Provision of Asthma Action Plans in the Primary Care Setting: A Team-Based Approach

by

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Acknowledgement

This project was inspired by my passion to provide the best care to my patients. Healthcare is a service oriented profession which allows me to demonstrate my God given gifts on a daily basis. I truly believe quality patient care is best accomplished by including the unique skills of all members of the healthcare team, with the patient in the center of this circle. My organization's journey to becoming a Patient Centered Medical Home has met many hurdles, but in the end, has improved the quality of health for the patients we serve.

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Abstract

Improved outcomes for patients with asthma have been demonstrated through the use of written asthma action plans [AAPs] (Gibson et al., 2008). Despite the research and guideline recommendations that support the use of AAPs, these plans are not routinely used by healthcare providers. This project evaluated the effect an education program on the principles of team-based care had upon the provision rate of AAPs written by healthcare teams. The teams in this project were working within a Patient Centered Medical Home (PCMH) model of care delivery. This project was conducted using a quantitative, quasi-experimental one group pretest-posttest design. The study population (n = 49) was members of seven health care teams consisting of medical assistants, licensed practice nurses, registered nurses, nurse practitioners, physician assistants, and physicians. All attended an educational in-service and were introduced to the concepts of team-based care as well as a workflow process change. One month post education, a retrospective chart audit was conducted to determine if there was a percentage change in the provision rate of AAPs. All teams showed an increase in the provision rate of AAPS. Three teams demonstrated a statistically significant increase in the provision rate of AAPs. Only two teams achieved the national goal of a 37% provision rate of AAPs to patients with asthma. This project demonstrated the effectiveness of an education program and workflow process change on the provision rate of AAPs. Further study is needed to determine if the composition of teams has an effect upon the provision rate of AAPs. *Keywords: Asthma, asthma care guidelines, asthma action plan, adherence to evidence-based guidelines, team-base care*

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Chapter One: Introduction and Overview of Problem

Introduction to Chapter

Asthma prevalence in the United States continues to increase. Despite the recommendations from the *National Asthma Education and Prevention Program* [NAEP] (U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program, 2010) *and Healthy People 2020* (U.S. Department of Health and Human Services, 2015) that persons with asthma receive a written asthma action plan of care, the provision rate of these plans by healthcare providers remains below the goal of 37%. Persons with asthma are in need of patient-centered, personalized care in order to promote optimal health. Receiving a written personalized asthma action plan (AAP) is one way to improve the care for persons with asthma. Chapter one of this scholarly paper will discuss the background and significance of asthma and perceived barriers by healthcare providers in the provision of written AAPs. The scholarly project, guided by the PICOT question, will provide knowledge on the role team-based care has upon the provision rate of AAPs for patients receiving care in a Patient Centered Medical Home [PCMH].

Background

In 2001, the Institute for Medicine issued the ground breaking report *Crossing the Quality Chasm* recommending a complete overhaul of the way health care should be delivered in the 21st century (Institute of Medicine [IOM], 2001). Six aims for improving healthcare were cited: safety, effectiveness, patient-centered, timely, efficiency, and equitable. From these recommendations, the PCMH model of care delivery was developed. Taking the IOMs recommendations further, the Institute for Healthcare Improvement (Beasley, 2009) developed

the *Triple Aim* model for healthcare delivery which simultaneously focuses on three critical objectives to improve health care outcomes while controlling cost. These aims are: improve the health of the defined population; enhance the patient care experience through improved quality, access, and reliability; and reduce, or at least control, the per capita cost of health care. The PCMH model of care delivery is designed to address these aims through a coordinated, team-based, patient-centered care delivery model that can be applied to persons with chronic diseases such as asthma (Qamar, Pappalardo, Arora, & Press, 2011).

Significance

Currently in the United States more than 23 million people, or 8.2% of the population, have asthma (Akinbami, Moorman, & Liu, 2011). This is a 12.3% increase in prevalence from 2001, when 7.3% of the population was diagnosed with asthma. In the United States, the mortality rate from asthma is 1.1 per 100,000 populations (Moorman et al., 2012). Asthma is the sixth ranking chronic health problem in the United States. The burden of this chronic respiratory disease affects individuals and their families, schools, and workplaces. Because of the cost to the health care system, the burden of asthma also falls on society in the form of higher insurance rates, lost productivity, and tax dollars. Annual health care expenditures for asthma in 2008 were estimated at 20.7 billion dollars with 14.2 million outpatient office visits and 1.3 million emergency department visits. In 2008, asthma caused 10.5 million missed days of school and 14.2 million missed days of work leading to a combined estimated value of 2.27 billion dollars in lost productivity per year (Akinbami et al., 2011).

Primary health care provided in the outpatient setting is often reactive, physician centered, and fragmented. This leads to gaps in care and increased health care costs with less than satisfactory health outcomes and patient satisfaction (Craig, Eby, & Whittington, 2011).

Optimal treatment and self-care management of asthma could reduce morbidity, mortality, and cost while enhancing quality of life for those with asthma. Studies have shown that a written AAP can reduce hospitalizations, urgent care visits, emergency department visits, work absences, and nocturnal asthma in adults (Gibson et al., 2008; Wolf, Guevara, Grum, Clark, & Cates, 2008). In addition, written AAPs can increase caregivers' understanding of the disease and use of medications (Tan, Chen, Soo, Ngoh, & Tai, 2013), improve physicians prescribing of controller medications, and improve patients' self-management and adherence to a plan of care (Ducharme et al., 2011). Despite recommendations that at least 37% of patients with asthma should receive a written plan of care and studies showing the benefits of written AAPs, the national provision rate remains below 34% (U.S. Department of Health and Human Services, 2015). At a large multi-specialty group practice in central Illinois, internal auditing showed the provision rate of AAPs in the 12 primary care practices varied from a low of 6% to a high of 39%, the average being 19.9%. Only two practices were achieving the goal of >37%. A survey of primary healthcare providers in this organization was conducted to identify perceived barriers to writing AAPs for patients. The top three barriers identified were: time constraints, computer issues, and lack of perceived benefit of plans.

Question Guiding Inquiry

A team-based approach to development of an AAP is one intervention that may improve the provision rate of AAPs in the primary care setting. The inquiry into this topic was guided by the PICOT question: Does an education program on the fundamentals of a team-based care workflow process for the integration of asthma action plans (Intervention) to healthcare providers of various disciplines (Population) increase the number of plans developed for patients (Outcome), 4 weeks after the education program (Timeframe).

Theoretical Framework

The Chronic Care Model (Group Health Research Institute, 2015) provides a useful theoretical framework for evaluating care provided to persons with a chronic disease such as asthma. The original Chronic Care Model developed in the 1990s (Bodenheimer, Wagner, & Grumbach, 2002a; Bodenheimer, Wagner, & Grumbach, 2002b) identified six essential elements of a quality health care system which include: the community, the health care system, self-management support for patients, delivery system design, decision support, and clinical information processes. The model can be applied to numerous chronic disease states, health care settings, and target populations including patients with asthma. In 2003, five additional themes were added to the Chronic Care Model to reflect advances in the field of chronic care management based on current research literature and reports from systems that implemented the Chronic Care Model (The Robert Wood Johnson Foundation, 2003). The five additional themes are: patient safety, cultural competency, care coordination, community policies, and case management.

This scholarly project examined if a team-based workflow process using nursing and clerical staff, in conjunction with the primary care provider, affected healthcare provider rates of generating written AAPs for persons with asthma. Using the Chronic Care Model as a guide, in order to deliver effective, efficient clinical care and self-management support, patient care needs to be pro-active and focused on keeping patients healthy versus reactively responding to patients when they are ill. This goal can be accomplished by determining when care is needed, defining roles of team members, using structured planned interactions, and making follow up care part of standard operating procedures. One way to achieve this high level of care, focusing on the principles of the chronic care model, is the reorganization of patient delivery systems to facilitate

efficient and effective care. The utilization of multi-disciplinary, team-based models of care delivery have demonstrated improved outcomes for persons with asthma (Ring et al., 2007; Taylor, Machta, Meyers, Genevro, & Peikes, 2013; Wessel & Spain, 2005). In addition, utilizing support staff to their highest level of education and training, improves the efficiency and safety of care provided to patients which can improve health outcomes for patients with asthma (IOM, 2010).

Definition of Terms

The following terms were defined for utilization in this scholarly project.

Asthma is a chronic disease of the airways that involves complex interaction of airflow obstruction, bronchial hyper-responsiveness, and an underlying inflammation (U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program, 2010).

Asthma Action Plan is an all-encompassing term to provide written instructions for both daily actions to keep asthma controlled and for actions to adjust treatment when symptoms occur (U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program, 2010).

Self-management in persons with asthma refers to self-adjustment of medications by the patient according to written, pre-determined criteria in an AAP (Powell & Gibson, 2009).

Primary Healthcare is the "provision of integrated, accessible health services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community" (Donaldson, Yordy, Lohr, & Vanselow, 1996, p. 32).

Patient Centered Medical Home (PCMH) is a way of organizing primary care that emphasizes care coordination and communication to transform primary care. Components include comprehensive care, patient-centered care, coordinated care, accessible services, quality care, and safe provision of care (Agency for Healthcare Research and Quality [AHRQ], 2014).

Healthcare provider is defined in this study as any advanced practice provider of direct primary patient care; nurse practitioner, physician assistant, or physician.

Team-based health care is the "provision of health services to individuals, families, and/or communities by at least two health providers who work collaboratively with patients and their caregivers to accomplish shared goals within and across settings to achieve coordinated, high-quality care" (Mitchell et al., 2012, p. 2).

Primary care team consists of all members of the healthcare team providing care to a patient or family in a primary care setting. These teams can include certified medical assistants, licensed practical nurses, registered nurses, nurse practitioners, physician assistants, physicians, and clerical staff.

Conclusion

As discussed in this chapter, it is essential to provide quality, cost effective care to persons with chronic diseases such as asthma. Primary care practice models, such as the PCMH, need to incorporate team-based activities and standardized workflow processes for their patients with chronic illnesses. This paper strives to demonstrate how implementing a team-based workflow process, using all members of the health care team, can improve care provided to patients with asthma by increasing the number of AAPs provided to patients.

Chapter Two: Review of the Literature/Evidence

Introduction to Chapter

Chapter two provides a critique and review of the literature in support of this scholarly project, which is intended to improve health outcomes for patients with asthma by promoting self-management through the provision of asthma action plans. Literature addressing the benefits for patients when they receive written AAPs, barriers perceived by healthcare providers in writing the AAPs, and interventions to address these barriers using a team-based approach to care will be presented. In addition, this chapter contains a description of the method utilized in conducting the literature review as well as an appraisal and synthesis of the findings.

Methodology

The following databases were searched electronically to obtain the best evidence for this project: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews, PubMed Central, Agency for Healthcare Research and Quality (AHRQ), and the National Guidelines Clearinghouse. The searches were conducted between March 2013 and February 2015. Studies were chosen for review based upon the following criteria: published between the years 2005 through 2015 except for landmark work, appeared in English language journals, and available in full text. Exclusion criteria included: research protocols, articles that included co-morbidities other than asthma, and articles that were not research based. Key words and phrases used to retrieve these studies were: *asthma, asthma care guidelines, asthma action plan, and adherence to evidence-based guidelines, team-based care.*

Critique and Synthesis of Research Findings

Value of asthma action plans. Written AAPs have been shown to decrease exacerbations of asthma, improve control of asthma, improve patient satisfaction with care,

improve medication use by patients, and improve provider prescribing of maintenance medications for asthma. In a 24-week prospective, randomized controlled trial [RCT] by Janson, McGrath, Covington, and Cheng (2009), adults with moderate-to-severe asthma (n=94) were assigned to either a self-management group or provider managed group. The group with individualized asthma self-management education with the use of a written AAP showed higher adherence to use of inhaled corticosteroids (p = .02), improved perceived control of asthma by patients (p = .001), fewer nighttime awakenings by patient (p =.03), and decreased use of rescue inhalers (p = .01) when compared to participants without a written AAP.

A study of the use of a written AAP in the pediatric emergency room was designed to evaluate adherence to prescribed medication (Ducharme et al., 2011). This RCT compared children with (n = 109) and without (n = 110) a written AAP. All participants received fluticasone and albuterol inhalers, fitted with dose counters, provided by the emergency room physician. Findings included increased adherence to prescribed medication (mean group difference of 16.13%, 95% CI [2.09, 29.91]), increased physician prescription of maintenance medication (RR 2.47, 95% CI [1.53, 3.99]) and improved asthma control (RR 1.39, 95% CI [107, 1.60]) in those subjects who received a written AAP. The study had limitations of not being double blinded, lacking diversity among ages of sample population, and having contamination between and within physicians working with both the study and control groups. Self-management of care was the theoretical framework utilized by these investigators. This was a valid, reliable RCT; however, due to the cited limitations, the results cannot be generalized to primary care practices. The conclusion by investigators was the best way to guide self-management of asthma is multifaceted and includes, but is not limited to, the provision and use of a written AAP.

Bhogal, Zemek, and Ducharme (2006) conducted a systematic review of the literature to evaluate the independent effect of providing versus not providing a written AAP in children and adolescents with asthma and secondarily to compare the effect of different written AAPs. The investigators electronically searched the Cochrane Airway Group specialized register, which is derived from searches of EMBASE, CINAHL, MEDLINE and CENTRAL, as well as hand searched respiratory journals and meeting abstracts. The review was limited to RCTs that included comparison of written AAP to no written AAP or different AAPs to each other. Four trials (3 RCTs, 1 quasi-RCT) involving 335 children were included for review. The conclusion of the review suggested that symptom based AAPs are superior to peak flow AAPs. The relative risk of exacerbation was 27% lower in children prescribed an action plan based on symptoms versus peak flow measurement. There were no studies identified that examined the benefit of providing a written AAP versus not providing a written AAP. Implications for future research included the need for studies which compare the efficacy of written AAP versus no written AAP. It was noted that in order to distinguish the efficacy of written AAP as a communication tool between health care providers and patients, future studies should be sufficiently powered to measure and report adherence and treatment recommendations of the AAP. There is also a need for the exploration of the cost/benefit ratio of written AAPs and its components of self-management. The research method of this study was valid and reliable. This systematic review is of the highest level of research evidence and recommendations can be generalized to practice.

Similarly, Powell and Gibson (2009) conducted a systematic review of the literature to evaluate programs that optimize asthma control through use of inhaled corticosteroids, regular medical review by a physician, or use of individualized written AAPs. The literature was searched electronically from the Cochrane Airways Group trials register and reference list of

articles. Selection criteria included only RCTs of asthma self-management education interventions in adults over 16 years of age with asthma. Fifteen trials met the inclusion criteria. Six studies compared optimal self-management to adjustment of medication either by a written AAP or physician adjustment. These two styles of management gave equivalent effects for hospitalization, emergency room visit, and nocturnal asthma symptoms. Self-management using a written AAP based on peak flow measurement was found to be equivalent to using a symptom based written AAP in the six studies which compared these interventions. Three studies compared self-management options. Conclusions from this review were that optimal self-management of asthma may be conducted either by self-adjustment of medications with a written AAP or by regular medical review by a physician, written AAPs based on peak flow measurement are equivalent to plans based on symptoms, and reduction in the intensity of education or level of clinical review may reduce effectiveness of plans. The research method of this study was valid and reliable and of the highest level of research evidence. The results can be generalized to practice.

Patients who possess an AAP report higher satisfaction with the care they receive from their healthcare providers according to a study conducted by Patel, Valerio, Sanders, Thomas, and Clark (2012). The investigators examined the association between having a written AAP and behaviors to keep asthma in control and patient satisfaction with care. This study design used a cross-sectional analysis of baseline data from a RCT evaluating self-management program among women with asthma (N = 808). Findings concluded that women who did not have an AAP were less likely to take asthma medication as prescribed [χ^2 (1) =13.68, $p < .001$] or to initiate a discussion about asthma with their physician [χ^2 (1) = 26.35, $p < .001$]. Adjusting for asthma control, income, and medical specialty, women who did not have an AAP were more

likely to report dissatisfaction with their asthma care (OR, 2.07; 95% CI [1.35, 3.17], $p < .001$). Conclusions from this study were women without an AAP were less likely to initiate discussions with their physicians or take medications as prescribed, both considered important self-management behaviors. In addition, they were less satisfied with their care. Not having an AAP may affect interactions between patient and physician and clinical outcomes.

Provider barriers to adhering to asthma care guidelines and providing written asthma action plans. Although the national guidelines for the diagnosis and management of asthma were intended to bridge the gap between current knowledge and practice, poor adherence to the guidelines is well documented. The literature contains abundant research citing the benefit to patients of possessing a written AAP. Despite these recommendations, the national average of patients who receive a written AAP remains <34%. Both quantitative and qualitative studies have explored the reasons for lack of provision of AAPs to patients by healthcare providers.

In a study by Cabana, Rand, Becher, and Rubin (2001) barriers to physician adherence to the national asthma guidelines were examined. The design of this study was a cross sectional survey of primary care pediatricians (*N*=829), with a response rate of 55% (456/829). Non-adherence to guidelines was associated with specific barriers for each of the following guideline components: not recommending peak flow meter use due to lack of self-efficacy (OR, 3.4, 95% CI[1.9-6.1]), not prescribing corticosteroids which was defined as lack of agreement with recommendation (OR, 4.7, 95% CI[3.2-14.4]) , and screening and counseling of patients and parents for smoking which was a defined as lack of self-efficacy of providing recommendation (OR, 3.8, 95% CI[1.7-6.2]. Adherence was defined as following a guideline component more than 90% of the time. Recommendations from this study were that the need for tailored interventions should address the barriers characteristic of a given guideline component.

The barrier of poor provider self-efficacy in following asthma care guidelines was also identified in a study by Wisnivesky et al. (2008). In this study providers (*N*=202) from four major general medicine practices in New York City were surveyed for self-reported adherence to asthma care guidelines of inhaled corticosteroid (ICS) use, peak flow monitoring, AAP use, allergy testing, and influenza vaccination. Findings included most providers reporting adherence to guideline recommendations of ICS use (62%) and influenza vaccination (73%). Adherence to peak flow monitoring (34%) and AAP use (9%) were significantly lower. Multivariate analyses showed that those providers with greater self-efficacy showed increased adherence to ICS use (OR 2.8, p = .03), peak flow monitoring (OR 4.9, *p* =.05) and AAP use (OR 2.8, *p* =.03). The conclusion of this study was poor provider self-efficacy prevented providers from adhering to national asthma guidelines.

Similarly, a study to examine compliance with three key components of the *British Guidelines for the Management of Asthma* was conducted by Wiener-Ogilvie et al. (2007). Twenty-four practices in Scotland were invited to participate in this retrospective chart audit to determine compliance to asthma guidelines. Fifteen accepted the invitation. The three components evaluated were objective diagnosis of asthma, pharmacological management, and provision of a written AAP. In regards to the AAP, 389 surveys were sent to patients with 262 returned (66%). Of the responders, 58/254 (23%) reported that they had a written AAP. Six respondents returned surveys and did not wish to participate and 2 respondents stated they did not have asthma. Barriers identified by providers for non-adherence to guidelines in providing AAPs were theoretical, lack of confidence in writing the plan and lack of knowledge of writing the plan (χ^2 2.44, p = 0.12), and practical, being lack of time and resources exacerbated by poor teamwork (χ^2 5.12, p = .02).

These same barriers were echoed in a qualitative study by Wahabi and Alziedan (2012). Focus group interviews with physicians identified the following barriers for adhering to asthma guidelines and provision of AAPs: lack of awareness or disagreement with guidelines, staff shortages, and lack of time. In another qualitative study conducted by Tan, Tay, Ngoh, and Tan (2009), 29 general practitioners in Singapore were interviewed in purposeful focus group discussions. The participants generally perceived the AAPs as useful, but rarely used in the practice setting. Cited barriers to using the AAPs included: would benefit only select patients, language barriers, lack of time to write the plans, and lack of knowledge on how to write the plans. One recommendation from this study was to engage the nurses and other members of the healthcare team in the writing of the AAPs. Finally, a qualitative study by Goeman et al. (2005), using nominal group techniques of highly structured meetings, was conducted to identify barriers to delivering asthma care among general practitioners (n = 49) in Australia. The consistent themes were lack of education of providers on how to write the AAP, cost barriers and time factors to perform this task in daily practice, and AAPs not considered a patient care priority. This study did recommend new models of patient-centered, team-based care to overcome these barriers.

Team-based care to address provider barriers to providing asthma action plans. Several studies have been conducted to evaluate interventions that could improve adherence to asthma treatment guidelines. Several of these studies cited the use of a team-based model of care as a positive intervention for the health outcomes of those with asthma. In a study by Kaferle and Wimsatt (2012) a team-based approach for the delivery of care to patients with asthma in a primary care setting was evaluated. This approach utilized the engagement of registered nurses (n = 14), physicians (n= 86, 30 residents and 50 faculty members), and an electronic clinical

reminder system to aide in the provision of written AAPs. All providers involved in the care of a patient with asthma received a two hour educational program for delivery of care to patients with asthma which included review of the national treatment guidelines, introduction of AAP prompts in the electronic health records, and AAP templates. Patients met with the nurse after regularly scheduled office visits or as a follow up to physician recommendations. Cumulative percentage rate of AAPs provided to patients increased statistically (p = .008) over the three year study period. The conclusion from this study was that practices with low AAP completion rates may find a team-based approach helpful in increasing the number of written AAPs provided to patients.

The study by Fox et al. (2007) evaluated the effect of a team-based approach to care, using continuous quality improvement and community health workers, on asthma-related health outcomes in school-aged children. The teams were defined as having a clinician champion, either a physician or nurse practitioner, community health worker, project coordinator, nurses, and administrative support staff. This was a demonstration project conducted in seven community clinics in California. The entire clinic population with asthma was assessed for care-process changes through random cross-sectional chart audits at baseline and 24 months (N = 560). A subset of patients with moderate or severe persistent asthma (n=405) were followed longitudinally for specific asthma-related clinical outcomes, satisfaction with care, and confidence in managing asthma by family at baseline and again at 12 or 24 months. Cross-sectional data showed clinic-wide improvements in documentation of asthma severity (OR 6.6. 95% CI [4.0-10.9], p < .0001), review of action plans (OR 7.8, 95% CI[4.6-13.1] p < .0001), health services use both in the office (OR 18.1. 95% CI [10.8-30.4] p < .0001 and emergency department (OR 7.33, 95% CI [4.5-11.9]. p < .0001), and nighttime asthma symptoms (OR 4.1,

95% CI [2.4-6.9], $p < .0001$). Linear regression analysis of the clinical sites' model adherence ranks against site-level combined scores estimating clinical outcome, improvements in clinical care processes and overall outcome, showed significant linear correlations ($R^2 \geq 0.60$). Authors concluded that major improvements in asthma-related care processes and clinical outcomes were demonstrated in this project which used a team-based approach to provision of care to patients with asthma.

Similarly, in a study by Mangione-Smith et al. (2005) children with asthma were assigned to either an intervention clinic (n= 385) which provided care based on the Chronic Care Model principles using team-based care, or, to a control clinic (n=126) which did not practice team-based care. Three two-day educational sessions were provided to the teams providing care in the intervention clinic with three follow up sessions throughout the next year. No definition of *team* was provided. Health care providers were identified, but not defined, as the persons receiving the educational program. Findings included that the overall process of asthma care improved significantly in the intervention group but remained unchanged in the control group ($p < .0001$). Patients in the intervention group were more likely than patients in the control group to have written AAPs (41% vs 22%, $p = .001$), have better general health-related quality of life (scale score 80 vs 77, $p = .05$), and better asthma-specific quality of life related to treatment problems (scale score 89 vs 85, $p < .05$). The authors concluded that implementing the Chronic Care model, which includes care teams, can improve asthma related health outcomes. The more components of the Chronic Care model implemented, the greater the significance of the improvement in outcomes.

Finally, two studies examined the effect of a team based model of care on the delivery of primary care to patients with chronic illnesses. In the first study by Cramm, Strating, and

Nieboer (2014) the evaluation of the effectiveness of implementing transition programs in improving the quality of chronic care delivery and the identification of the predictive role of team climate on the quality of care delivery was examined. This was a longitudinal study in the Netherlands. A total of 145/180 respondents completed a questionnaire (80.6%) at the beginning of the program and 101/173 (58.4%) did so at the end of the program one year later. A total of 90 respondents completed the questionnaire at both times. Respondents were defined as members of the health care team and could include nurses, physicians, paramedical professionals, social workers, psychologists, and quality management officers. Two-tailed, paired t-tests were used to determine improvement over time and multilevel analyses were used to evaluate the predictive role of team climate. Findings included that team climate improved the quality of chronic care delivered ($p < .01$). The authors concluded that efforts to stimulate a team climate could enhance the quality of chronic care delivery to chronically ill adolescents. This study was limited by the age of the respondents and could not be generalized to all populations. The authors did recommend replication of this study in different age groups.

The second study which was conducted by Goldberg, Beeson, Kuzel, Love, and Carver (2013) was a qualitative investigation to gain an understanding of how primary care practices in the United State are transforming their practices to deliver patient-centered care. Case studies of three small, primary care practices in Virginia were conducted using in-depth interviews, structured telephone questionnaires, observation, and document review. Team-based care stood out as the most critical method used to successfully transform practices. Characteristics of the three teams were as follows: team A consisted of a physician, two nurses, patient referral clerk and two medical assistants; team B was composed of six physicians, two nurse practitioners or physician assistants, seven nurses, a care coordinator, and administrative staff; and team C was

composed of six physicians, eight nurses, two medical assistants, and front office administrative staff. Three types of patient centered care models were identified: the care coordinator model, enhanced traditional model, and top of license team model. Each model was deemed beneficial with the underlying theme being team work. Recommendations included implementing team-based care with defined new roles and responsibilities, establishing communication mechanisms, changing organizational structures and care processes, and involving employees in the change process.

Limitations

A voluminous amount of research exists on asthma, adherence to guidelines, and benefits of AAPs for patients. The literature review in this chapter may have been limited by this author's choice to review studies that exclusively examined those patients with asthma excluding other respiratory co-morbidities such as COPD. In addition, numerous studies examined multiple variables in the same study which could skew the results. The area of team-based care is a relatively new concept in primary care, thus, there are few studies addressing the specific patient population of those with asthma. Many studies did not describe the composition of the team in detail. No studies were found that solely explored teams led by an advanced practice nurse or physician assistant.

Conclusion to Chapter

Patients with asthma represent a population with chronic health needs. The current evidenced based treatment guidelines recommend providing each patient with asthma a written plan of care. Despite this recommendation, the provision rate of written AAPs by healthcare providers remains low. Many barriers have been identified by providers in the writing of these plans including lack of knowledge of how to write a plan, lack of time and resources, and a belief

the plans are not beneficial. Interventions identified in the literature to address these barriers include promoting a team-based model of patient care where all members are functioning to the highest level of education in an effort to improve the quality of healthcare provided to patients with chronic illnesses, including those with asthma.

Chapter Three: Method

Introduction to Chapter

This scholarly project sought to evaluate what affect a team-based approach to the development of AAPs had upon the provision rate of plans written by the healthcare team. This project integrated principles from the Chronic Care Model for the care of persons with a chronic disease, namely asthma. These principles included the efficient, coordinated, team-based approach of provision of care to patients with a chronic disease for promoting self-management of the disease by the patient. For patients with asthma, this included the recommendation from the *National Asthma Education Program* (U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program, 2010) and *Healthy People 2020* (U.S. Department of Health and Human Services, 2015) that persons with asthma should possess a written AAP to promote self-management of their disease process. This plan should be developed between the patient and/or caregiver, and healthcare provider. This chapter presents the design of the project, the characteristics of the sample population, and details of the methodology, data collection, and analysis of data. Organizational readiness, resources, challenges, and expected outcomes will also be discussed.

Design

This project was conducted using a quantitative, quasi experimental one group pretest/posttest design. In this type of research design, the sample is not selected randomly (Burns & Grove, 2009). The pretest is the current percentage rate of AAPs written for patients by healthcare providers in the patient centered medical home family practice sites of a large multi-specialty group practice in central Illinois. The posttest measure is the percentage of AAPs

written for patients in the same setting. The timeframe for reviewing the development of the AAPs was the four weeks following an education program on the principles of team-based care and introduction of a system procedure change. The initiation of AAPs by nursing staff was the proposed procedure change. The pre and posttest outcomes were the dependent variables. The independent variable was the education program presented to staff.

Population Plan

Sample. Research participants were recruited from seven large primary care practices who utilize the PCMH model of care, within a large multi-specialty group practice located in Springfield, Illinois. The participants were current members of the healthcare teams providing care in the PCMH. Team members could include nursing personnel, nurse practitioners, physician assistants, physicians, and clerical staff. Participation was voluntary. The participants were recruited through presentations at staff meetings as well as individual meetings as needed. The participants signed an informed consent (Appendix B).

Gatekeepers. Gatekeepers are those individuals or institutions that act as an intermediary between a researcher and potential participants (Newcastle University, 2015). At the academic level, the gatekeepers were the Institutional Review Board (IRB) at Wilkes University as well as the faculty member working with the student researcher. The IRB ensured risks to human subjects were minimal and the study promoted the generation of knowledge. The faculty member's responsibility was approval of the project which was presented to the IRB.

At the institutional level of the site for the investigation, the gatekeepers were the persons who had the ability to grant access to patients and employees. The Director of Clinical Research was the person who determined if a study reflected the philosophical vision of the organization and was feasible in the practice setting. The Director of Quality Management was

the person who ensured all institutional policies and procedures were followed regarding access to patient records. Both of these directors, as well as the physician medical director for primary care, supported this project as a way to promote team-based care and improve the quality of care provided to patients

Stakeholders. The stakeholders were individuals who could be directly impacted by or involved in the study (Burns & Grove, 2009). In this study, the stakeholders were nursing personnel, nurse practitioners, physician assistants, physicians, and clerical staff. In addition, the organization where the research was conducted is a stakeholder as the results of any research project that affects quality of care provided to patients can have potential system wide consequences. Patients could also be stakeholders as the study may affect the quality of care they receive.

Procedure Plan

Institutional Review Board Approval. Initially, Institutional Review Board (IRB) approval was obtained from the Wilkes University IRB where the researcher was enrolled in a doctoral program in nursing (Appendix A). At the healthcare organization level, the proposed research project was presented to the Director of Clinical Research. It was determined that no identifiable patient data was involved in the study and a formal IRB committee presentation was not indicated. This organization accepted the IRB approval obtained through Wilkes University. There were policies and procedures in place within this organization which guided the process for research projects. The Director of Quality Management was informed about the planning and implementation of this project.

Description of procedure. The researcher used presentations at department meetings, as well as meeting one on one with members of the healthcare team, to introduce the project to

eligible participants. These participants were individuals working within a team. After the participants had the opportunity to ask questions and expressed a willingness to participate in the study, they were asked to sign an informed consent (Appendix B). Prior to the intervention of participation in an education program, baseline numbers were obtained on the current provision rate of AAPs by practice site and provider. The intervention of an education program on the principles of team based care was presented to the participants. This education program included the introduction of a system procedure change where the initiation of AAPs was facilitated by the nursing staff (Appendix C). The presentation was a one hour power point presentation. Throughout the presentation, discussion was encouraged and questions were welcomed. Handouts provided during the presentation included a copy of the slides, reference page, and a laminated copy of the proposed workflow process change. Any providers who were unable to attend these small group meetings had the opportunity to view the slides via email and meet with the researcher on an individual basis. Weekly follow up reminders to the procedure change were sent by email. Informational posters located at the nurses stations and in the break rooms provided a visual cue for the procedure change. Weekly huddle meetings were conducted with the teams to address any questions or concerns. One month after initiation of the change, a retrospective audit report was generated for determining the number of patients seen during that time period who had a diagnosis of asthma. This report included the calculated proportion of those patients who had an up to date AAP documented in the electronic health record. These numbers were examined at the provider level as well as the team level/practice level.

Organizational Readiness. The Medical Director for Primary Care, Director of Quality Management, and the Director of Clinical Research were receptive to this research project since the provision of quality, evidence based, and patient centered care is consistent with the mission

statement and core values of this organization. Through a pre-study survey, health care providers confirmed their support of evidence based guidelines for the provision of care to patients with asthma and were open to new ideas on how to provide AAPs in an efficient manner.

Organizational Resources/Support. This project was supported at the administrative level by the Medical Director for Primary Care and at the department level, by the Chairperson of Family Practice. In addition, the Chief Clinical Officer in charge of nursing services supported this project. The Quality Management department provided personnel and resources to aid in the generation of reports and support for the process change by utilization of the PCMH nurse navigator. The information technology department agreed to provide education on the clinical reminder system embedded within the electronic health record for identifying patients in need of an asthma action plan through the monthly EHR update email.

Challenges to Implementation. Potential challenges to this proposed practice change included acceptance of interprofessional collaboration, willingness to change, and sustainability of the change. The IOM (2010) recommends the expansion of opportunities for nurses to lead and diffuse collaborative improvement efforts as well as the analysis of interprofessional health care workforce data. All members of the health care team will need education on the principles of team-based care and interprofessional collaboration. All improvement requires change. In order to facilitate and sustain a change, the Institute for Healthcare Improvement (2003) suggests four key elements must be in place: specific and measureable aims, measures of improvement that are tracked over time, changes that will result in desired improvement, and testing cycles to allow teams to learn how to apply a change. These key components were built into the education program and follow up reinforcement efforts for the proposed practice change.

Organization Expected Outcomes. An expected long-term outcome of this project is improved health outcomes for patients with asthma. The provision of a written AAP to each patient with asthma has the potential to improve adherence to plan of care which in turn could decrease utilization of more expensive health resources such as urgent care and emergency room settings.

Data Collection Plan

Before the intervention, the baseline provision rate of asthma action plans was determined by provider and selected practice settings through reports generated by the Quality Management department of the organization. The selected participants attended an education program, the intervention in this study, lasting no more than one hour, on the principles of team-based healthcare and a system procedure change. The system procedure change was the initiation of the AAP by the nursing staff, completion of the plan by the healthcare provider, and scanning the plan into the electronic health record by the clerical staff. One month after the initiation of the intervention, a retrospective report was generated to determine the number of patients seen during the timeframe who had a diagnosis of asthma. Those patient records were examined to determine if an AAP was on file for each patient. This proportion of patients, who received AAPs during the intervention period, was compared to the baseline data to determine if the intervention had an effect on this proportion. All patient information was de-identified in the report to ensure patient confidentiality. Data was stored on the investigator's password protected, personal laptop computer in an excel file created for this study for 3 years. In addition, demographic information (Appendix D) on study participants was collected for analysis and stored in a like manner. The demographic data does not contain identifiers. The information will be maintained for three years after completion of the study.

Data Analysis Plan

A data collection form (Microsoft Excel spreadsheet) was developed for this study to store the data collected and analyzed by the researcher. The individual healthcare provider participants were assigned numerical identifiers on both pretest and posttest provision rate scores. In addition, each practice site was assigned a unique numerical identifier to analyze the group results in addition to the individual healthcare provider results of the overall team effect. The data was analyzed using the McNemar test. Descriptive statistics were used to analyze participant demographic characteristics. The non-parametric McNemar test is appropriate for pretest/posttest comparison when there are two independent variables and the measures are nominal (Plichta & Kelvin, 2013).

Conclusion to Chapter

This pretest/posttest study measured the effect of an education program on the principles of a team based model of care on the provision rate of AAPs to patients by healthcare providers practicing in a PCMH. The role of gatekeepers and potential impact upon stakeholders was taken into consideration with the planning of the scholarly inquiry. This study is supported by the mission and value statements of the organization where the research was conducted, which is to provide high quality, evidenced based healthcare to the residents of central Illinois. The administrative leaders of the organization gave full support and allocated resources for this project. The participants' confidentiality was maintained throughout this study. Statistical analysis and outcomes of the intervention were beneficial for determining long-term feasibility of this practice change.

Chapter Four: Results

Introduction to Chapter

This chapter summarizes the data analysis results to determine the effect of team-based care upon provider provision rate of AAPs. The health care team members participated in an education program presenting team-based principles of care and a new system procedure change. Provision rates of AAPs were collected one month after implementation of the new process. Data on AAP provision rates pre and post intervention, were entered into an SPSS 23.0 database for analysis. The process for analysis included descriptive information of the sample population and tests for statistical significance comparing pre and post test scores for each team. Each individual team result was then compared to the other team results. Finally, a department wide test for statistical significance of the change in provision rates of AAPs was calculated. This chapter will present the analysis of data outcomes, interpretation of findings, and summary of results.

Analysis of Data Outcomes

Demographic Information. The study population was members of seven healthcare teams providing care in a PCMH setting (n= 49). The teams included receptionists (n= 2), certified medical assistants (n= 4), licensed practical nurses (n=3), registered nurses (n= 16), nurse practitioners (n=10), physician assistants (n=6), and physicians (n=8). The characteristics of the health care team members are outlined in Table 1. Of the 49 participants in the study, the length of time in the identified roles ranged from 0-5 years (22.4%) to ≥26 years (20.4%). The majority (38.7%) have been in their role 11-20 years, followed by <10 years (36.7%), and > 21 years (24.5%) respectively. The majority of team members (53.1%) have worked within this organization for < 10 years, followed by those working 11-20 years (26.5%), and those working

>21 years (20.4%). Highest educational preparation of the team members ranged from high school (4.1%) to doctorate degree (16.3%), with the majority (28.6) holding masters degrees. The remainder had some college (12.2%), associate degree (20.4%), or bachelor degree (18.4). The overwhelming majority (98%) felt the group practice functioned as a team.

Pre and Post Intervention Scores. The provision rate of AAPs was calculated for patients (n=704) seen in seven PCMH practice sites, who had a diagnosis of asthma, one month following attendance of an education program on team-based principles of care and a workflow process change. Pre test scores were the presence of current AAPs at time of appointment (n=140/704, 19.9%). Post test scores were the presence of current AAPs at completion of appointment (n=211/704, 30%). Change in this score was the dependent variable. These pretest and post test scores were compared to determine if a significant change occurred in the AAP provision rate for the entire department as well as individual teams.

All 7 teams showed an increase in the percentage rate of AAPs generated (Figure 1). The McNemar test was run on the pre and posttest AAP provision rates for the PCMH practice as a total, as well as for each individual team, to determine if these changes were statistically significant. The intervention of interest was attendance of an education program on the principles of team-based care and introduction of a workflow process change and its effect upon AAP provision rates. The practice total score demonstrated a significant improvement in the provision rate of AAPs after the intervention (30%, p =.0005) compared to pretest provision rate of AAPs (19.9%). The individual team provision rates of AAPs showed statistically significant increases for teams one, four and seven (p = .0005; p = .0005; and p = .0005 respectively). The changes in provision rate of AAPs was not statistically significant for teams two, three, five and six (p = .500; p = .125; p = .125; and p = .125 respectively). Table 2 presents the individual team

and total practice results. Although not all results were statistically significant, all teams showed improvement in provision rate of AAPs, which is of clinical significance to the researcher and healthcare organization.

Summary of Findings

In this project, the evaluation of the effectiveness of attendance at an education program on the principles of team-based care as well as a workflow process change were measured by the pretest/posttest change in provision rate of AAPs to patients receiving care in a PCMH. Using a pretest posttest design, the study showed a statistically significant change in the percentage of AAPs provided to patients in three of the seven teams evaluated. Although only three teams showed statistically significant improvement in the provision rate of AAPs, these numbers were large enough to significantly affect the provision rate of AAPs overall when totaling the results for all seven teams in the PCMH. In addition, these results have clinical significance for patients by providing a written guide to facilitate self-management of their asthma. This outcome supports the PICOT statement that attendance of an education program on the principles of team-based care, as well as the introduction of a workflow process change, will increase the provision rate of AAPs to patients receiving care in a PCMH. However, given that four teams did not show statistically significant increases in the provision rate of AAPs, the effect of the education program and practice change need to be explored further. In particular, the compositions of the teams and outside factors which may affect team performance are areas for further investigation.

Conclusion to Chapter

In this project, quantitative analysis of the data provided evidence to support the PICOT statement where attendance at an educational program on the principles of team-based care and a workflow process change positively affected the provision rate of AAPs. Further research is

required to determine if the composition of teams affects the provision rate of AAPs. In addition, evaluation of the workflow process longitudinally could provide different results. This project validates the benefit of education on the principles of team-based care and a new workflow process to improving the provision rate of AAPs in a PCMH.

Chapter Five: Discussion and Conclusions

Introduction to Chapter

Increasing demands on healthcare providers to practice evidenced based care is leading to new models of care delivery (Melnyk & Fineout-Overholt, 2011). Team-based models of healthcare, such as the PCMH, have demonstrated improved efficiencies and cost savings in the provision of patient care (Beasley, 2009). This chapter synthesizes the results of this pilot project, which was designed to evaluate the effectiveness of an education program on the principles of team-based care, and a workflow process change, upon the provision rate of AAPs by providers working in a PCMH. The data will be summarized focusing on implications for clinical practice as well as future research.

Discussion of Main Findings

This project generated outcomes which support the value of educating healthcare providers on the principles of team-based care and a workflow process change to improve provision rates of AAPs. A post-intervention increase in the provision rate of AAPs was demonstrated in all seven teams providing care in a PCMH. Three of the seven teams showed statistically significant increases in the provision rate of AAPs. Clinically, the new workflow process showed improvement in the provision rate of AAPs throughout all teams. Despite all teams demonstrating an increase in the percentage of AAPs provided to patients, and three teams showing statistically significant increases in AAP provision rates, only two teams met the national goal established in *Healthy People 2020* (U.S. Department of Health and Human Services, 2015) of a 37% provision rate of AAPs to persons with asthma (Figure 2). This finding highlights the need for continued testing of the workflow change in the most successful teams. A continuation of this study could determine if unique team characteristics or processes exist

which impact the provision rate of AAPs. If identified, these successful processes and team structures could be disseminated to other teams caring for persons with asthma (Langley et al., 2009).

Implications for Practice

The outcomes of this scholarly project have implications for the role of the doctoral prepared advanced practice nurse (APN) (Appendix E). The project demonstrated this researcher's competencies in meeting the *Essentials for Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing [AACN], 2006). Through analysis of evidenced-based practice, the researcher, as an APN, identified a need for improvement and change in the utilization of the following essentials: scientific underpinnings for practice, organizational and systems leadership for quality improvement, information technology to transform healthcare, health policy for advocacy in health care, interprofessional collaboration, and population health management to improve patient outcomes.

Doctoral Nursing Practice (DNP) is a practice doctorate utilizing scientific underpinnings to reflect the complexity of practice for the APN. The DNP prepared APN has unique expertise to obtain knowledge from the sciences and the ability to translate this knowledge into practice to benefit patients (Zaccagnini & White, 2014). In this project, the APN translated the scientific recommendations for provision of AAPs (U.S. Department of Health and Human Services, 2015) to patients by proposing and researching changes in the model of patient care delivery within the PCMH. Evidenced-based patient care guidelines (NAEP, 2010) as well as principles from the *Chronic Care Model* (Bodenheimer et al., 2002a) were utilized to educate the providers on the proposed changes in practice which included a team-based approach to care as well as a workflow process change.

Implementing this type of practice change requires organizational and systems leadership. The DNP prepared APN has the skills to work within organizations and systems to conceptualize new care delivery models with the focus on the needs of patient populations. In this pilot project, the APN worked with a multitude of professionals from various departments including: informational technology, quality management, physician services, nursing services, clerical services, health information management, and business and clinical intelligence. Advanced written and verbal communication skills were utilized by the APN to communicate the breadth and depth of the proposed practice change while evaluating the effects of this change upon the system as a whole. The APN was able to coordinate the skills and expertise of various departments to aid with implementation of the proposed practice changes. In addition, the APN served as both a resource and catalyst during development, implementation, and evaluation of the practice change process to help educate the healthcare team members on the goal of better population health, which can be achieved through a team-based approach to care of patients with asthma. As a result of this project, new standard operating procedures were enacted effectively changing patient care policies. One long-term goal of this project is to determine if the presence of an AAP prevents hospitalization of patients with asthma. If achieved, this goal would improve the health of the patient population of those with asthma. Advanced nursing skills were required throughout this entire project.

Limitations

While this study shows promising results, the broader application has limitations. The exact composition of each team was not studied, thus the findings cannot be applied to all teams. The effect of changes in the composition of the teams during the study period was not examined and is a limiting factor. The timeframe of this study was limited to one month post intervention

and different results may have been found if the study timeframe had been extended. The effect of factors such as absence from work of team members due to illness or vacation and the use of temporary staffing were not studied. Finally, the patient population excluded those who had a comorbidity of COPD, which could be a limiting factor in generalizing the results to other populations.

Recommendations for Future Research

The cause of the national low provision rate of AAPs by healthcare providers is multifactorial. Further research is needed on the effect of APN lead healthcare teams on the provision rate of AAPs. In addition, the role composition of healthcare teams has upon the provision rate of AAPs needs to be investigated. Further inquiry into the efficacy of different forms of documentation of the AAP, electronic versus scanned paper versus carbon copies, might prove beneficial. Finally, research should continue comparing the effect of the PCMH model of patient care on the health of populations.

Conclusion to Chapter

Implementing the use of evidenced-based guidelines, such as the recommendation for providing written AAPs, remains a challenge in today's complex healthcare environment. The utilization of a team-based approach to care presents an opportunity to improve the health of patient populations, including those with asthma. Through the demonstration of proficiency in the doctoral education essentials for APNs (AACN, 2006), this project studied the effects of education on the principles of team-based care to providers working in a PCMH. The results show a statistically significant improvement in the provision rate of AAPs. The researcher used clinical scholarship for evidenced-based practice and leadership skills in interprofessional collaboration to refine this model of care delivery. The information obtained through this study

demonstrates the critical role of DNP prepared APNs in the delivery of healthcare in the 21st century.

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Table 1

Demographic Characteristics of Sample Population

Total Sample Size	N = 49		
Roles	NP	20.4%	n = 10
	PA	12.2%	n = 6
	MD	16.3%	n = 8
	CMA	8.2%	n = 4
	LPN	6.1%	n = 3
	RN	32.7%	n = 16
	Clerical	4.1%	n = 2
Years in Role	0-5	22.4%	n = 11
	6-10	14.3%	n = 7
	11-15	16.3%	n = 8
	16-20	22.4%	n = 11
	21-25	4.1%	n = 2
	$\geq$ 26	20.4%	n = 10
Years Working at Organization	0-5	34.7%	n = 17
	6-10	18.4%	n = 9
	11-15	10.2%	n = 5
	16-20	16.3%	n = 8
	21-25	6.1%	n = 3
	$\geq$ 26	14.3%	n = 7
Highest Level of Education	High school	4.1%	n = 2
	Some College	12.2%	n = 6
	Assoc. Degree	20.4%	n = 10
	BS/BA Degree	18.4%	n = 9
	Master Degree	28.6%	n = 14
	Doctorate Degree	16.3%	n = 8
Belief Practice Functions as a Team	Yes	98.0%	n = 48
	No	2.0%	n = 1

Table 2

McNemar Test Results for Significance of Asthma Action Plan Provision Rate

Team	Number of Valid Cases	Exact Significance (2-sided)
1	228	.0005[a]
2	63	.500
3	108	.125
4	84	.0005
5	46	.125
6	95	.125
7	80	.0005[a]
Total all Teams	704	.0005[a]

a. Binomial distribution used.

Figure 1. Teams' AAP Provision Rate Comparisons

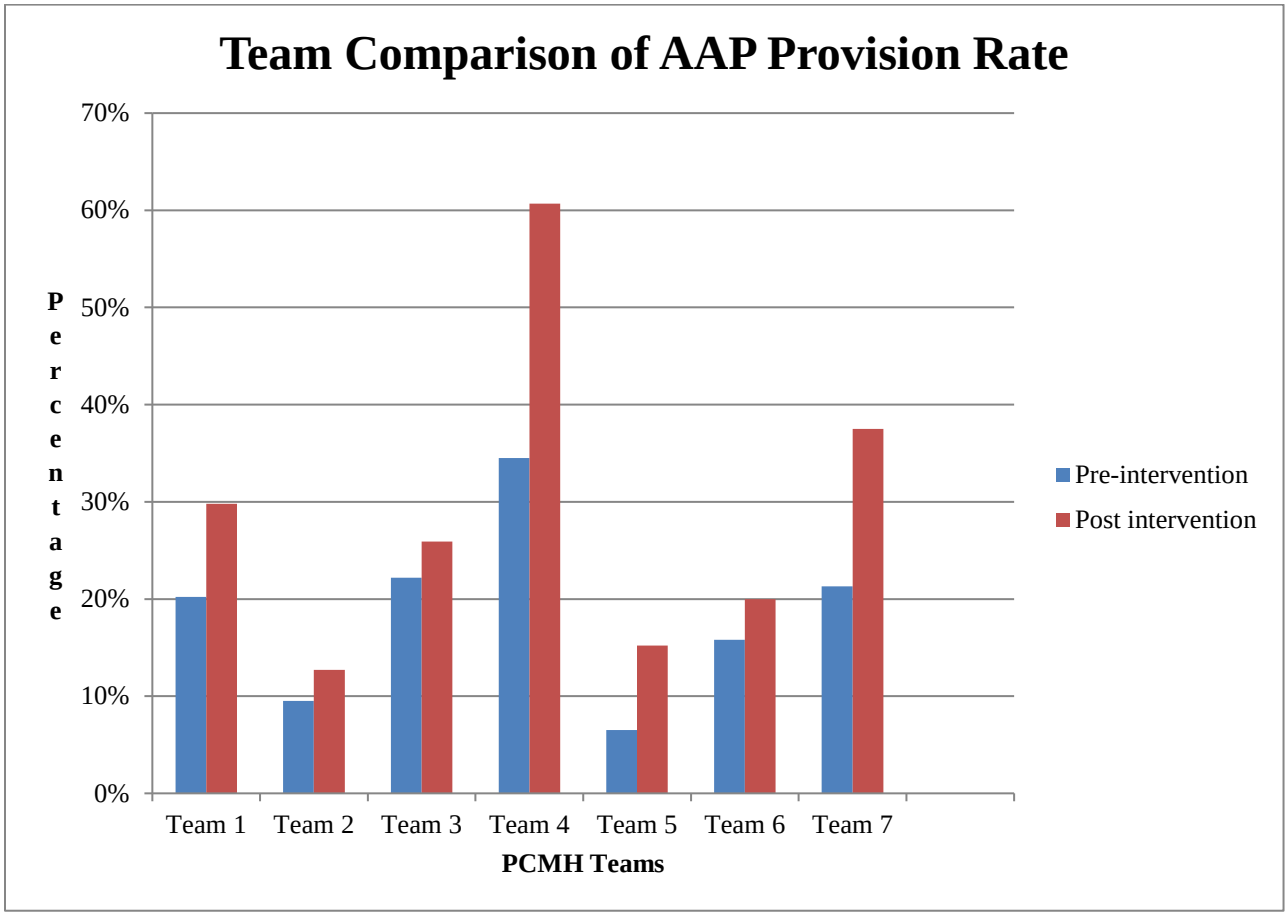


Figure 1. Graph depicting change in AAP provision rate pre and post intervention all teams

Figure 2. Teams Provision Rates Comparison to National Goal

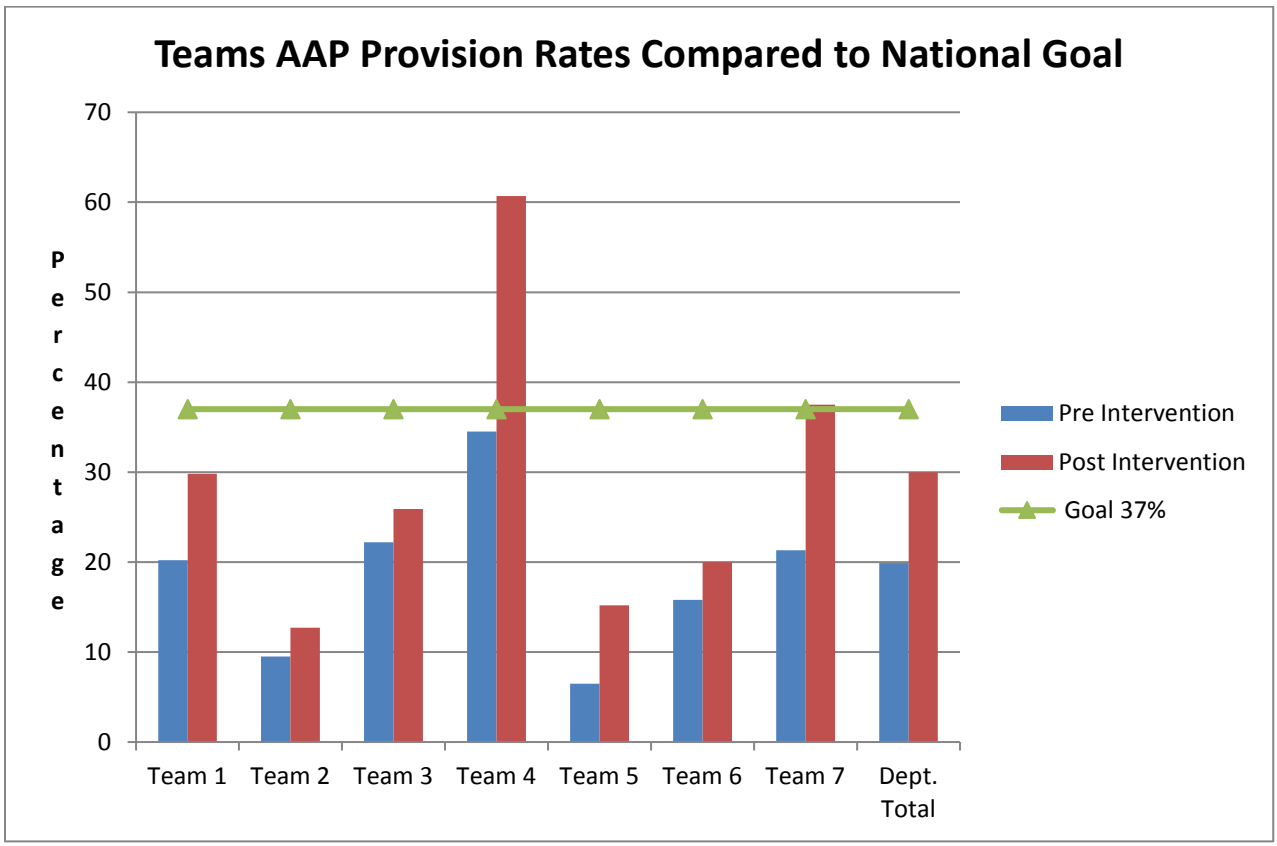


Figure 2. Comparison to *Healthy People 2020* goal of 37%

Appendix A

WILKES UNIVERSITY

84 W. South Street
Wilkes-Barre
Pennsylvania 18766
570-408-5000
1-800-WILKES-U
www.wilkes.edu

Via E-mail (lynne.hutchison@wilkes.edu*)*
Ms. Lynne M. Hutchison, FNP-BC
Doctoral Candidate
Wilkes University School of Nursing
84 W. South Street
Wilkes-Barre, PA 18766

April 22, 2015

Dear Ms. Hutchison,

The Wilkes University IRB reviewed your application entitled: “Provision of Asthma Action Plans in the Primary Care Setting: A Team-based Approach” and determined it is exempt from IRB review under U.S. Department of Health and Human Services (HHS) regulations at 45 CFR46.101(b)(5).

If you have any questions, feel free to contact me at linda.gutierrez@wilkes.edu or 570-408-4636.

Sincerely,

Linda Gutierrez

Linda Gutierrez MD
IRB Chair
Associate Professor
Biology and Health Sciences

Appendix B: Informed Consent

Purpose of Project:

I am a student at Wilkes University. I am working on a doctoral degree in nursing. A research project is part of my final course. I am seeking healthcare workers to be a part of this project. I want to see if team-based care helps you create more asthma action plans for patients. If you participate in this research project you will do a couple of things. One, you will go to a short presentation explaining team-based care. Two, you will complete a five question form about where you work. Three, you will learn a new workflow for making asthma action plans for patients. The project will take place this summer, 2015.

Voluntary Participation:

Everyone working in primary care at Springfield Clinic is invited to be a part of this project. Your participation in this project is completely voluntary. There are no direct benefits to you for being a part of this study. The healthcare system and society might benefit from this study by showing an improved and more efficient way to provide asthma action plans. There are no financial rewards or incentives offered for being a part of this study. There are no anticipated risks to you if you are a part of this study. There are no penalties or negative consequences if you choose not to be a part of this study. You are free to participate or quite this study at any time.

Confidentiality:

All information collected in this study will remain confidential.

Contact Information:

If you have any question about this research study, please feel free to contact me at (217)259-7804 or by email at mailto:lynne.hutchison@wilkes.edu

If you have any questions or concerns about your rights as a participant in a study, contact the Chairperson of the Institutional Review Board at Wilkes University (507)408-4332.

Consent to Voluntary Participation

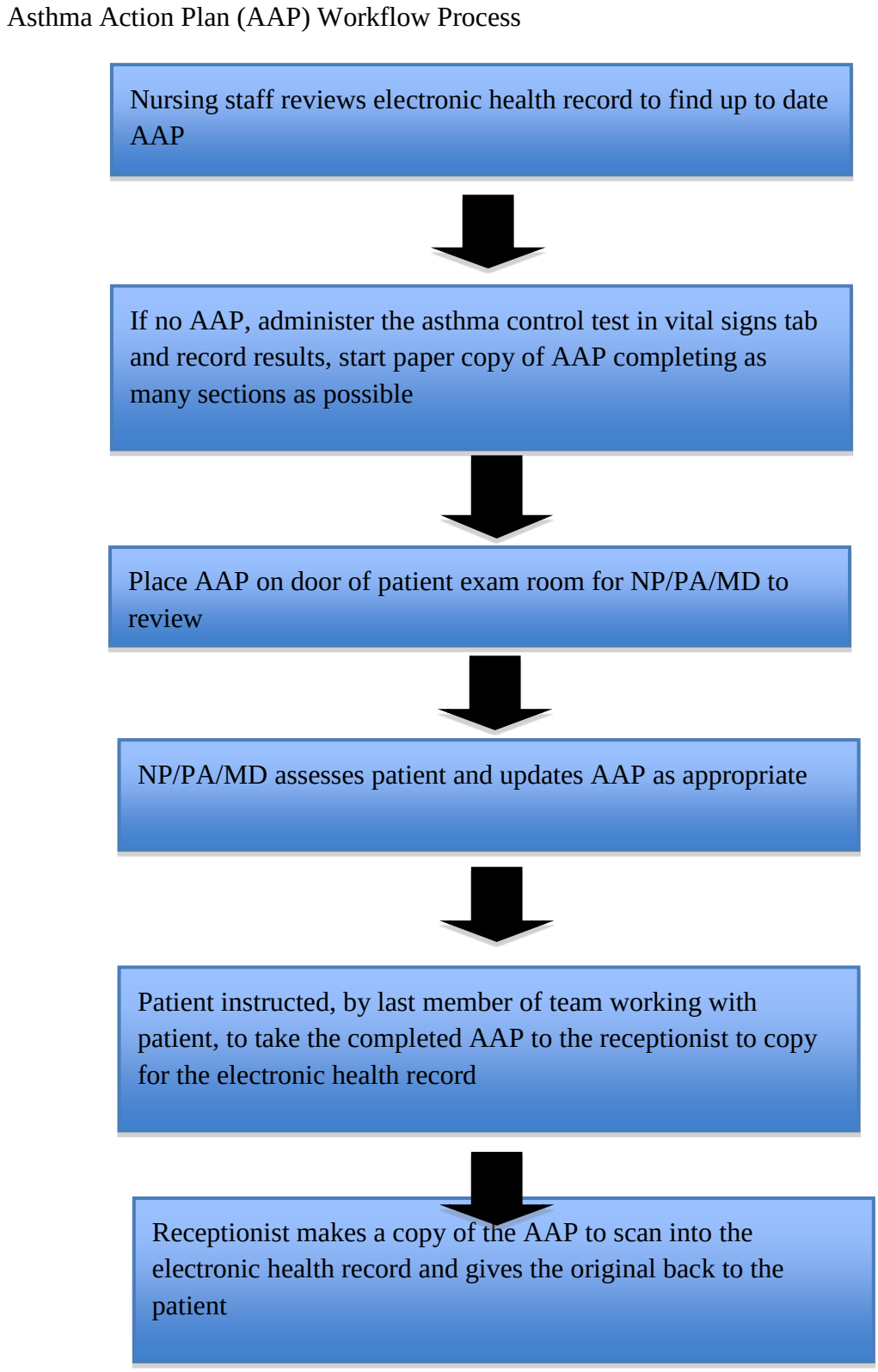
I have read the above information, or it has been read and explained to me. I have had a chance to ask questions. Any questions that I had have been answered. I consent to voluntarily participate in this research study.

Name (printed) of participant: _____

Name (written) of participant:_____

Date _____/_____/_____

Appendix C: Asthma Action Plan (AAP) Workflow Process



Appendix D: Demographic Data Sheet

Demographic Data Sheet

Please mark the appropriate answer.

1. Team member role:

   _____ Certified medical assistant
   _____ Licensed practical nurse
   _____ Registered nurse
   _____ Physician assistant
   _____ Nurse practitioner
   _____ Physician
   _____ Receptionist

2. Number of years working in the above role:

   _____ 0-5 years
   _____ 6-10 years
   _____ 11-15 years
   _____ 16-20 years
   _____ 21-25 years
   _____ 26 years or greater

3. Number of years employed at Springfield Clinic:

   _____ 0-5 years
   _____ 6-10 years
   _____ 11-15 years
   _____ 16-20 years
   _____ 21-25 years
   _____ 26 years or more

4. Highest level of education you have achieved:

   _____ High school diploma/GED
   _____ Some college
   _____ Associate degree
   _____ Bachelor's degree
   _____ Master's degree
   _____ Doctorate degree or higher

5. Do you think the practice where you work functions as a team?
   _____ Yes
   _____ No

Appendix E: Crosswalk of Scholarly Project Outcomes

Wilkes University
School of Nursing
Doctor of Nursing Practice
Crosswalk of Scholarly Project Outcomes

Name: Lynne M. Hutchison

Title of Scholarly Project: Provision of Asthma Action Plans in the Primary Care Setting: A Team-based Approach.

Date Completed: 11-1-2015 **Scholarly Chairperson:** Dr. Kathleen Hirthler

DNP Essentials	Chapter 1: Introduction and Overview of the Problem	Chapter 2: Review of the Literature/Evidence	Chapter 3: Method	Chapter 4: Results	Chapter 5: Discussion and Conclusions
I Scientific Underpinnings for Practice	Pages 1-3	Pages 7-16	Pages 19,25	Page 26	Pages 30,31
II Organizational and Systems Leadership for QI and Systems Thinking	Page 3	Pages 17,18	Pages 19,20	Page 28,29	Page 32
III Clinical Scholarship and Analytical Methods for Evidenced-based Practice	Pages 1 – 4	Pages 16,17	Page 25	Pages 26-28	Pages 30,31
IV Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care	Pages 1-3	Pages 7-10	Pages 23,24	Page 27	Page 32

V Health Care Policy for Advocacy in Health Care	Pages 4,5	Pages 11-13	Page 24	Page 28	Page 31
VI. Interprofessional Collaboration for Improving Patient and Population Health Outcomes	Pages 3,4,6	Page 13-17	Pages 20-22	Page 26	Page 31
VII. Clinical Prevention and Population Health for Improving the Nation's Health	Page 1	Pages 7-17	Page 24	Page 28	Page 31
VIII. Advanced Nursing Practice	Pages 1-4,6	Pages 15-17	Page 23	Pages 28,29	Pages 30,33