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Chronic obstructive pulmonary disease (COPD) discharge care bundle : self-management education

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CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) DISCHARGE CARE

BUNDLE: SELF-MANAGEMENT EDUCATION

by

KIMBERLY GRAHAM, MSN, APRN, ACNS - BC

A DNP PROJECT

Submitted in partial fulfillment of the requirement for the
Degree of Doctor of Nursing Practice
to
The School of Graduate Studies
of
The University of Alabama in Huntsville

HUNTSVILLE, ALABAMA
2018

Chronic Obstructive Pulmonary Discharge (COPD) Discharge Care Bundle: Self-Management

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DNP PROJECT APPROVAL FORM

Submitted by Kimberly Graham in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice and accepted on behalf of the Faculty of the School of Graduate Studies by the DNP project committee.

We, the undersigned members of the Graduate Faculty of The University of Alabama in Huntsville, certify that we have advised and supervised the candidate on the work described in this DNP project. We further certify that we have reviewed the DNP project manuscript and approve it in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice.

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ABSTRACT

The School of Graduate Studies
The University of Alabama in Huntsville

Degree: Doctor of Nursing Practice   College: Nursing

Name of Candidate: Kimberly Graham

Title: Chronic Obstructive Pulmonary Disease (COPD) Discharge Care Bundle: Self-Management Education

The impact of COPD expenditure on the U.S. health system is $49.6 billion, and 23% accounts for hospital readmission (Harris, 2016). COPD readmissions occur within eight to fifteen days post-hospital discharge. Less than thirty-day COPD readmissions occur due to knowledge deficit and lack of recognition of exacerbation symptoms and nonadherence to medication regimens (Harris, 2016). The purpose of this quality improvement project (QI) is to develop and implement a chronic obstructive pulmonary disease (COPD) discharge care bundle that will increase nursing's effectiveness to prepare the soon-to-be-discharged COPD patient for self-management skills that will reduce the rate of hospital readmissions. The Bristol COPD Knowledge Questionnaire (BCKQ) pre-and post-test results showed significant improvement in knowledge from 62% to 70% (n=21). The post Nursing COPD Patient Discharge Education Survey asked the nurses to rate their confidence in using the COPD discharge bundle education in eight categories. Sixty-five percent of the RNs (n=21) responded to having increased confidence to provide COPD education. The respondents were 55% confident and 25% very confident with dyspnea management and breathing exercise education.

Regarding seeking nutrition supplements and consultation, 40% were confident, and 40% were very confident. The QI project COPD discharge care bundle was completed on 18 patients, and

three patients were readmitted during the project. The readmission rate for the QI project was 17%, indicating clinical significance compared to the national COPD readmission rate of 20%. Implementing the bundle has improved COPD knowledge, awareness, confidence with providing self-management education, reduced readmission rates, and interprofessional collaboration.

Keywords: chronic obstructive pulmonary disease, COPD, care bundles, discharge plan, self-management, self-efficacy, patient education, and hospital readmission.

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Chronic Obstructive Pulmonary Disease (COPD) Discharge Care Bundle: Self-Management

Education

Identification of the Problem

According to the World Health Organization (WHO), chronic obstructive pulmonary

disease (COPD) by 2030 will be the third leading cause of death worldwide (WHO, 2017). In

the United States, COPD is one of the leading causes of death and is most prevalent among older

adults over the age of sixty-five (Ferguson & Make, 2017; López□Campos, Tan, & Soriano,

2016). According to the Global Initiative for Chronic Lung Disease (GOLD), COPD is a public

health challenge impart due to repetitious exposures to COPD risk factors and the aging

population (GOLD, 2018). By 2030, according to population projections, older adults over 65

years of age in the United States will increase from 13 to 20 percent (Shah, Press, Huisingh-

Scheetz, & White, 2016). The hallmark of chronic obstructive pulmonary disease (COPD) is

airway obstruction due to chronic lung inflammation and tissue damage. Risk factors for COPD

are cigarette smoke or tobacco, environmental pollutants, and genetics (Criner et al., 2015;

GOLD, 2018; Kaufman, 2017). The impact of COPD expenditure on the U.S. health system is

$49.6 billion, and 23% accounts for hospital readmission (Harris, 2016). COPD readmissions

occur within eight to fifteen days post-hospital discharge. Less than thirty-day COPD

readmissions occur due to knowledge deficit and lack of recognition of exacerbation symptoms

(Harris, 2016).

Patient Perspective

Dyspnea is the most disruptive symptom of COPD that affects the patient's ability to

perform activities of daily living and is the reason for most hospital recidivism (Bentsen,

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Miaskowski, & Rustøen, 2014). Other common symptoms of COPD are chronic coughing,

copious sputum and wheezing. However, persistent air hunger and episodes of breathlessness

during physical activity have been reported by sufferers as the worse symptoms of chronic

obstructive pulmonary disease (WHO, 2017).

Economic Perspective

The cost of COPD includes treatment, hospitalization, equipment, and re-hospitalization

due to exacerbation (Criner et al., 2015; Laverty et al., 2015; Parikh, Shah, & Tandon, 2016).

The fourth leading condition for 30-day readmission is COPD (Parikh et al., 2016). The Centers

for Medicare and Medicaid Services (CMS) have implemented a financial penalty process for

hospital readmission for various conditions which includes COPD. As of 2015, three percent is

the maximum Medicare reduction penalty from CMS for readmission rates (Braman, 2015).

Management Perspective

COPD is a progressively debilitating disease, and when combined with comorbidities, it

leads to high mortality and morbidity rates (GOLD, 2018). The clinical management of COPD

is to slow the disease progression through reducing exacerbation, reducing complications,

manage symptoms and improve healthcare outcomes (Kaufman, 2017). It is important for the

healthcare team to develop care plans for the impact of COPD on the patients (Ferguson &

Make, 2017). To optimize adherence and improve outcomes post-discharge, it is recommended

that clinicians use strategies that will increase patient self-management knowledge and skills

(Ferguson & Make, 2017). Self-management interventions such as patient-specific COPD

education, smoking cessation, infection control, vaccinations, appropriate inhaler usage, energy

conservation, respiratory muscle strengthening, and breathing exercise can reduce physical

health decline and improve the COPD care continuum (Cannon et al., 2016; Fritz & McKenzie,

2014). The outcome achievement for the patient is when they can fully integrate the learned self-management skills for managing dyspnea that leads to positive health improvement and behavioral changes (Cannon et al., 2016).

The British Thoracic Society conducted a survey that revealed specialists before discharge did not see many COPD patients. COPD patients were not given individualized post-discharge teaching, medication was not assessed, and arrangement for follow up care was absent (Yorke et al., 2017). The rationale for CMS's reimbursement penalty is to hold hospitals accountable for health care delivery and to motivate the development of innovative strategies that are patient-centered, promote self-care and reduce recidivism (Braman, 2015; Harris, 2016). Hospital systems are evaluating new strategies and programs that will improve patient safety, collaboration and patient care outcomes.

Problem Statement

Given the complexity of COPD, an interprofessional approach and patient partnership are required to achieve improved self-efficacy to utilize self-management skills, understand medication usage and overall COPD progression (Lin, Wu, & Huang, 2015; Ospina et al., 2016).

The hospital participating in the quality project has disease-specific education packets for stroke and heart failure patients. However, the COPD patient population admitted to the hospital does not have a specific discharge preparation education packet. The COPD education provided was unstructured, varied in content, and inconsistent from nurse to nurse throughout the hospital.

Purpose Statement and PICOT Question

The purpose of this quality improvement project (QI) is to develop and implement a chronic obstructive pulmonary disease (COPD) discharge care bundle that will increase nursing's effectiveness to prepare the soon-to-be-discharged COPD patient with self-

management skills that will reduce the rate of hospital readmissions. For the project, the following clinical focus PICOT question was developed: For medical-surgical nurses, caring for the soon-to-be-discharged COPD patient over 60 years of age, will a COPD discharge care bundle increase nursing's effectiveness to prepare the patient for discharge with self-management skills to reduce the rate of hospital readmissions? Without an innovative COPD management plan for discharge preparation and self-management, the patient will continue a vicious cycle of disabling dyspnea, deconditioning, exacerbation, and hospital readmission. Research studies discussed by (Hopkinson et al., 2012; Ospina et al., 2016) have focused on developing COPD care bundles which use evidence-based interventions and practice in a structured manner to prepare patients to transition home. Innovative COPD discharge care bundles have the potential to support patients and healthcare systems in the endeavor to manage the complexities of COPD (Ospina et al., 2016).

Review of the Evidence

Search Strategy

A literature review was conducted utilizing several databases to search for primary research, secondary sources and clinical practice recommendations related to the discussed clinical problem and purpose of the proposed project. Databases and processes used consisted of the Cumulative Index to Nursing and Allied Health (CINHAL), PUBMED, Cochrane and the ancestry or descendancy approach with search years from 2014 to 2018. The keywords used to search were: *COPD, chronic obstructive pulmonary disease, care bundles, discharge plan, self-management, self-efficacy, patient education, and hospital readmission.* Search limitations utilized were English language, peer-reviewed, full text, research randomized clinical trials,

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evidence-based, clinical trials, systematic review, and meta-analysis. The level of evidence was evaluated using the evidence hierarchy pyramid.

Care Bundles

The Institute for Healthcare Improvement (IHI) introduced the concept of care bundles to healthcare as a means to improve care processes, reliability and prognostic outcomes (IHI, 2018). The first known bundles from IHI were for the ventilators and central lines with measurable results of near-zero occurrences within many hospital care areas. The science behind bundles is to establish best practices, professional collaboration, and execution without inconsistencies (IHI, 2018). To date, there are limited studies specific to COPD discharge bundles (Braman, 2015).

COPD Care Bundles Components

Numerous interventions and treatment modalities can be used to manage COPD depending on the presenting factors and severity. Given the successful precedence of using bundled care processes by IHI, providers, and healthcare systems are evaluating targeted interventions that can be bundled for successful outcomes in COPD. Finding the right combination for a bundle treatment is challenging. Hopkinson et al. (2012) research team designed and implemented a COPD care bundle study with 94 participants throughout one year. The Hopkinson (2012) bundle shared similar components as researchers Laverty et al. (2015); Parikh et al. (2016); Shorofsky, Lebel, Sedeno, Zhi Li, and Bourbeau (2015). Shared commonalities for COPD bundle tenants in the previously mentioned studies are: (a) education on disease progression and self-management, (b) demonstration of inhaler techniques, (c) smoking cessation, (d) scheduled follow-up visit to provider, (e) pulmonary rehabilitation

referral and, (f) monitoring follow-up phone calls. A systematic review by Ospina et al. (2016) analyzed studies on COPD discharge bundles and noted twenty-six components that could be utilized in various combinations. The care bundle interventions reviewed ranged from two to twelve. To maximize the discharge bundle effect, Ospina et al. (2016) recommend bundling a small number of intervention elements for increased compliance, reliability and consistent care delivery.

Bundle Compliance

Hopkinson et al. (2012) revealed that staff was more compliant with the initiation of the bundle components for the study participants than the usual care group. Bundle compliance was evident in smoking cessation programs (18.2% to 100%), referral to the pulmonary rehabilitation (13.6% to 68%), inhaler usage techniques (59.1% to 91.2%) and self-management planning (54.6% to 97.9%). Similarly, in an observational study by Parikh et al. (2016), compliance improvement was connected to increased inhaler teaching and confirmed post-discharge provider clinical follow-up in comparison to the controlled group. For both Hopkinson et al. (2012) and Parikh et al. (2016), continual education on the care bundle for the staff increased awareness for COPD management guidelines and engagement. Also, both studies found that with increased COPD knowledge their staff's ability to teach, demonstrate and discuss the necessary bundle interventions for COPD outcome success improved.

Hospital Readmission

The definition of COPD readmission is rehospitalization within 30 days of discharge for signs and symptoms of acute exacerbation of COPD (Laverty et al., 2015; Parikh et al., 2016). A review by Ospina et al. (2016) discussed findings that COPD care bundles with targeted

interventions could contribute to reducing hospital readmissions for exacerbation related to

COPD. Hopkinson et al. (2012) analyzed readmissions for 28 to 30 days, which revealed a

downward trend; however, due to the low number of participants, there was no statistical

significance; only recommendations for further studies on COPD care bundles. In the Parikh et

al. (2016) study, the 30 to 60–days readmission rates in the intervention group had a significant

statistical reduction. Shorofsky et al. (2015) noted in their study, a decline in readmissions at the

90-day readmission level over time, possibly due to patients participating in pulmonary

rehabilitation, which was included in the COPD care bundle. Secondarily, the Parikh et al.

(2016) researchers discovered that the organized approach to COPD management reduced the

length of time in the hospital for two days. Patients self-reported in the COPD bundles study by

the British Thoracic Society on increased confidence with self-management skills and

understanding of their medication (Turner, Lim, Rodrigo, Welham, & Calvert, 2015).

Conclusion from the Evidence

Currently, the health care team in the proposed hospital setting has various power plans

based on diagnosis. Implementation of the orders is dependent on the provider to select the

various components in the order set. Due to the acute onset of the clinical problem the focus is

on the acute event and not discharge preparation, education, or self-management skills needed.

Given the results of the studies from the literature review, COPD discharge care bundles

are warranted. Developing discharge care bundles is an innovative approach to supporting the

healthcare challenge of managing a complex chronic disease such as COPD. Status quo

healthcare is no longer acceptable. For hospital systems looking for innovative strategies, a

COPD care bundle that focuses on self-management education will help to ameliorate the unplanned 30-day readmission and costs with readmission penalties.

Conceptual Framework

Self-Efficacy Middle Range Theory and Patient Care

Bandura's self-efficacy theory developed in 1977 is about having confidence or belief in the ability to take action(s) that will lead to achieving expected outcomes (Peterson & Bredow, 2013). Concisely, self-efficacy is human agency over motivation and cognitive resources (Bandura, 1999). The theorist recommends tailoring self-efficacy to a particular function to promote optimal goal achievement from knowledge to the actual integration of skill (Bandura, 2018; Dobkin, 2016). For this QI project, self-efficacy is defined as a behavioral health change that has occurred because of the integration of skills for self-management. Self-efficacy according to Bandura's theory is enhanced by four different information mechanisms: (a) mastery or enactive attainment, which is becoming proficient through repetition in performing a specific task; (b) vicarious experience, is seeing others successfully performing the same function to achieve their outcome; (c) verbal persuasion, is positive reinforcement or motivational encouragement that the set goal can be obtained; (d) physiological feedback, is when individuals evaluate their physiological states such pain, stress, fear, respirations, and pulse rate to determine their abilities (Bandura, 2018; Dobkin, 2016; Wu & Chang, 2014). A quality improvement program that will improve healthcare embedded with principles for Bandura's Self-Efficacy Model (see Appendix A) can lead to a change in health behaviors and improved self-management (Wu & Chang, 2014).

Self-Efficacy and Older Adults

An element to consider regarding self-efficacy in older adults is when they have a high perception of their abilities to execute healthy behaviors they will continue with the changes, and that will reduce their health risks. For older adults, self-efficacy is related to control and increased satisfaction with their ability to manage their health. A person's perception of self-efficacy will determine which activities or situation they engage or avoid (Bandura, 2018).

Authors Zwerink et al. (2014) conducted a systematic review to evaluate whether self - management interventions in COPD lead to improved health outcomes and reduced visits to the hospital. Twenty-nine studies were reviewed with a total of 3189 participants comparing self-management versus usual care. Also included were six studies with 499 participants that compared various self-management elements. Self-management interventions included smoking cessation, self-recognition, and treatment of exacerbation, exercise, nutrition, medication regimen and managing dyspnea (Zwerink et al., 2014). The authors Zwerink et al. (2014) concluded that participants in self-management training had improved health-related quality of life and reduced all-cause readmissions and improved coping with dyspnea. A secondary outcome finding from the review was self-efficacy or increased confidence to manage their health and achieve behavioral changes related to dyspnea (Zwerink et al., 2014).

Self-Efficacy Theory Applied to COPD Discharge Bundle

COPD's level of severity is measured by the patient's ability to breathe thus impacting performance; by including self-efficacy tenets, it may reduce variables of dyspnea disability and enhance the predictability of behavioral health outcomes (Perez et al., 2015). Exercise interventions such as pursed lip breathing a technique used to reduce shortness of breath, improve gas exchange and activity limitations in COPD patients (Borge et al., 2014; Mayer,

Karloh, dos Santos, de Araujo, & Gulart, 2017). Other controlled breathing methods consist of

relaxation exercise, active expiration, diaphragmatic breathing and respiratory muscle training

(Borge et al., 2014; Valenza et al., 2014).

For this quality improvement project, the self-efficacy theory will be used as an

underpinning for the development of a COPD discharge care bundle. It is ineffective to tell

someone about their disease process thinking it will change their behavior (Wu & Chang, 2014).

COPD management requires not only pharmacological but also non-pharmacological options.

Theory-based bundled interventions presented at the clinical bedside will augment the treatment

guidelines for managing COPD (see Appendix B). The key to management and slowing the

disease progression is pulmonary support, education, skills in self-management, transitional or

preparatory programs (Peian et al., 2015).

Model for Change

The development and implementation process of the COPD discharge bundle was guided

by the Model for Improvement Plan-Do-Study-Act which is designed for testing interventions

for change improvement. The project was shared with the hospital's Chief of Quality and Chief

of Nursing and was supported as a quality initiative for improving patient care delivery. The

project leader met with the nursing directors, frontline nurses, clinical nurse specialists, and

clinical transition coordinators to discuss the project, the details for the COPD care bundle and

process. The COPD discharge care bundle design was based on the Hopkinson et al. (2012)

COPD care bundle. The organization did not have a structured education plan for the COPD

patient population. The project leader used evidence-based education materials that already

existed within the system for the nursing staff and organized it into a structured bundle. The

COPD discharge care bundle has two sections in addition to nursing which are respiratory and pharmacy. The project leader met with the leaders from the respiratory and pharmacy departments to outline their collaboration with the COPD discharge care bundle. Following the approval by the Institutional Review Board of the clinical site and Institutional Review Board of the University of Alabama in Huntsville, project implementation began May 1, 2018 (see Appendix C).

Participants

Participants were medical-surgical registered nurses within the age range of 21 to 65 years that work on units with hospitalized COPD male and female patients over the age of 60 years. Participants were recruited from three medical care units (one medical-surgical and two medical-renal) located in a large metropolitan acute care academic hospital in the southeast. The selection process was a non-probability method called convenience sampling of the registered nurses on the units. The project leader (K.G.) utilized recruitment fliers posted on the unit and read the flier in the staff huddle as an announcement (see Appendix D). The project leader was able to recruit 41 registered nurses to participate in the QI surveys. The final sample size for the pre-survey and test was n=24, and sample size for the post-survey and test was n=21.

Instrumentation

Bristol COPD Knowledge Questionnaire. The BCKQ questionnaire was developed by Dr. Roger White (2006) as an outcome measure for patient COPD knowledge (see Appendix E). The project leader has written permission from the author to use the BCKQ instrument (see Appendix F). For this QI project, the BCKQ was used to evaluate the knowledge of the nurses providing COPD disease information and patient education for discharge preparation. The

BCKQ is a multiple-choice survey divided into 13 topics with five questions per section. The topics covered within the survey are epidemiology and physiology, aetiology, common symptoms, breathlessness, phlegm, chest infections, exercise, smoking, immunization, inhaled bronchodilators, antibiotics, oral steroids, and inhaled steroids. It is a valid (Cronbach's alpha 0.73) and reliable tool ($r = 0.71$) appropriate for clinical and research purposes.

Nursing COPD Patient Discharge Education Survey. The project leader, based on the literature review, developed pre-post Likert scale questions covering COPD patient discharge preparedness (see Appendix G). This survey was used to collect pre-post data on nursing's effectiveness to prepare COPD patients for discharge. The amount of time for the participants to complete all surveys pre-post is 20 minutes.

Hospital Readmission Data

The hospital readmission data is available from the clinical agency's Office of Quality. The Office of Quality has internal reports on the hospital's COPD readmission rate per discharging unit. The clinical mentor will provide, for this quality improvement project, the number of readmissions per month for each participating unit. This data will be used to evaluate the clinical outcomes regarding reducing the frequency of hospital COPD readmission pre and post-implementation on the QI project units.

Description of Procedure

After completing a consent form, the registered nurses completed the pre-Bristol COPD Knowledge Questionnaire (BCKQ) and the pre- Nursing COPD Patient Discharge Education Survey. Next, the nurses attended a 30-40-minute education session covering COPD, self-management care and the COPD discharge care bundle (see Appendix H). The education

sessions were conducted over the course of three weeks on the nursing units in their conference room or classroom. The education was delivered by a lecture with the aid of a PowerPoint presentation by the project leader. The nurse received as a handout the COPD discharge care bundle form (see Appendix I). Written permission was obtained from researcher Dr. Hopkinson to utilize the COPD care bundle as a template design for this quality improvement project (see Appendix J).

The COPD discharge care bundle process began after all education sessions were completed. Copies of the COPD discharge care bundle were made, placed in a blue folder at the nursing station in a labeled COPD Quality Project bin. The COPD discharge care bundle has three sections: (a) nursing, (b) respiratory, and (c) pharmacy. The charge nurse on each unit is responsible for receiving calls from bed management for all patient admissions to the unit. When the registered nurse received a call from the charge nurse regarding a COPD patient admission, that nurse would pick up the COPD discharge bundle form and attach it to the patient report sheet. The nursing units used a patient report sheet that was a part of the handoff process between the nurses during their bedside shift report at each shift change. Beginning on day one of admission, the nurses started the components of the COPD discharge care bundle self-management education under the nursing section. An additional notification that a COPD patient was admitted to one of the three units in the QI project came from the clinical pharmacist. The clinical pharmacist received an electronic notification based on the diagnosis code used during admission.

The nurses in care partnership with a respiratory therapist and clinical pharmacist completed their contributory bundle components. The nurses were responsible for (a) smoking

cessation, (b) supplemental nutrition consult, (c) self-management education related to control of breathing, (d) other education covering what is COPD, nutrition and discharge instruction. On the day of discharge, the nurse reviewed a COPD safe discharge check which included oxygen ambulation assessment, physician follow-up appointment, and oxygen tank for travel home. The respiratory therapist process did not change: they continued to receive their notification of COPD admissions through the physician order sets and provide inhaler education under their component. The clinical pharmacist for the nursing units in the QI project received an electronic report for COPD admissions generated by the physician's orders. The clinical pharmacist was responsible for completing the pharmacy section of the bundle which included (a) review of medication history, (b) follow up with a physician for medication adjustments, (c) provide education on all medications including inhalers and (d) teach-back with discharge inhaler medication. After the patient is discharged, the nurse placed the COPD discharge care form with the patient's initials into a labeled return bin located in the nursing station. During the implementation, the project leader made daily rounds to answer questions, pick up and replenish the COPD discharge care bundle forms. Six to eight weeks after the project implementation the nurses completed a post-Bristol COPD Knowledge Questionnaire (BCKQ) and post-Nursing COPD Patient Discharge Education Survey.

Results

Forty-one registered nurses (RNs) were recruited, and 24 nurses completed the pre-surveys with a response rate of 59%. The Pre-Nursing COPD Patient Discharge Education Survey was quantified based on the Likert scale. The pre-questions were designed to evaluate the nurses' current practice and structure for discharging COPD patients. Twenty-four of the 41

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recruited RNs completed the survey of seven questions, on a scale of 1-5, in which 1= very

rarely, 2=rarely, 3=occasionally, 4= frequently and 5=very frequently. Table 1 summarizes the

pre-survey descriptive statistics of the participant's responses for questions one to seven.

Twenty-one of the recruited nurses completed the Pre-Post Bristol COPD Knowledge

Questionnaire (BCKQ). A paired *t*-test was used to analyze the pre and post-test results. The

mean score for the pre-test group was 62%, and after the education, the post group scored 70%

which is indicative of increased knowledge. The p=0.061 indicates no statistical value, but for

the post, group means the clinical significance is increased knowledge related to COPD

discharge preparedness (see Table 2).

The Post-Nursing COPD Patient Discharge Education Survey was quantified based on

the Likert scale and completed by 21 nurses. In addition to the Likert scale questions, the project

leader asked, "within the last four to six weeks have you cared for a COPD patient?" The

percentage of RNs (n=21) that responded to the question, "within the last four to six weeks have

you cared for a COPD patient?" Yes = 43%, no=33% and no response = 24%. The relevance of

this question was to measure how many RNs during the implementation had the opportunity to

utilize the discharge bundle on a patient. Fifty-seven percent of the registered nurses (n=21)

stated that they had taken care of a COPD patient during the quality improvement project.

However, for those that did not have a COPD patient in their care, they were able to provide

feedback on the bundle tool based on their professional experience. During the implementation

period, 20 patients were admitted with COPD exacerbation, and the RNs utilized the structured

COPD discharge bundle on 18 patients to support their preparation for discharge. Two of the 20

patients were dropped due to oversight over the holiday, and the other was a patient that

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transitioned to hospice. The clinical pharmacist was able to execute their new process as described earlier, which helped to close the self-management discharge preparation education loop.

Eight post survey questions were designed on a Likert scale of one to four, in which 1=not confident, 2= somewhat confident, 3=confident, and 4=very confident. The focus of the questions was to evaluate if the nurses had the confidence to effectively prepare a COPD patient for discharge post the project's implementation. The post Nursing COPD Patient Discharge Education Survey asked the nurses to rate their confidence in using the COPD bundle education in eight categories. For question one (Q-1), the nurses' responses showed 65% (n=21) noted they were confident in starting to educate COPD patients on the disease. The respondents were 55% confident and 25% very confident with (Q-5), dyspnea management and breathing exercise education. Providing education on reducing shortness of breath (Q-6), 55% confident and 25% very confident. Respondents for (Q-7) seeking nutritional supplements and consultation were, 40% are confident, and 40% are very confident. Table 3 shows the post-survey descriptive data of the evaluator's responses for questions one to seven. The QI project COPD discharge care bundle was completed on 18 patients. According to the hospital's monthly readmission unit report, three patients out of the 18 were readmitted during the project. The readmission rate for the quality improvement COPD patients was 17% (see Appendix K).

Discussion

Acute COPD exacerbations have led to hospital recidivism with burdensome healthcare cost (Khan, Dickens, Adab, & Jordan, 2017). Throughout the literature, researchers do not have a definitive content list of which self-management interventions or care bundles that should be

used to support and manage COPD. Zwerink et al. (2014) systematic review of COPD revealed that self-management interventions or care bundles could improve COPD outcomes and health status. COPD education is enhanced with health care providers working in collaboration with the patient (GOLD, 2018). The COPD Discharge Care Bundle developed and implemented consisted of three sections initiated by nursing, respiratory and pharmacy in a similar design outlined in the Hopkinson et al. (2012) study.

Before this QI project, the nurses did not have a structured educational approach for COPD patients that focused on evidence and national standards as outlined in GOLD (2018). The interprofessionals operated in silos, not aware of their collective contributing work toward COPD patient discharge preparation. A pre-survey evaluation question asked the nurses, "how often do you educate COPD patients on their disease and self-management plans within 24 hours of admission?" The responses were 46% occasionally (n=24) and 25% frequently (n=24). The education conducted increased nurses' awareness of their role as supporters, advocators, and coaches for COPD self-management in conjunction with other health professionals. The clinical pharmacist teaching at bedside was a new element for discharge preparation specific to the QI project provided by the hospital leadership. The clinical pharmacist worked to place the prescribed medications in the patient's hand before discharge. The clinical pharmacist specifically targeted medication reconciliation and provided real-time teaching using the teach-back methodology with the actual inhalers and medications the patient will take home.

The COPD discharge bundle interprofessionals are responsible for the educational teaching for discharge planning which starts upon admission and continues throughout hospitalization. Clinical nurses are responsible for discharge planning which encompasses

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teaching and assessment of needs. On the day of discharge, it is the nurse that is best suited to communicate the patient's level of discharge preparedness to the care team. The interprofessional concept of the bundle supports the GOLD (2018) recommendation to have interactions of the health care providers in preparing the COPD patient with self-management skills for post-discharge.

The BCKQ post-test score of 70% compared to the BCKQ pre-test score of 62% demonstrated increased knowledge which supports the findings from Hopkinson et al. (2012); Parikh et al. (2016) that continual bundle education for staff will increase their ability to teach and support the COPD patient. Between six to eight weeks after the bundle implementation, the post-Nursing COPD Patient Discharge Education Survey was given and based on the nurses' responses 65% (n=21) noted they were confident. Question number five asked, for their ability to teach dyspnea management and breathing exercises 55% were confident (n=21) and 25% (n=21) very confident. Nurses responded that they were 55% (n=21) confident and 25% (n=21) very confident with providing education on how to reduce shortness of breathing. These are essential elements for self-management or care bundle components that contribute to improved COPD outcomes discussed in research studies (Hopkinson et al.,2012; Khan et al., 2017; Laverty et al., 2015; Parikh et al., 2016); systematic reviews (Ospina et al., 2016; Zwerink et al., 2014) and COPD guidelines by GOLD (2018).

The readmission occurrences for the three units combined from April 2017 through May 2018 were 21 patient readmissions. During the QI project from May to August 2018, the COPD Discharge Care Bundle was initiated on 18 patients. Out of the 18 patients per the hospital's COPD readmission report, three patients were readmitted from the participating medical units.

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The readmission rate for the QI project was 17%, indicating a clinical significance compared to the national COPD readmission rate of 20% for 30-day readmissions (Rinne et al., 2017; Zhang, Higgins, Wongtrakool, Yang, & Sadikot, 2018). These findings of reduced readmissions are very similar to the reported outcomes by researchers Hopkinson et al. (2012). In their study, there was no statistical significance due to the small study size, but it was a clinical improvement due to the utilization of evidence-based strategies. In Ospina et al. (2016) systematic review, their findings discussed that targeted interventions such as care bundles could be contributing factors for reducing COPD exacerbation readmissions. The findings of this quality improvement project show that with a structured educational COPD Discharge Care Bundle process it has clinical implications to increased nursing knowledge on COPD, increased confidence and effectiveness to provide evidence-based self-care management education and skills in partnership with other healthcare professionals. The COPD care bundle improved the readmission occurrence outcomes.

Limitations of the quality improvement project included a small nursing participant sample size and the length of time for the project. COPD patients admitted to the unit were identified through bed management and the clinical pharmacist's report. In the results and discussion section, the hospital readmission occurrence was reviewed by their internal report and the patients touched by the COPD care bundle. For further studies, the team will need to evaluate all possibilities of identifying COPD patients within the health system. The number of questions in the Bristol COPD Knowledge Questionnaire made it a lengthy pre-and post-test for the participants with limited time while working on the unit. Due to the design of the project, the professional disciplines (nursing, respiratory and pharmacy) were not followed as they taught or

implemented the bundle components with the patients throughout their hospitalization. A follow-up QI project would be to evaluate the COPD patients and their responses to the care bundle.

Implication for Practice

Dyspnea is the most prevalent and debilitating symptom of COPD which is why it is the focal point for clinical COPD management (Criner et al., 2015; Harris, 2016). COPD is associated with increased mortality rates and fourth among the list of chronic diseases in the cycle of recidivism (Krishnan et al., 2015; Parikh et al., 2016; Shah et al., 2016). Innovative approaches to improve patient care delivery and clinical outcomes should be considered in the management of chronic diseases that require a patient to own their health management and make behavioral changes (Braman, 2015; Harris, 2016). A COPD discharge care bundle will improve interprofessional communication and collaboration with patients. The COPD care bundle approach developed and implemented as a quality improvement on three medical units has clinical significance to support COPD self-care management skills and reduce readmissions. The bundle will provide the nursing staff with a structured process for ensuring patient education and discharge preparedness. The COPD discharge care bundle will benefit the hospital by improving patient care outcomes, reducing COPD readmission rates and hospital CMS penalties related to less than 30-day readmission rates.

Conclusion

Developing and implementing a COPD discharge care bundle for self-management education is an innovative approach to supporting the healthcare challenge of managing complex chronic diseases such as COPD. Registered nurses and other clinical healthcare providers such

as respiratory therapists and clinical pharmacists are essential partners in the promotion of COPD self-management skills. Doctorally prepared advanced practice nurses trained in population health, change management, program evaluation, evidence-based practice, and system leadership can transform the delivery of health care and its environment. The objective of this DNP scholarly project was to improve nursing's effectiveness in preparing soon-to-be discharge COPD patients with self-management skills that will translate into improved COPD health care outcomes and reduced readmissions. The nurse's responses to the post-survey revealed an acceptance of the structured COPD discharge bundle and increased confidence to provide self-management education. The QI readmission rate was lower (17%) than the national COPD readmission (20%). Patients and families need health care models and strategies provided in a manner that is safe, timely, effective and efficient to facilitate a successful transition from hospital to home thereby improving behavioral health changes and reducing recidivism.

Scope

The *American Journal of Nursing* (*AJN*) is the oldest and most honored broad-based nursing journal. The American Journal of Nursing is listed as one of the most influential nursing journals. The journal publishes monthly and follows journalistic standards that require transparency of real and potential conflicts of interest that authors and editors may have. The AJN welcomes submissions of evidence-based clinical application, best practices, research, case studies, narratives and quality improvement reports.

Aim

The mission of *AJN* is to promote excellence in nursing and healthcare through the dissemination of evidence-based and peer-reviewed professional clinical information to their readers. The *AJN* adheres to the journalistic integrity and excellence, and promotion of nursing perspectives to the health care community and the public. The *American Nursing Journal* was chosen based on their history of discussing and presenting new health care innovations and clinical issues in nursing that can positively impact patient populations and public health. This manuscript will discuss the necessity for innovative healthcare delivery methods that is evidenced based such as COPD care bundles. The literature review conducted revealed that bundled COPD interventions with self-management skills can reduce hospital readmission. This quality improvement project has clinical significance which is fostered through improved discharge preparedness with self-management skills, COPD disease process education and change in health management behaviors. Submission of the manuscript is based on the author guidelines of the *American Journal of Nursing*.

Chronic Obstructive Pulmonary Disease (COPD) Discharge Care Bundle: Self-Management

Education

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Table 1

Pre-Nursing COPD Patient Discharge Education Survey

Questions	Total	Very Frequently	Frequently	Occasionally	Rarely	Very rarely	Total
1. How often do you educate COPD patients on their disease, and self-management plan within 24 hours of admission?	24	8%	25%	46%	13%	8%	100 %
2. How often do you offer a currently smoking COPD patient a cessation plan?	24	17%	21%	33%	25%	4%	100%
3. How often do you evaluate if the COPD patient can demonstrate use of inhalers?	24	8%	8%	21%	42%	21%	100%
4. How often do you provide education on dyspnea management and breathing exercises?	24	13%	21%	42%	25%	0%	100%
5. How often do you provide education on how to reduce shortness of breath?	24	17%	29%	42%	13%	0%	100%
6. How often do you request a nutritional consult for COPD patients?	24	0%	13%	25%	42%	21%	100%
7. How often are your COPD patients on home oxygen re-evaluated for their oxygen requirements during discharge?	24	25%	33%	25%	8%	8%	100%

Table 2

t-paired Pre-Post Bristol COPD Knowledge Questionnaire Results

	Pretest	Posttest
Mean	62.14285714	69.57142857
Variance	136.5285714	176.7571429
Observations	21	21
Pooled Variance	156.6428571	
Hypothesized Mean Difference	0	
Df	40	
t Stat	-1.923289476	
P(T<=t) one-tail	0.030791118	
t Critical one-tail	1.683851013	
P(T<=t) two-tail	0.061582236	
t Critical two-tail	2.02107539	

Table 3

The Post-Nursing COPD Patient Discharge Education Survey

Questions	Total	Very confident	Confident	Somewhat confident	Not confident	Total
2. How confident are you post the COPD bundle education in your ability to start educating COPD patients on their disease, and self-management plan within 24 hours of admission?	20	15%	65%	20%	0%	100%
3. How confident are you post the COPD bundle education to offer a currently smoking COPD patient a cessation plan?	20	20%	55%	20%	5%	100%
4. How Confident are you post the COPD bundle education in evaluating a COPD patient can demonstrate use of inhalers?	20	10%	50%	35%	5%	100%
5. How confident are you post the COPD bundle education in providing education on dyspnea management and breathing exercises?	20	25%	55%	15%	5%	100%
6. How confident are you post the COPD bundle education providing education on how to reduce shortness of breath?	20	25%	55%	20%	0%	100%
7. How confident are you post the COPD bundle education at requesting a nutritional consult for COPD patients?	20	40%	40%	20%	0%	100%
8. How confident are you post the COPD bundle education at evaluating if your COPD patients have home oxygen requirements during discharge?	20	35%	45%	15%	5%	100%

Appendix A

Bandura's Self-Efficacy Theory (Fahey & Mcloughlin, 2015)
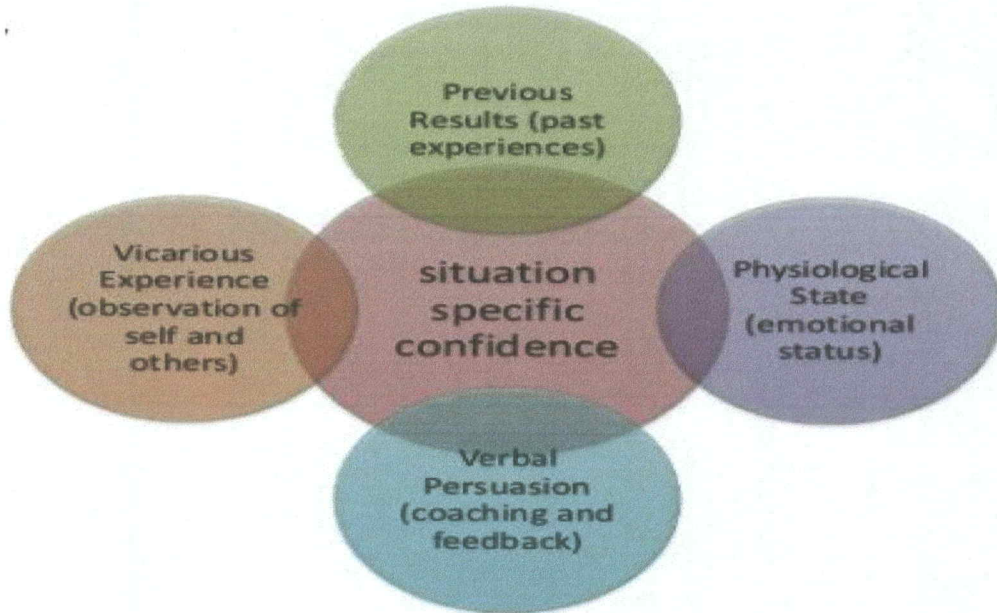
Appendix B

Concept Map for Applying Self-efficacy to COPD Discharge Care Bundle
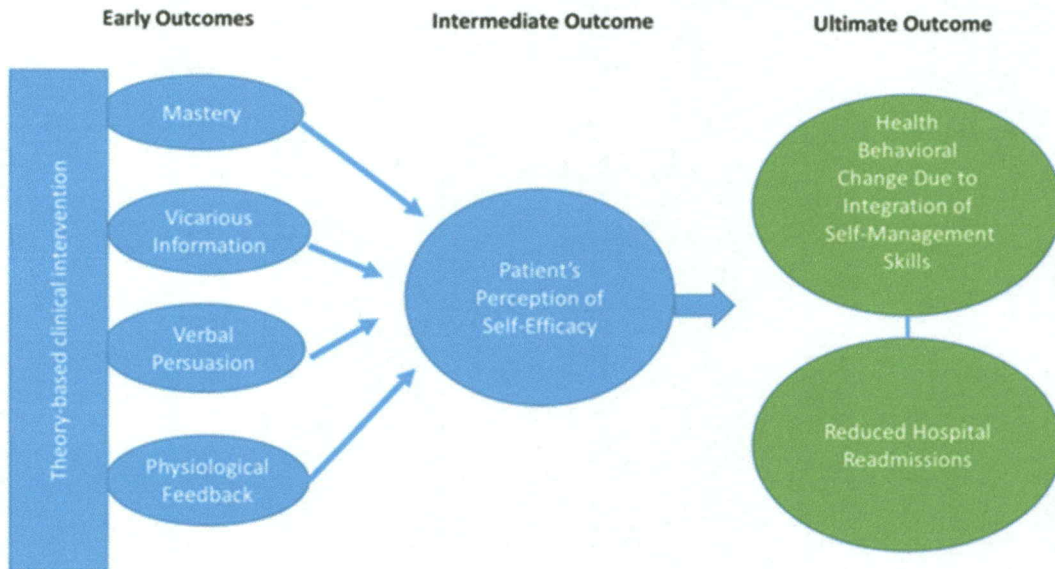
Appendix C

Institutional Review Board Approval Clinical Site and University of Alabama in Huntsville

EMORY UNIVERSITY | Institutional Review Board

February 22, 2018

Kimberly Graham, MSN, APRN, ACNS-BC
Clinical Nurse Specialist-General Medicine
Emory University Hospital Midtown -Unit 61
Office 404-686-6915
Hospital Cell 404 -354-9444

RE: **Determination: No IRB Review Required**
Title: *COPD Discharge Care Bundle: Self-Management Education*
PI: Kimberly Graham MSN, APRN, ACNS-BC

Dear Kimberly Graham:

Thank you for requesting a determination from our office about the above-referenced project. Based on our review of the materials you provided, we have determined that it does not require IRB review because it does not meet the definition of "research" with human subjects or "clinical investigation" as set forth in Emory policies and procedures and federal rules, if applicable. Specifically, this proposal is designed to test the effectiveness of a COPD discharge care bundle, at Emory Midtown medical surgical unit, that will increase nursing's effectiveness to prepare the soon to be discharged COPD patient with self-management skills that will improve clinical care outcomes and reduce hospital. This project is not intended to apply to anyone beyond the scope of the project and the conclusions will be related only to Emory Midtown. The shared results will be regarding improvement practice only, will not draw broad conclusions, and will not use participants as a representative sample. No identifiers or protected health information will be obtained. Based on this information, IRB review is not required.

Please note that this determination does not mean that you cannot publish the results. This determination could be affected by substantive changes in the study design, subject populations, or identifiability of data. If the project changes in any substantive way, please contact our office for clarification.

Thank you for consulting the IRB.

Sincerely,

Anisha Easley

Anisha Easley, MPH
Research Protocol Analyst
Anisha.easley@emory.edu

March 29ᵗʰ 2018

Kimberly Graham
Department of Nursing
University of Alabama in Huntsville

| ☒ Expedited (see pg 2) |
| ☐ Exempted (see pg 3) |
| ☐ Full Review |
| ☐ Extension of Approval |

Dear Ms. Graham,

The UAH Institutional Review Board of Human Subjects Committee has reviewed your proposal, *COPD Discharge Care Bundle: Self-Management Education*, and found it meets the necessary criteria for approval. Your proposal seems to be in compliance with this institutions Federal Wide Assurance (FWA) 00019998 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Please note that this approval is good for one year from the date on this letter. If data collection continues past this period, you are responsible for processing a renewal application a minimum of 60 days prior to the expiration date.

No changes are to be made to the approved protocol without prior review and approval from the UAH IRB. All changes (e.g. a change in procedure, number of subjects, personnel, study locations, new recruitment materials, study instruments, etc) must be prospectively reviewed and approved by the IRB before they are implemented. You should report any unanticipated problems involving risks to the participants or others to the IRB Chair.

If you have any questions regarding the IRB's decision, please contact me.

Sincerely,

Bruce Stallsmith
IRB Chair
Professor, Biological Sciences

OFFICE OF THE VICE PRESIDENT FOR RESEARCH
Von Braun Research Hall M-17   Huntsville, AL 35899   T 256.824.6100   F 256.824.6783

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Expedited:

☐ Clinical studies of drugs and medical devices only when condition (a) or (b) is met. (a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review. (b) Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

☐ Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows: (a) from healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or (b) from other adults and children, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

☐ Prospective collection of biological specimens for research purposes by noninvasive means. Examples: (a) hair and nail clippings in a nondisfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.

☐ Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications).

☐ Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis).

☐ Collection of data from voice, video, digital, or image recordings made for research purposes.

☒ Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Recruitment Flier

Attention

Registered Nurses

➤ You are invited to participate in a project study being conducted in partial fulfillment of the Doctor of Nursing Practice Degree.

➤ The purpose of the study is to implement a chronic obstructive pulmonary disease (COPD) discharge care bundle that will increase nursing's effectiveness to prepare the soon to be discharged COPD patient with self-management skills that will improve clinical care outcomes and reduce hospital readmissions.

➤ Participants will complete a pre/post knowledge test on COPD and a brief nursing survey on COPD patient education. Attend education sessions on COPD and the utilization of the COPD discharge care bundle.

If you have questions regarding the study, please contact

Kimberly Graham, MSN, ACNS-BC
Doctor of Nursing Practice Candidate
University of Alabama in Huntsville
klg0027@uah.edu

Bristol COPD Knowledge Questionnaire (BCKQ)

NHS BRISTOL COPD KNOWLEDGE QUESTIONNAIRE (BCKQ)©

Name: _____   Date: _____

Thank you for your participation in the BCKQ questionnaire. This questionnaire will assess care provider's teaching knowledge for COPD patients.

Fill in the circle that corresponds to your answer. This questionnaire takes between 10 to 20 minutes to complete.

1	In COPD:	True	False	Don't Know
a	In COPD the word "chronic" means it is severe.	○	○	○
b	COPD can only be confirmed by breathing tests.	○	○	○
c	In COPD there is usually gradual worsening over time.	○	○	○
d	In COPD oxygen levels in the blood are always low.	○	○	○
e	COPD is unusual in people less than 40 years old.	○	○	○

2	COPD:	True	False	Don't Know
a	More than 80% of COPD cases are caused by cigarette smoking.	○	○	○
b	COPD can be caused by occupational dust exposure.	○	○	○
c	Longstanding asthma can develop into COPD	○	○	○
d	COPD is commonly an inherited disease.	○	○	○
e	Women are less vulnerable to the effects of cigarette smoking than men.	○	○	○

3	The following symptoms are COMMON in COPD:	True	False	Don't Know
a	Swelling of ankles	○	○	○
b	Fatigue (tiredness)	○	○	○
c	Wheezing	○	○	○
d	Crushing chest pain	○	○	○
e	Rapid weight loss	○	○	○

4	Breathlessness in COPD:	True	False	Don't Know
a	Severe breathlessness prevents travel by air.	○	○	○
b	Breathlessness can be worsened by eating large meals.	○	○	○
c	Breathlessness means that your oxygen levels are low.	○	○	○
d	Breathlessness is a normal response to exercise.	○	○	○
e	Breathlessness is primarily caused by a narrowing of the bronchial tubes.	○	○	○

5 Phlegm (sputum):

		True	False	Don't Know
a	Coughing phlegm is a common symptom in COPD	○	○	○
b	Clearing phlegm is more difficult if you get dehydrated.	○	○	○
c	Bronchodilator inhalers can help clear phlegm.	○	○	○
d	Phlegm causes harm if swallowed.	○	○	○
e	Clearing phlegm can be assisted by breathing exercises.	○	○	○

6 Chest infections / exacerbations:

		True	False	Don't Know
a	Chest infections often cause coughing of blood.	○	○	○
b	With chest infections phlegm usually becomes coloured (yellow or green).	○	○	○
c	Exacerbations (episodes of worsening) can occur in the absence of a chest infection.	○	○	○
d	Chest infections are always accompanied by a high temperature.	○	○	○
e	Steroid tablets should be taken whenever there is an exacerbation.	○	○	○

7 Exercise in COPD:

		True	False	Don't Know
a	Walking is better exercise than breathing exercises to improve fitness.	○	○	○
b	Exercise should be avoided as it strains the lungs.	○	○	○
c	Exercise can help maintain your bone density.	○	○	○
d	Exercise helps relieve depression.	○	○	○
e	Exercise should be stopped if it makes you breathless.	○	○	○

8 Smoking:

		True	False	Don't Know
a	Stopping smoking will reduce the risk of heart disease.	○	○	○
b	Stopping smoking will slow down further lung damage.	○	○	○
c	Stopping smoking is pointless as the damage is done.	○	○	○
d	Stopping smoking usually results in improved lung function.	○	○	○
e	Nicotine replacement therapy is only available on prescription.	○	○	○

9 Vaccination:

		True	False	Don't Know
a	A flu vaccine is recommended every year.	○	○	○
b	You can get flu from having a flu vaccine.	○	○	○
c	You can only have a flu vaccine if you are 65 or over.	○	○	○
d	A pneumonia vaccine protects against all forms of pneumonia.	○	○	○
e	You can have a pneumonia jab and a flu vaccine on the same day.	○	○	○

10	Inhaled brochodilators:	True	False	Don't Know
a	All bronchodilators act quickly (within 10 minutes).	○	○	○
b	Both short and long acting bronchodilators can be taken on the same day.	○	○	○
c	Spacers (e.g. volumatic, nebuhaler, aerochamber) should be dried with a towel after washing.	○	○	○
d	Using a spacer device will increase the amount of drug deposited in the lungs.	○	○	○
e	Tremor may be a side effect of bronchodilators.	○	○	○

11	Antibiotic treatment in COPD:	True	False	Don't Know
a	To be effective, the course should last at least 10 days.	○	○	○
b	Excessive use of antibiotics can cause resistant bacteria (germs).	○	○	○
c	Antibiotics will clear all chest infections.	○	○	○
d	Antibiotic treatment is necessary for an exacerbation (worsening) however mild.	○	○	○
e	You should seek advice if antibiotics cause severe diarrhoea.	○	○	○

12	Steroid tablets given for COPD (eg Prednisolone):	True	False	Don't Know
a	Steroid tablets help strengthen muscles.	○	○	○
b	Steroid tablets should be avoided if there is a chest infection.	○	○	○
c	The risk of long-term side effects due to steroids is less with short courses than with continuous treatment.	○	○	○
d	Indigestion is a common side effect from using steroid tablets.	○	○	○
e	Steroid tablets can increase your appetite.	○	○	○

13	Inhaled steroids (brown, red or orange):	True	False	Don't Know
a	Inhaled steroids should be stopped if you are given steroid tablets.	○	○	○
b	Steroid inhalers can be used for rapid relief of breathlessness.	○	○	○
c	Spacer devices reduce the risk of getting thrush in the mouth.	○	○	○
d	Steroid inhaler should be taken before your bronchodilator.	○	○	○
e	Inhaled steroids improve lung function in COPD.	○	○	○

Appendix F

BCKQ Permission Communication

THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Kimberly Graham <klg0027@uah.edu>

requesting permission to use the Bristol COPD Knowledge Questionnaire
4 messages

Kimberly Graham <klg0027@uah.edu>
To: roger.white4@virgin.net

Tue, Aug 15, 2017 at 11:23 PM

Good evening Dr. Roger White,

I am currently enrolled in a Doctorate of Nursing Practice (DNP) program at the University of Alabama in Huntsville. The clinical focus for my DNP study project is on improving COPD patient self-management skills and reducing hospital readmissions. The Bristol COPD Knowledge Questionnaire (BCKQ) would work well as a study instrument. May I have access and permission to use the BCKQ? Is there a cost for the utilization of the survey? Thank you for your time and attention to this matter.

Sincerely,

Kimberly Graham, MSN, APRN, ACNS-BC

Adult Health Clinical Nurse Specialist

klg0027@uah.edu

Roger White <roger.white4@virgin.net>
To: Kimberly Graham <klg0027@uah.edu>

Wed, Aug 16, 2017 at 3:33 AM

Good morning Kimberley

I attach a copy of BCKQ for your use. There is no cost.

Hope your study goes well

Kind regards

Roger White

From: Kimberly Graham [mailto:klg0027@uah.edu]
Sent: 16 August 2017 04:23
To: roger.white4@virgin.net
Subject: requesting permission to use the Bristol COPD Knowledge Questionnaire

[Quoted text hidden]

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https://mail.google.com/mail/?ui=2&ik=d4ed545d1b&jsver=c6entt0uZCQ.en.&view=pt&q...   3/2/2018

📄 BCKQ130906 v.2.pdf
53K

Kimberly Graham <klg0027@uah.edu>   Wed, Aug 16, 2017 at 5:08 AM
To: Roger White <roger.white4@virgin.net>

Good Morning Dr. White,

Thank you, Dr. White, for sharing the information and tool. I will ensure that your tool is credited and referenced appropriately. My DNP project will begin this fall semester – the development and implementation of a COPD discharge care bundle on a medical acute care unit. Thank you again for your support regarding utilization of the BCKQ tool.

Sincerely,

Kimberly Graham, MSN, APRN, ACNS-BC

Adult Health Clinical Nurse Specialist

klg0027@uah.edu

[Quoted text hidden]

Kimberly Graham <klg0027@uah.edu>   Wed, Aug 16, 2017 at 5:10 AM
To: Lenora Smith <lws0003@uah.edu>

Good Morning Profesor Smith,

I have received permission to use the BCKQ study instrument.
[Quoted text hidden]

📄 BCKQ130906 v.2.pdf
53K

Pre and Post Nursing Discharge COPD Survey

ID_____

Pre-Nursing COPD Patient Discharge Education Survey

Please circle, the response that best answers the questions specific to the discharge preparation of COPD patients. Response options are 1= very rarely, 2= rarely, 3= occasionally, 4= frequently, and 5= very frequently

Demographics:

Select your work shift: a. 7a -7p b. 7p-7a	Number of years working as a RN_____
Level of nursing degree: a. ADN b. BSN c. MSN d. DNP/Ph.D.	Gender: a. male b. female

	Very Rarely	Rarely	Occasionally	Frequently	Very Frequently
1. How often do you educate COPD patients on their disease, and self-management plan within 24 hours of admission?	1	2	3	4	5
2. How often do you offer a currently smoking COPD patient a cessation plan?	1	2	3	4	5
3. How often do you evaluate if the COPD patient can demonstrate use of inhalers?	1	2	3	4	5
4. How often do you provide education on dyspnea management and breathing exercises?	1	2	3	4	5
5. How often do you provide education on how to reduce shortness of breath?	1	2	3	4	5
6. How often do you request a nutritional consult for COPD patients?	1	2	3	4	5
7. How often are your COPD patients on home oxygen reevaluated for their oxygen requirements during discharge?	1	2	3	4	5

Post-Nursing COPD Patient Discharge Education Survey

Please circle, the response that best answers the questions specific to the discharge preparation of COPD patients.
Response options are 1= not confident, 2= somewhat confident, 3= confident, 4= very confident

1. Within the last four to six weeks have you cared for a COPD patient? YES or NO				
	Not Confident	Somewhat Confident	Confident	Very Confident
2. How confident are you post the COPD bundle education in your ability to start educating COPD patients on their disease, and self-management plan within 24 hours of admission?	1	2	3	4
3. How confident are you post the COPD bundle education to offer a currently smoking COPD patient a cessation plan?	1	2	3	4
4. How confident are you post the COPD bundle education in evaluating a COPD patient can demonstrate use of inhalers?	1	2	3	4
5. How confident are you post the COPD bundle education in providing education on dyspnea management and breathing exercises?	1	2	3	4
6. How confident are you post the COPD bundle education providing education on how to reduce shortness of breath?	1	2	3	4
7. How confident are you post the COPD bundle education at requesting a nutritional consult for COPD patients?	1	2	3	4
8. How confident are you post the COPD bundle education at evaluating if your COPD patients have home oxygen requirements during discharge?	1	2	3	4

Appendix H

Staff Teaching Plan

COPD Discharge Care Bundle Teaching/Learning Plan for Staff

Teaching Objectives	Teaching Strategies	Resources	Assessment/Learner Evaluation	Improvement Measures
Upon completion of the education session the learner will be able to: ➤ Discuss COPD and the disease process ➤ Explain the RN's role in preparing the COPD patient for discharge with self-management skills ➤ Describe techniques and exercises that can help reduce dyspnea ➤ Identify signs and symptoms that warrant emergency help for COPD patients ➤ Explain the importance of nutrition for the COPD ➤ Discuss the importance of medications and using the inhaler appropriately ➤ Apply the COPD self-management discharge care bundle	Live classes using power point case study and review questions	*A guide for people with chronic lung disease.* (2016). Pritchett and Hull. Krames (2017). Krames electronic patient education Lenferink, A., Brusse-Keizer, M., van der Valk, P. D., Frith, P. A., Zwerink, M., Monninkhof, E. M., . . . Effing, T. W. (2017). Self-management interventions including action plans for exacerbations versus usual care in patients with chronic obstructive pulmonary disease. *Cochrane Database Syst Rev, 8,* Cd011682. doi:10.1002/14651858.CD011682.pub2 Lopez-Campos, J. L., Tan, W., & Soriano, J. B. (2016). Global burden of COPD. *Respirology, 21*(1), 14-23. doi:10.1111/resp.12660 Ospina, M. B., Mrklas, K., Deuchar, L., Rowe, B. H., Leigh, R., Bhutani, M., & Stickland, M. K. (2016). A systematic review of the effectiveness of discharge care bundles for patients with COPD. *Thorax,* thoraxjnl2016-208820 van Eerd, E. A., van der Meer, R. M., van Schayck, O. C., & Kotz, D. (2016). Smoking cessation for people with chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*(8), Cd010744. doi:10.1002/14651858.CD010744.pub2	Pre-and post-nursing survey on COPD discharge preparation, patient education and knowledge	Pre-and postsurvey comparison Increased nursing knowledge regarding COPD and discharge preparedness

COPD Discharge Care Bundle

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) DISCHARGE CARE BUNDLE

Patient Initials _____

CARE BUNDLE STEPS

Nursing

Start on Admission

1. If patient is a smoker offer smoking cessation assistance
- Smoking cessation plan ☐
- Smoking cessation **Ready to Quit book** ☐
- Patient refused ☐

2. Nutrition Consult ☐
- Supplemental nutrition ordered ☐

3. Written COPD patient information discussed including :
- A guide for people with Chronic Lung Disease (To Air is Human book)
  - Use teach back to educate on control of your breathing p39 – 42 ☐ ☐
  - Use teach back to educate on breathing exercises p54 – 59 ☐
  - Use teach back to educate on ways to conserve energy p50-51 ☐
- Use Kramer COPD patient education materials in depart
  - What is COPD? ☐
  - Discharge instructions COPD ☐
  - Good nutrition for chronic lung disease ☐

Respiratory

4. Respiratory Therapy ☐
- Discuss inhaled medications
- MDI - Instructions on spacer device and/or inhaler technique

Pharmacy

5. Pharmacy ☐
- Review of medication history
- Review of inhalers
- Follow up with HMS team for medication adjustments
- Teach back with discharge inhaler medication

DAY OF DISCHARGE

COPD Safe Discharge

O2 _____ L on admission

**O2 _____ L on discharge

Oxygen ambulation assessment completed ☐

Patient has follow up MD apt ☐

Patient has O2 tank for home ☐

Nurse (Initials) [_____]

Date: ___/___/___

A guide for people with chronic lung disease. (2018). Pritchet and Hull.

Hopkinson, N. S., Engemoresen, C., Cooley, N., Kennie, K., Lim, M., Woodcock T... Lal, D. (2012). Designing and implementing a COPD discharge care bundle. Thorax, 67(1), 90-92. doi:10.1136/thoraxjnl-2011-200233

Kramer electronic patient education (2017).

Ospina, M. B., Mrklas, K., Deuchar, L., Rowe, B. H., Leigh, R., Shulani, M., & Stickland, M. K. (2016). A systematic review of the effectiveness of discharge care bundles for patients with COPD. Thorax, thoraxjnl-2016-208820.

Do not place in patient's chart. Upon discharge return to the project folder at the nursing station.

Appendix J

COPD Bundle Discharge Care Bundle Written Permission

📄 **Appendix 2 - 3 day phone-call script.doc**
41K

📄 **Appendix 1 COPD SAFE Discharge Checklist.doc**
39K

Kimberly Graham <klg0027@uah.edu>   Tue, Aug 8, 2017 at 8:52 PM
To: "Hopkinson, Nick S" <n.hopkinson@imperial.ac.uk>

Thank you so much!
[Quoted text hidden]

Quality Improvement Project COPD Readmission Rate

Medical –Surgical Unit, Medical Unit A and Unit B COPD Patients

Med-Surg Unit , Unit A and Unit B
number of COPD patient admissions, completed bundles and readmissions

■ COPD Patients