority of the participating providers did not choose to participate in the additional comment option at the end of the survey. Two providers did elect to leave additional comments, which were able to show their support for the idea of developing a pulmonary rehabilitation program at Labette Health. One provider commented "*I currently have patients for which it would be beneficial*." Another provider stated, "*I would greatly appreciate having a Pulm rehab program*."

Project Survey Presentation to Stakeholders

The presentation of survey results were delivered to the Labette Health Board of Trustees via e-mailed paper copy at the request of the board members. Unfortunately, it was unattainable to be able to present the results of the survey in person, but there is potential for a live presentation if requested by the board after further review of the material. The presentation material provided to the board members is included in the appendix of this paper.

Of the few responses from the board members, positive feedback was received regarding the survey results. The majority of the board members were openly receptive of the survey results and pleased with the idea of considering the development of a pulmonary rehabilitation program. As a general whole, the board members thought that a pulmonary rehabilitation program would be a great addition to the services offered at Labette Health.

Observations

It was interesting how many providers perceived pulmonary rehabilitation to be beneficial for COPD patients, but a relatively low number of providers actually refer their patients to pulmonary rehabilitation. Considering that Labette Health used to have a pulmonary rehabilitation program, it is interesting to find how many providers would like to have another pulmonary rehabilitation program within the facility, yet it is not something that is currently being actively pursued. The previous program was a cardiopulmonary rehabilitation program that ran through the early 2000s and was said to be closed due to poor reimbursement. Throughout this project, the researcher has learned that pulmonary rehabilitation has the potential to be highly beneficial for COPD patients

in many different ways. Pulmonary rehabilitation can not only improve the functionality of an individual, but can enhance their quality of life. Chronic obstructive pulmonary disease can be quite debilitating to some people, and pulmonary rehabilitation has the ability to lessen the effects of those debilities.

Providers are at the forefront of patient care and advocacy. They are charged with the task of diagnosing and treating disease. Their expertise in COPD management and ways to improve patient outcomes with COPD is invaluable. Although this project had a relatively low number of participants, the results are significant enough to indicate that development of a pulmonary rehabilitation program at Labette Health should be highly considered.

Study instruments did perform as expected through this project. Data collected and analyzed produced results as to be expected. Improvements to the survey itself include more in-depth questions needed to gain more specific insight on pulmonary rehabilitation thought, attitudes, perceptions, and limitations for use. The outcomes of the study were reassuring. There are a number of improvements that could be made to enhance the significance of the survey and the results, but overall the study results indicated potential for further investigation of developing and implementing a pulmonary rehabilitation program at Labette Health. There is potential for the need of education for providers on pulmonary rehabilitation and the potential benefits of it for COPD management. An educational session on pulmonary rehabilitation could be an opportunity to increase provider knowledge on rehabilitation and boost perceptions of the benefits of a program.

Evaluation of Theoretical Framework

Nola Pender's Health Promotion Model was the theoretical framework that was selected for the purpose of this project. Two of the four major assumptions provided by Pender in her theory were noted in this project. The first assumption is that individuals "interact with the environment, progressively transforming the environment as well as being transformed over time" (Pepitrin, 2016, para. 3). Although the survey did not specifically support or refute this assumption, the survey results can potentially support the assumption that providers believe individuals are capable of being transformed over time with their positive perception of pulmonary rehabilitation. The core value of pulmonary rehabilitation is progressive disease management of COPD with the use of education, exercises, and monitoring to decrease the risk of COPD exacerbation and increased quality of life. Pulmonary rehabilitation not only transforms individuals with COPD physically but also teaches patients how to effectively monitor and manage their environment to help slow disease progression.

The second assumption states that "health professionals, such as nurses, constitute a part of the interpersonal environment, which exerts influence on people through their lifespan" (Pepitrin, 2016, para. 3). The survey was especially supportive of this assumption. The providers that participated in the survey, many of which were nurse practitioners, showed general support for pulmonary rehabilitation. Providers play an integral role in the initiation and success of pulmonary rehabilitation. Patients are not able to attend pulmonary rehabilitation without the referral of their provider that manages their COPD. As the patient progresses through the program, they are also continually

monitored by their referring provider. Their provider is in a supportive position to encourage patients to continue and complete pulmonary rehabilitation.

Evaluation of Logic Model

The survey results were only inclusive of one key component of the logic model. There are multiple aspects involved in the proposal, development, and implementation of a pulmonary rehabilitation program. The logic model developed in chapter one of this project included all of various components needed to implement a pulmonary rehabilitation program. The survey results were able to support the crucial role providers can potentially play in the success of a pulmonary rehabilitation program at Labette Health.

Limitations

One limitation of the research was the low number of participants that completed the survey. While almost half of the eligible primary care providers associated with Labette Health elected to participate, a larger response rate from providers could have aided in greater support of pulmonary rehabilitation and greater significance for potentially developing a program.

Another limitation of the survey includes lack of specificity or elaboration for specific survey questions. Specifically, the survey question regarding the percentage of the patient population seen with a diagnosis of COPD does not further specify the percentage of patients with a Gold standard III or IV classification of COPD. An individual must have one of the previously mentioned classifications in order to qualify for referral to pulmonary rehabilitation. Without this specification included in the survey, results could potentially be altered in regard to the actual percentage of patients that have

COPD and could qualify for rehabilitation. In turn, this could potentially decrease the significance of the data obtained from this question.

The method of sampling did not produce any bias relating to the survey results. The sample was chosen based on the primary area of care. The providers chosen to receive an invitation for the survey freely elected whether to participate or not in the survey and questions were answered based on providers own thoughts and attitudes towards pulmonary rehabilitation. The anonymous survey was the appropriate instrument to utilize for this research. E-mail appeared to be the most appropriate method for delivering the invitation to participate in the survey. In hindsight, extending the invitation to participate in the survey via other methods (i.e. text messaging or paper) could have potentially increased provider participation and significance of results. Time and resources did not seem to play a factor in survey completion or results.

Implications for Future Projects

The implications for future research and projects going forward from this project are endless. An important next step from this project could include a chart review to indicate how many patients have the correct classification of COPD in order to be possibly referred to pulmonary rehabilitation. A next step for improvement on knowledge development would also be further research on the specific aspects of pulmonary rehabilitation in order to further develop a business plan.

Financial planning for future pulmonary rehabilitation development should be highly considered and investigated. The financial aspect of a business plan is a critical component to a proposal for a program. Improvement on the design of this project for next time would further include those specific aspects of pulmonary rehabilitation and

more specifically include the various components of the business plan. The ultimate goal for this topic is the successful proposal, development, and implementation of a pulmonary rehabilitation program.

Implications for Practice/Health Policy/Education

Provider support for pulmonary rehabilitation is clinically significant for the future implementation of a program as well as disease management for COPD patients. Family nurse practitioners are going to be among many of those providers providing management care to COPD patients. It is important for family nurse practitioners to understand what pulmonary rehabilitation entails and the benefits of rehabilitation for COPD patients. With advanced knowledge on pulmonary rehabilitation, family nurse practitioners will be capable of properly referring their appropriate patients to pulmonary rehabilitation. It is recommended providers within Labette Health receive further education on pulmonary rehabilitation.

There are a number of important components to consider when proposing a pulmonary rehabilitation program, including a needs assessment, financial feasibility, and provider support for the program. This project examined provider support for proposing a pulmonary rehabilitation program. The results of the provider survey were supportive of further investigation of proposing, developing, and implementing a pulmonary rehabilitation program at Labette Health. It is recommended that the development of a pulmonary rehabilitation program at Labette Health be further investigated and considered.

Conclusion

The overall purpose of this project was to assess provider interest in a pulmonary rehabilitation program with intent for proposal of a pulmonary rehabilitation program at Labette Health. The project utilized a survey that was offered to providers associated with Labette Health in order to determine their thoughts and attitudes towards pulmonary rehabilitation and the potential development of a program. The outcomes of the project supported further investigation of proposing, developing, and implementing a pulmonary rehabilitation program. The outcomes also suggest future education to providers, including family nurse practitioners, in order to advance knowledge on pulmonary rehabilitation, the potential benefits for COPD patients, and gain further support for pulmonary rehabilitation.

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APPENDIX

Appendix A

Pulmonary Rehabilitation Survey

Hello! I am Shelbie Cosby and I am a Doctorate of Nursing Practice student at Pittsburg State University. I am developing a scholarly project on how to propose a pulmonary rehabilitation program at a rural community hospital, such as one like Labette Health. I have created an anonymous survey to inquire about the interest of providers in a pulmonary rehabilitation program and would greatly appreciate your time in completing this survey. This survey is not intended to indicate that Labette Health will be developing a pulmonary rehabilitation program, but more so as a research tool specifically for this project. Again, this survey is completely anonymous and will only take a couple of minutes to complete. I request that you complete this survey by December 22, 2021. You may or may not receive a percentage at the end of the survey. If so, please disregard as this is not a graded quiz. Complete the survey by clicking the link provided below. I greatly appreciate your time!

1. **Please select your medical credentials?**

    Medical doctor (MD)

    Doctor of osteopathic medicine (DO)

    Physician assistant (PA)

    Nurse practitioner (NP)

2. **What type of practice do you provide care in?**

    Primary care

    Internal medicine

    Pulmonology

Cardiology

3. **Do you manage the primary care of patients with COPD in your practice?**

   Yes [2]

   No [1]

4. **What is the percentage of your patient population with a diagnosis of COPD?**

   <25% [1]

   25-50% [2]

   50-75% [3]

   >75% [4]

5. **Do you currently refer COPD patients for pulmonary rehabilitation?**

   Yes [2]

   No [1]

6. **To what degree do you perceive pulmonary rehabilitation to be beneficial?**

   Not beneficial at all [1]

   Not very beneficial [2]

   I don't know [0]

   Somewhat beneficial [3]

   Very beneficial [4]

7. **To what degree do you believe it would be beneficial that your facility has a pulmonary rehabilitation program?**

   Not beneficial at all [1]

   Not very beneficial [2]

I don’t know [0]

Somewhat beneficial [3]

Very beneficial [4]

8. **How likely would you be to refer your patient if your facility had a pulmonary rehabilitation program?**

Highly unlikely [1]

Somewhat unlikely [2]

I don’t know [0]

Somewhat likely [3]

Very likely [4]

Appendix B

Project Survey Presentation to Stakeholders

A PROVIDER NEEDS ASSESSMENT FOR A PULMONARY REHABILITATION PROGRAM AT A RURAL COMMUNITY HOSPITAL

A Scholarly Project Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing Practice

Chronic Obstructive Pulmonary Disease

Chronic obstructive pulmonary disease is a lung disease "characterized by chronic and recurrent obstruction of airflow in the pulmonary airways" (Norris, 2019, p. 935). As of 2016, COPD was the fourth leading cause of death in the United States (Centers for Disease Control and Prevention, 2017). Chronic obstructive pulmonary disease is now the sixth leading cause of death and COVID-19 is the third leading cause of death (Centers for Disease Control and Prevention, 2022). The COPD Foundation (2018) estimates that 139,100 individuals across Kansas have been diagnosed with COPD and treatment cost averages $331 million annually.

What is pulmonary rehabilitation?

- Pulmonary rehabilitation is a comprehensive program that utilizes exercise and education to assist in the management of chronic obstructive pulmonary disease.
- Participation in pulmonary rehabilitation must come from the referral of the primary provider managing the patients diagnosis of COPD.

Why is pulmonary rehabilitation important?

- Pulmonary rehabilitation has the potential to increase functionality, improve quality of life, and decrease exacerbations that lead to hospital admissions.

Why is this information important to Labette Health?

- Between January 2018 and October 2019, Labette Health saw 687 patients within the facility with a diagnosis of COPD.
- There are no pulmonary rehabilitation programs within 30 miles of Labette Health.
- Pulmonary rehabilitation reimbursement and insurance coverage has improved since the closure of the previous cardiopulmonary rehabilitation program at Labette Health.
- Previous program policies and procedures should be able to be utilized for the future program.

Is there a need for Labette Health to have a pulmonary rehabilitation program?

- The 29 primary care providers and one pulmonologist associated with Labette Health were surveyed through my project to assess their perceptions of pulmonary

rehabilitation and thoughts on development of a program for the patients of Labette Health.

- A total of 12 providers participated in the survey.
- Survey results:
    - 3 of 12 reported <25% of their patients have a COPD diagnosis
    - 8 of 12 reported 25-50% of their patients have a COPD diagnosis
    - 1 provider reported >75% of their patients have a COPD diagnosis

    - 4 of 12 providers currently refer their patients to pulmonary rehabilitation
    - 8 of 12 providers do not currently refer their patients to pulmonary rehabilitation

    - 4 of 12 providers perceived pulmonary rehabilitation as "very beneficial"
    - 6 of 12 providers perceived pulmonary rehabilitation as "somewhat beneficial"
    - 2 of 12 providers perceived pulmonary rehabilitation as "neutral"

    - 6 of 12 providers believed a pulmonary rehabilitation program at Labette Health would be "very beneficial"
    - 5 of 12 providers believed a pulmonary rehabilitation program at Labette Health would be "somewhat beneficial"
    - 1 provider had a "neutral" response to a pulmonary rehabilitation program establishing at Labette Health

    - 10 of 12 providers reported they were "highly likely" to refer their patients to pulmonary rehabilitation if Labette Health establishes a program
    - 1 provider reported they were "somewhat likely" to refer their patients to pulmonary rehabilitation if Labette Health establishes a program
    - 1 provider was "neutral" to referring their patients to pulmonary rehabilitation if Labette Health establishes a program

Although there was a relatively low number of providers participating in the survey, there is room for more support for the development of a program. A more detailed market analysis and business plan would need to be developed before a pulmonary rehabilitation program were to be proposed. This survey can serve as foundational support for the future development of a pulmonary rehabilitation program at Labette Health.

Thank you all for taking the time to review the material within this paper. I greatly appreciate your time and all that you do for the future of Labette Health. If you have any questions regarding my project or would like a more in-depth presentation, please do not hesitate to reach me via email.

Thank you,

Shelbie Cosby, BSN, RN

Appendix C

IRB Approval Letter

Pittsburg State University
Application for Approval of Investigations Involving the Use of Human Subjects

For IRB Use Only

Date Received: 11/05/21
Application #: AS22-014

The application must be typed (not hand-written) and all attachments included as a single PDF document. Submit documents based on the schedule posted on the IRB page on the PSU website. When submitting the forms, allow sufficient time for the appropriate level of review before the planned start date. Attach additional sheets as necessary.

For questions about the review process contact Cindy Johnson at 620-235-4175 or at irb@pittstate.edu. Consult HHS.gov for guidance on Human Subjects Research.

Contact information is required to ensure that research subjects can contact the investigator(s)

Investigator(s) Name(s): Shelbie Cosby

☒ Check this box to indicate that all investigators have completed approved ethics training. Attach valid completion certificates to the completed application. Student projects: include all committee members.

Department: Irene Ransom Bradley School of Nursing

Local Address: 20090 Pratt Road Parsons, KS 67357

Phone: 620-252-8976 E-Mail Address: sfoister@gus.pittstate.edu

Project Title: Proposal of a Pulmonary Rehabilitation Program at a Rural Community Hospital

Expected Starting Date: 11/15/21 Expected Completion Date: 11/29/21

Application review type. Use *Review Criteria Form* to determine appropriate category. When multiple categories apply, applications will be evaluated on the ***most restrictive*** of categories.

☐ Full Review. Category:

☐ Expedited Review. Category:

☒ Exempt Review. Category: EX2

☐ **This research is also being submitted to an external IRB.** A full copy of that application or letter of support is attached.

If notification of human subject approval is required give date required: N/A

Name of agency: N/A

If the PI is a student, complete the following:

Faculty Sponsor: Dr. Jennifer Harris

Department: Irene Ransom Bradley School of Nursing

Phone: 620-235-4431 E-Mail Address: jharris@pittstate.edu

Committee Members: Dr.Jennifer Harris, Dr.Trina Larery, Dr Julie Allison

I. Description of the Subjects

A. How many subjects will be involved? 32

B. Subject Population (check all that apply):

■ Adults ☐ Prisoners ☐ Minors ☐ Intellectual Disability

☐ Physically Ill ☐ Disabled ☐ Special Education

☐ Other (explain): _____

C. For projects conducted in schools or school settings, written approval from the School Administrator must be obtained. Please attach to end of this application.

Location: N/A

Name of School: N/A

What grade are the students in? N/A Approximate Age of Students? N/A

How many classes involved? N/A What subject: (secondary)? N/A

D. Does this research require participation from an organization other than PSU? If Yes, please attach a letter of support/understanding or documentation from that organization demonstrating approval or willingness to participate. Labette Health is supporting the survey of providers. See attached.

E. What criteria will be used to select subjects AND/OR what criteria will be used to exclude individuals? (e.g., age, sex, race, ethnic origin, religion, or any social or economic qualifications)? State why the selection will be made on the basis or bases given.
To be eligible for inclusion, the provider must work in primary care and manage the care of patients with chronic obstructive pulmonary disease. The inclusion criteria for the survey was selected based on Centers for Medicare and Medicaid guidelines stating that individuals receiving referral to pulmonary rehabilitation must be done so by their primary physician that manages their COPD.

II. Abstract: Summarize the strategies used to collect data and protect participants. Discuss what will be the purpose of collecting the data (e.g. is the data for an improvement project, is the data solely for a peer-reviewed publication, is it a pilot for a larger study, etc.). Attach additional sheets as necessary.
The anonymous survey will be conducted through Survey Monkey and offered to providers via e-mail. Survey results will remain anonymous and data will only be accessible by the survey developer and project committee members. The purpose of the survey is to determine provider support of a pulmonary rehabilitaion program at their facility.

III. Procedure: Activities Involving Human Subjects. Attach additional sheets as needed.

A. Give a brief description or outline of your research procedures as they relate to the use of human subjects.

1. Who will be the subjects? How will you recruit participants into the study? If advertising for subjects, include a copy of the proposed advertisement.

The subjects of the study will be providers at Labette Health in Parsons, KS. All providers listed within the directory provided by Labette Health that are eligible for inclusion criteria will be forwarded the e-mail asking them to participate in the survey.

2. What precisely will be done to the subjects? State instructions given to the subjects and activities in which they will engage. If you are using questionnaires or handouts, please include a copy as an attachment to this application.

The providers will be e-mailed a brief overview of what the project is and be asked to complete the attached survey via Survey Monkey. The survey will include a total of eight questions. Instructions for the survey are as follows: Please take the time to participate in the survey regarding pulmonary rehabilitation. This survey is completely anonymous and results will remain protected throughout the course of the project. You may stop participating at any time in this survey without repercussions or consequences for choosing not to continue. The purpose of the survey is solely to assess provider interest in a pulmonary rehabilitation program at Labette Health. Thank you for your time!

3. If any of the subjects are minors or "vulnerable" (e.g. children, prisoners, mentally or physically disabled, pregnant women) discuss how their special condition will be handled.

No subjects will be minors or vulnerable population in the survey.

4. How will subjects be informed of research findings?

Providers will have access to the completed scholarly project through Pittsburg State University which will include results of the survey and will be shared by the Principle Investigator.

IV. Confidentiality and Anonymity: How will the data be collected? Check all that apply.

☒ Questionnaires (Submit a copy)

☐ Observations (describe how they will be conducted below in Section IV.A)

☐ Interviews (Submit sample questions)

☐ Standardized tests (list names; attach a copy if possible)

☐ Test (Submit a copy)

☐ Task(s) (briefly explain below in Section IV.A)

☐ Video or Audio Recordings, Still Images

☐ Computer Entries (explain below in Section IV.A)

☐ Other _____

A. Explain the procedures for collecting, recording, and storing that data during the study. Attach additional sheets as necessary. If using an online survey tool (e.g. SurveyMonkey, Qualtrics, etc.), include a screen shot of the survey's settings.

The survey will be delivered via email to participants. The survey response mode will be set to anonymous in order to maintain complete anonymity. Responses and data will be collected and stored on the survey monkey website under the account created specifically for the project. Data will only be accessible to the survey developer only.

B. Who will have access to the data during the study? Access should be limited to protect anonymity of subjects and confidentiality of subject responses. Students should include faculty advisors/committee members.

The survey developer (Shelbie Cosby) will be the only individual with access to the survey. Committee members Dr. Jennifer Harris, Dr. Trina Larery, and Dr. Julie Allison will have access to results of the survey prior to completion of the project.

C. Explain what will happen to the data once the study is completed. Federal regulations require that data be kept for at least three years after completion of the research (*45 CFR 46.115(b)*). How will the data be protected during this time? Is there a need to keep the data beyond that or will it be destroyed? If kept, how long and where will it be stored, how will confidentiality be ensured, who will have access to it?

Data will be destroyed after 3 years of being stored in a locked cabinet in the project advisor's office. The data produced by the survey and the survey itself will be removed from the Survey Monkey site and deleted from any hard drives that data may have been stored on.

D. Explain the level of confidentiality you are guaranteeing the participants. Include data privacy policies for all external tools being used.

The participants answers and results of the survey will have minimal risk of breach of confidentiality present on this project. There are no quesitons included in the survey that may possibly aid in identifying the participant. Survey response settings are set to anonymous and IP addresses will not be recorded.

V. Benefits, Risks, and Costs of this Study

A. What are the potential benefits to the subjects, to the field or discipline, or to the University?

The potential benefits of the survey include providing support for the future development of a pulmonary rehabilitation program at Labette Health.

B. Will compensation (money, extra credit, etc.) be offered to the subjects? If so, what specifically will be offered, and how will it be dispersed?

There will be no compensation offered to the subjects for participation.

C. What risks, discomforts, or other adverse reactions are most likely to be encountered by the subjects? Please consider carefully.

- ☐ Employability
- ☐ Deception (benevolent misdirection)
- ☐ Financial or personal reputation
- ▣ Embarrassment
- ▣ Emotional stress or discomfort
- ▣ Psychological stress or discomfort
- ☐ Loss of confidentiality
- ☐ Criminal or civil liability
- ☐ Physical stress or discomfort
- ▣ Other (explain): time consumption

D. What safeguards will you use to eliminate or minimize these risks? If there is the possibility of adverse reactions by the subjects, explain where the subjects can receive help.

To eliminate the risk of excessive time consumption of the particpants, the survey is eight questions in length with an additional comments section. Estimated average time of completion for the survey is one minute. Survey Monkey will be used to maintain anonymity of survey responses and protect confidentiality.

E. In your opinion, does the research involve **more than minimal risk** to subjects? "Minimal risk" means "*the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine or psychological examinations or tests.*" (*45 CFR 46.102(j)*) Please explain.

No, the research does not involve more than minimal risk with safeguards in place for any possible loss of confidentiality.

VI. Informed Consent

Unless authorized by the IRB, no investigator may involve a human being as a subject in research under the auspices of the University unless the investigator has obtained the informed consent of the subject or the subject's legally authorized representative. For studies involving minors or others incapable of providing their own legal consent, in addition to consent of the subject's representative, informed ***ASSENT*** should be obtained from study participants in a manner appropriate to the study population unless otherwise waived by the IRB.

For further information about informed consent processes review the information provided by the Department of Health and Human Services.

Exemption, Waiver, Alteration of Informed Consent or Documentation of Consent

If applying for research that will not include Informed Consent, check any that apply and attach appropriate documentation to this application. All other research must contain appropriate Informed Consent/Assent.

- ☒ This study is ***Eligible for Exemption***, so Informed Consent is not required
- ☐ ***Passive Parental Consent*** (a.k.a. Opt-Out consent) is requested because the research meets the minimum elements of Passive Parental Consent as described in the *PSU Policy Assurance Handbook*, **AND** parents will have no less than 14 calendar days to opt their student out of the study, **AND** the notification document will be sent directly to the parents.
- ☐ ***Waiver or Alteration*** of Informed consent is requested because the research involves public benefit/service programs **AND** that the research could not otherwise be carried out without waiver or alteration of Informed Consent (*45 CFR 46.116(e)*). Include *Informed Consent Waiver or Alteration Form*.
- ☐ ***Waiver or Alteration*** of Informed consent is requested because the research involves no more than minimal risk to the subjects **AND** could not otherwise be carried out without the requested waiver or alteration **AND** could not otherwise be carried out without using private information or biospecimens (if required) in an identifiable format **AND** the waiver or alteration will not adversely affect the rights and welfare of the subjects **AND** whenever appropriate, the subjects or legally authorized representatives will be provided with additional pertinent information after participation. (*45 CFR 46.116(f)*). Include *Informed Consent Waiver or Alteration Form*.
- ☐ ***Waiver of documentation*** of informed consent is requested because the only record linking the subject to the research would be the Informed Consent form **AND** the principal risk would be loss of confidentiality (*45 CFR 46.117(c)(i)*).
- ☐ ***Waiver of documentation*** of informed consent is requested because the research presents no more than minimal risk **AND** does not involve procedures requiring written consent outside a research setting (*45 CFR 46.117(c)(ii)*).
- ☐ ***Waiver of documentation*** of informed consent is requested because the subject is a member of a cultural group or community that does not normally sign forms **AND** there is no more than minimal risk **AND** there is an alternative method for documentation of consent (*45 CFR 46.117(c)(iii)*)

Informed Consent Contents and Process

A. Explain the procedures that will be used to obtain consent/assent. Attach additional sheets as necessary.

N/A

B. Federal regulations (*45 CFR 46.116*) state that the following elements of information should be provided to each subject. Place a check mark before each component included in your consent document. Attach a copy of the document to this application.

- ☐ A statement that the study involves research
- ☐ An explanation of the purposes of the research
- ☐ The expected duration of the subject's participation
- ☐ A description of the procedures to be followed
- ☐ Identification of any procedures which are experimental
- ☐ A description of any reasonably foreseeable risks or discomforts to the subject
- ☐ A description of any benefits to the subject or to others which may reasonably be expected from the research
- ☐ A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject
- ☐ A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained
- ☐ One of the following statements about any research that involves the collection of identifiable private information or identifiable biospecimens:
  - A statement that identifiers might be removed from the identifiable private information or identifiable biospecimens and that, after such removal, the information or biospecimens could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from the subject or the legally authorized representative, if this might be a possibility; or
  - A statement that the subject's information or biospecimens collected as part of the research, even if identifiers are removed, will not be used or distributed for future research studies.
- ☐ For research involving more than minimal risk, an explanation as to whether any compensation, and an explanation as to whether any medical treatments are available, if injury occurs and, if so, what they consist of, or where further information may be obtained
- ☐ Research, Rights or Injury: An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research-related injury to the subject
- ☐ A statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits, to which the subject is otherwise entitled

<u>Additional Elements as Appropriate</u>

- ☐ A statement that the particular treatment or procedure may involve risks to the subject (or to the embryo or fetus, if the subject is or may become pregnant), which are currently unforeseeable
- ☐ Anticipated circumstances under which the subject's participation may be terminated by the investigator without regard to the subject's consent
- ☐ Any additional costs to the subject that may result from participation in the research
- ☐ The consequences of a subject's decision to withdraw from the research and procedures for orderly termination of participation by the subject
- ☐ A statement that significant new findings developed during the course of the research, which may relate to the subject's willingness to continue participation, will be provided to the subject
- ☐ The approximate number of subjects involved in the study

<u>Documentation of Assent</u>

- ☐ When studying minors or others incapable of giving legal consent, assent forms must also be provided (unless waived by the IRB). Assent forms should contain the same information as above, but the language and delivery method should be appropriate for the subject population. Attach a copy of all assent documents that will be used to this application (including *Informed Consent Waiver or Alteration* form if applicable).

VII. Certification and Approval

Verification of Assurance

PRINCIPAL INVESTIGATOR ASSURANCE

I understand that as Principal Investigator, I have ultimate responsibility for the protection of the rights and welfare of human subjects and the ethical conduct of this research for which this application has been submitted.

I agree to comply with all PSU policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects in research, including, but not limited to, the following:

- Title 45, Part 46 of the Code of Federal Regulations.
- The Belmont Report, *Ethical Principles and Guidelines for the Protection of Human Subjects and Research.*

I also agree that the following criteria will be met:

- The project will be performed by qualified personnel according to the research protocol.
- Copies of all questionnaires, survey instruments, interview questions, data collection instruments, and information sheets for human subjects will be maintained in the respective department.
- Necessary review by the PSU Institutional Review Board will be sought if a) changes are made in the research protocol which may result in the research no longer meeting the original approved criteria, or b) Continued Review at the appropriate time.
- All study investigators have completed the approved ethics training, and a copy of the valid completion certificate is attached to this application.
- The Principal Investigator and all research personnel have read and understand the PSU Assurance Handbook concerning human subjects research protocols.

Shelbie Cosby — 10/21/21

Signature of Investigator — Date

Faculty Sponsor: If the Investigator is a student, the Faculty Sponsor (e.g. thesis director, research supervisor, etc.) must approve this application.

I certify that this project is under my direct supervision and that I accept the responsibility for ensuring that all provisions of approval are met by the investigator.

[signature] — 10-29-21

Signature of Faculty Sponsor — Date

Department Reviewer: I acknowledge that this research is in keeping with the standards set by our department, university, state and federal agencies. I assure that the principal investigator has met all departmental requirements for review and approval of this research, and that this application is complete and correct.

Amanda Alonzo — 11/8/21

Signature of Department Representative — Date

IRB USE ONLY

_____ _____

Institutional Review Board Chairperson (not required for Exempt Review) — Date

Meeting Date of Full Board Review: _____

Review Date of Expedited Review: _____
Attach correspondence to this application.

Continuing Review Date:

☐ 1 year from last business day of month of initial approval: _____

☐ Otherwise specified by board: _____

Appendix D

Labette Health Approval Letter

Labette Health
We Center Around You.

October 26, 2021

To Whom It May Concern:

Shelbie Cosby, Doctor of Nursing Practice student, is currently rotating with providers at Labette Health. She has requested permission to conduct a survey of our medical staff pertaining to Pulmonary Rehabilitation. We give our permission for her to conduct the survey of our medical staff.

Please contact me at 620-820-5466 if you have any questions.

Sincerely,

Jennifer Forbes
Director of Physician Recruitment
Labette Health
1902 S. US Hwy 59
Parsons, KS 67357

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Phone: (620) 421-4880 • www.labettehealth.com