Improving Provider Adherence with Completion of a Written Asthma Action Plan according to Evidence-Based Practice Guidelines

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DEDICATION

I dedicate this quality improvement project to my loving fiancée, Rombulus, son Stacy, family, and friends, who provided me with their understanding and support. To my inspiring mother, Marilyn, who taught me the spirit of determination and perseverance. To my grandmother, Suzanne Berry, who has prayed so hard for my success and introduced me to the theory of caring. To my siblings, who undoubtedly kept me encouraged every step of the way. To my study advisor, Dr. Dihigo, whose expertise, direction, and support were genuinely offered continuously I am truly grateful.
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Abstract

Asthma is a serious chronic inflammatory health condition of the airways that causes many Americans to experience distress (Agency for Health Care Research and Quality [AHRQ], 2009). Asthma prevalence over the age of 16 has become particularly concerning. It is a costly disease that has increased drastically in recent decades (AHRQ, 2009). Many factors cause our nation to collectively attempt to improve the quality of care for these individuals. The primary goal is to treat the underlying inflammation and manage daily symptoms.

Regardless of national recommendations, health care providers experience challenges with compliance. In one study, all primary care providers and specialists surveyed (N = 512) were providing suboptimal asthma care related to national asthma guidelines (Rance, O’Laughlen, & Ting, 2011). Many publications indicate that health care providers have a lack of understanding regarding the National Heart, Lung, and Blood Institute's National Guidelines (NHLBI) (Crim, 2000).

This small descriptive study was conducted over a 12-week period during the summer of 2014 in a suburban college health center in Arlington, Texas. An evidence-based educational intervention based upon NHLBI guidelines was provided to all front office staff, registered nurses (RNs), and providers. Additionally, a system procedural change (adding a blank asthma action plan in out guides) was implemented. The out guide is a colored folder that is assigned to each provider that provides patient's name and identification number. The out guide is patient specific. A medical record review was completed for all eligible medical records for individuals with a diagnosis of asthma that met inclusion criteria (N = 34). After the study period, provider adherence and level of compliance with the completion of asthma action plans (AAPs) was analyzed and measured.
Thirty patients from the sample met the inclusion criteria for the chart review for the 12-week study period. Level of compliance was determined to be high with 25 out of 34 records with entirely completed AAP (73.5%). When comparing advanced practice registered nurses (APRNs) compliance compared to medical doctors (MD), APRNs compliance was better for all three areas measured.

Long-term health conditions require placing emphasis on self-care related to management and treatment. Educating health care providers regarding the significance of an AAP according to evidence-based practice will contribute to their comfort level and increase adherence. In a study by Kaferle & Wimsatt (2012), greatest improvement was found with clinics that instituted asthma education, clinical reminders, and registered nurse engagement.

Evidence-based practice is rapidly replacing the traditional health care decision prototype previously experienced (Melnyk & Fineout-Overholt, 2011). The Doctorate of Nursing Practice (DNP) role consists of synthesizing evidence and implementing best practices in the clinical setting. The educational intervention and system procedural change in this quality improvement project allowed the leadership role of the DNP to positively influence provider adherence with the use of AAPs.
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Improving Provider Adherence with Completion of a Written Asthma Action Plan according to Evidence-Based Practice Guidelines

“Asthma is a chronic medical condition with increasing prevalence in the United States over the last decade” (Rastogi, Shetty, Neugebauer, & Harijith, 2006, p. 619). United States Department of Health and Human Services [DHHS] (2007) indicated more than 22 million Americans have asthma. Economically, asthma costs the U. S. $56 billion annually (Department of Health and Human Services, n.d.). The Centers for Disease Control and Prevention report nine people die from asthma each day (DHHS, n.d.). One of our nation’s healthcare objectives is to reduce asthma morbidity (Cloutier, Hall, Wakefield, & Balit, 2004).

Health care services are intended to prevent, diagnose, and treat illnesses that improve the physical and psychological well-being of all Americans (Agency for Healthcare Research and Quality [AHRQ], 2010). In the past two decades, health care in the U. S. has become evidence-based and research driven. The intent is to offer standardized recommendations to assist health care providers in offering quality health care and improved outcomes. In 1997 the National Heart, Lung, and Blood Institute (NHLBI) data suggested an increase in mortality and morbidity related to asthma (Crim, 2000).

The NHLBI defined asthma as “a complex disorder characterized by variable and recurring symptoms, airflow obstruction, bronchial hyperresponsiveness, and underlying inflammation” (DHHS, 2007, p. 9). This can progress to persistent variations in airway structure and airflow limitation. Inflammation in the airways can be caused by bronchoconstriction, airway hyperresponsiveness, and airway edema (DHHS, 2007).

This study was conducted over a 12-week period during the summer of 2014. There were two aims of the study: (1) an educational intervention regarding the use of a written AAP was
provided to all front office staff, RNs, and providers and (2) health services procedural change (placing a blank AAP on eligible patients' out guide upon checking in at the front office or at RN/Provider discretion). Six weeks later, a repeat educational intervention was conducted as a reminder regarding the written AAP. Questions were answered and concerns were validated. A record review was performed on medical records of patients with a diagnosis of asthma and had received a written AAP during the study period. All qualified medical records were evaluated for adherence with a written AAP for patients with a diagnosis of asthma after the educational reminder.

**Problem Statement**

“Globally, there is an increasing burden of chronic conditions among adolescents and young adults” (Rapley & Davidson, 2010, p. 313). Nearly 19 million adults were diagnosed with asthma in 2010, which is approximately one in 12 adults. Young adulthood is a time of transition in many respects. Due to anxiety and uncertainty, frequently these individuals avoid formal health care until an asthma exacerbation and crisis emerges. Increased adherence with the completion of a written AAP can provide our young adult population, with the potential of preventing school and work absences, emergency room visits, and hospitalizations.

Texas spent over $391.5 million in 2006 for hospital admissions with a primary diagnosis of asthma (Asthma Coalition of Texas, n.d.). Asthma has become a widespread public health concern in Texas and the U.S. The financial burden of this disease is astonishing and undesirably impacts the welfare of the population. Some populations experience the burden more than others. Texas established a coalition with a vision of improving the quality of health and life of Texans with asthma (Asthma Coalition of Texas, n.d.).
The NHLBI established national recommendations in 1991 to simplify the diagnosis and management of asthma. In 1997, the NHLBI revised the recommendations in an effort to address the role of inflammation in the pathogenesis of asthma. This led to an emphasis on inhaled corticosteroids as the first line of preventive therapy (Rastogi et al., 2006). Additional revisions were made in 2002 and the most recent guidelines were published in 2007 (DHHS, 2007). The detailed document by NHLBI provides evidence-based recommendations in a stepwise method to diagnose, treat, and manage asthma (United States Department of Health and Human Services [DHHS], 2007).

Morbidity, mortality, and increased cost for treatment can contribute to non-adherence to treatment regimens and plan of care. Controlling asthma is complex and requires patient and provider involvement. Despite national guidelines from the National Asthma Education and Prevention Program (NAEPP), first-line anti-inflammatory drugs are under prescribed (Cloutier et al., 2005). Lusuardi et al. (2006) concurs that asthma remains underdiagnosed and undertreated. It is critical that barriers to asthma treatment and asthma treatment guidelines are explored to promote compliance with an individual plan of care.

Asthma affects patients, families, and activities of daily life. The NAEPP have converted evidence-based research into clinical practice guidelines. The goal of NAEPP is to encourage communities to provide quality care to those with asthma so they can be active all day and rest well at night (DHHS, 2007).

The decline or remission of asthma symptoms has not proven to be significant (Wolfe-Christensen, Isenberg, Mullins, Carpentier, & Almstrom, 2008). Additionally, often the young adult population will not seek medical advice in spite of worsening symptoms. These individuals are at great risk for morbidity, mortality, and simply poor quality of life. Four
components of care deserve attention in the management of achieving and maintaining asthma control. (1) "Assessment and monitoring, (2) Education for partnership, (3) Control of environmental factors, (4) Comorbid conditions that affect asthma, and medication" (DHHS, 2007, para 4).

Asthma is a complex, variable, and common disease. With some understanding of asthma, recognition of adverse symptoms and possible alterations, patients can be prepared to use an AAP to augment their treatment plan successfully. AAPs provide detailed guidelines during asthma symptoms or exacerbations. With the proper level of health care provider management and teaching concerning self-management, most individuals with asthma should live an energetic life without numerous exacerbations. The Expert Panel 2 Guidelines for the Diagnosis and Management of Asthma (EPR-2 guidelines) emphasized the need for health care personnel to provide asthma education to their patients concerning the disease and treatment methods to attain satisfactory control of asthma symptoms (Navaratnam, Jayawant, Pedersen, & Balkrishnan, 2007).

**Literature Review**

**Search Strategy**

National asthma guidelines and research studies were examined to assess benefits and provider compliance with written AAPs for patients with a diagnosis of asthma. The search was conducted using electronic databases to include The Cochrane library, Cumulative Index to Nursing and Allied Health (CINALH), MEDLINE with MeSH, and PubMed Central (PMC). The literature reviewed focused on ambulatory care settings and school based clinics nationwide. The search was limited to the English language that included research studies, systematic reviews, and clinical practice guidelines.
The initial search terms “asthma education” generated 2,264 publications, “asthma action plan” produced 105 results, while 23 sources were obtained from the search term “provider adherence and asthma action plan” in the CINALH database. MEDLINE with MeSH produced 1,803, 92, and 18 respectively. Using PubMed Central, the same search terms generated 1,904, 103, and 24 respectively.

Evidence Based Practice Guidelines

The NAEPP was established by the NHLBI, established guidelines in 1991, revised in 1997 and 2002, with the newest report issued in 2007. The NHLBI developed comprehensive evidence-based recommendations recognized as the standard in the United States (Wisnivesky et al., 2008). “The ultimate goal of both expert care and patient self-management is to reduce the impact of asthma on related morbidity, functional ability, and quality of life” (Jones, 2008, p. 778).

Several challenges remain, though there has been a decrease in mortality and illness associated with asthma since the initial establishment of these national guidelines (DHHS, 2007). Their objective was to develop a report that would support organizers of health care related to important quality care activities associated with asthma (Williams et al., 2003). Crim (2000) agreed that regardless of national guidelines, there continues to be a need to teach health care providers concerning diagnosis and asthma treatment. Despite long-standing efforts of translating NAEPP guidelines into practice, health care provider adherence has been less than optimal. The NAEPP indicated that every patient diagnosed with asthma should have an AAP (DHHS, 2007). This is supported by the Chair of the Global Initiative for Asthma “Written asthma action plans are an essential part of effective asthma management” (Reddel, 2012, p. 75).
Asthma Control with AAP

Asthma is a chronic disease that varies in symptom frequency and severity. Asthma can be influenced by multiple factors such as provider education. Provider education associated with a written AAP assists in appropriate self-management of asthma symptoms. When asthma symptoms are controlled, patient’s experience less emergency room visits, economic savings, and slower progression of airway remodeling due to inflammation (Jones, 2008). Avoiding triggers, maximizing compliance with controller medication, and increasing patient’s ability to recognize symptoms with a written AAP, leads to improved patient outcomes. The written AAP provides the patient with some liberty to manipulate and modify their plan of care.

Educating patients about a written AAP contributes to fewer missed school or work days, improved activities of daily living, and adequate symptom control (Cloutier, Hall, Wakefield, & Balit, 2005). In a Cochrane review of 36 randomized controlled trials comparing usual care to self-management using an AAP demonstrated fewer emergency room visits and hospital admissions, improved lung functioning, less overall medications use, decreased use of a rescue inhaler, and a decrease in routine health care provider visits (Jones, 2008). Highly motivated health care providers encouraging patient use of written AAPs can influence a patient’s desire to participate in self-managed care leading to improved quality of life.

Significance of AAP

“The written action plan is the single most important strategy of asthma education” (Jones, 2008, p. 779). Individualized written AAPs should include detailed treatments and actions in response to specific changes in symptomology (Jones, 2008). Patients that are familiar with their disease process demonstrated proper management of their care leading to improved outcomes (Jones, 2008). Jones (2008) indicated NAEPP guidelines recommend asthma
education at every patient encounter by all providers. In a Canadian study, 46% of patients in an asthma clinic had an AAP (Beauchesne, Levert, El Tawii, Labrecque, & Blais, 2006). Although, this number was higher than the Canadian mean of 10%, most of the participants were treated by specialist in the area of respiratory medicine (Beauchesne, Levert, El Tawii, Labrecque, & Blais, 2006).

The treatment of asthma is largely managed in ambulatory care settings by primary care providers. Interventions aimed at increased knowledge and enhanced familiarity with national asthma guidelines for primary care providers will contribute to increased confidence and adequate implementation of the widely accepted national asthma guidelines. Initiating and sustaining provider adherence to written AAPs is an essential step in translating these guidelines into improved patient outcomes.

**Obstacles to the Use of AAP**

The Guidelines for the Diagnosis and Management of Asthma is a 74-page document on the United States Department of Health and Human Services website. Providers may perceive the document as too lengthy and cumbersome to read. In a study of 202 self-reported surveys, only 9% of health care providers were aware of national asthma guideline recommendations related to AAPs.

There are limited studies indicating reasons why health care providers do not adhere to national recommendations regarding individualized AAPs. Partridge (2004) indicated health care professional’s factors influencing limited use of written AAPs are related to lack of familiarity with national asthma guidelines, lack of confidence in patients managing their condition, perceived lack of time, and in some healthcare systems, it is perceived as a decrease in revenue. Lack of familiarity regarding national guidelines contributes to decreased patient
compliance with a plan of care, increased emergency room visits, poor patient outcomes, and increased morbidity (Ring et al., 2011).

**Project Framework**

It is important to identify the correlation that exists between nursing theory, practice, and research (Terry, 2012). Identifying barriers and beliefs surrounding provider's adherence to implementing written AAPs is essential in order to assist with the improvement of patient outcomes. The focus on behavior change demonstrates the need for quality improvement in health care. Rather than responding to illness, The Chronic Care Model (CCM) assists with health promotion and disease prevention among individuals and populations (Hung et al., 2008).

The CCM is an expansive conceptual model containing six major areas related to quality improvement. The CCM includes (1) "the health system and organization of care, (2) support of self-management for patients with chronic illnesses, (3) a proactive delivery system design than determines and addresses health needs, (4) clinical decision support for clinicians based on evidence, (5) clinical information systems to assist in providing data, and (6) linkages to community resources" (Young et al., 2008 pS400). Internationally, susceptible young adults with chronic conditions require clinical support and intervention regarding self-management of their enduring illness. Bodenheimer, Wagner, & Grumbach (2002) indicated in their systematic review adult asthmatic patients who were provided self-management support visited the emergency department less often than the usual care group. In an effort to improve patient outcomes in a vulnerable young adult population, the CCM was utilized to assist in self-management of asthma.
Research Question

How did health care providers at The University of Texas at Arlington Health Services (UTAHS) adhere to the completion of a written asthma action plan for patients diagnosed with asthma following an educational intervention?

Study Objective

The study’s objective was to initiate a change in behavior for UTAHS health care providers resulting in use of a symptom-based individualized written AAP in accordance with The National Asthma Education and Prevention Program (NAEPP) for patients with a diagnosis of asthma.

Methods and Procedures

Project Design

Patient medical record reviews were conducted to determine provider adherence with the use of an individualized written AAP in patients with a diagnosis of asthma who met study criteria. Descriptive statistics was used for evaluation after record reviews. An educational intervention related to the significance of a written AAP and a health services procedural change (placing a blank AAP on asthma patients out guide upon check in) was evaluated using a one-group posttest study design. As the Director of Nurse Practitioners, providing oversight of clinical services, I am certain that prior to this study, individualized AAP were not being utilized in any way for patients with asthma at UTAHS. Additionally, providers were not exposed to other interventions (conference) that would have affected their decisions to complete an individualized AAP during the study period.
**Population and Sampling Plan**

The descriptive study was conducted over a 12-week period during the summer months at UT AHS. UT Arlington is one of the most diverse campuses in the country with students from every state and 123 foreign countries (UTA website, 2014). As of Fall 2013, the 33,311 student population was composed of 22% Hispanic, 14% African-American, 10% Asian, and nine percent international (UTA website, 2014). These individuals are primarily young adults. Inclusion criteria consisted of female and male patients 18 and older, all new and existing patients with a diagnosis of asthma who received treatment in the UT AHS general medicine clinic (N = 34). Additionally, patients that had a complaint of asthma, bronchitis, upper respiratory illness, wheezing, coughing, and/or allergies were included. The principle investigator’s charts were included in the sample in an effort to benefit as many patients as possible. The UT AHS medical clinic is staffed by two physicians and three nurse practitioners, which is equal to 3.5 full time equivalents (FTE).

**Measurement Methods**

An educational intervention was provided to all front office staff, RNs, and providers. Educational sessions, each with power point slides, included the purpose of the study, background and significance of a written AAP, role and responsibilities of individual staff members (placing a blank AAP on all eligible out guides), NHLBI guidelines, instructions regarding completion of AAPs, and use of data collected (Appendix B). A health record review tool was developed to measure the outcome variables.

Provider’s adherence with completing a written AAP as documented in the chart was measured as the primary outcome variable (provider adherence with completed written AAP). A medical record review was performed for all patients with the diagnosis of asthma during the
study period. The number of completed AAPs on appropriate patients was measured after the educational in-service and system procedural change. Provider adherence was defined operationally by presence of a completed or partially completed written AAP for all asthma patients seen in general medicine clinic within the specified time frame. Additionally, the operational definition included the level of compliance. Demographic data was collected by the review tool for descriptive statistical purposes. The variables measured were presence of a written AAP present in the record and level of compliance of each AAP. The chart was assigned a number 1 for each section completed. A possible total of 3 was equivalent to a complete AAP. If the total was 1 or 2, the chart was determined to be incomplete. The data collection tool determined: a) if a diagnosis of asthma was documented, b) the visit diagnosis, c) how many visits related to asthma in the past 12 months, and, d) was a glucocorticoid steroid added at this visit. The goal was to assess provider adherence to completing an individualized written AAP after the initial educational intervention and again after a 6-week refresher course. Adherence and compliance levels were analyzed and compared after the 12-week study period.

Data Collection

Approval from the UTA’s Health Services Director and UT Arlington’s Institutional Review Board (IRB) approval was obtained. Then, all front office staff, RNs, and healthcare providers participated in an educational intervention regarding the study’s purpose, application, national guidelines, and steps of using a written AAP. The refresher session 6-weeks after the initial session provided an opportunity to remind individuals involved in the study, parameters as well as clarify any questions. Data collection consisted of (1) AAP placed in patients’ out guide, (2) provider completed the AAP, (3) provider gave AAP to RN, (4) RN made copy of AAP, (5)
RN gave original AAP to patient, (6) duplicate copy of AAP scanned into EHR, (7) AAP placed in locked file cabinet in front office, finally, (8) research assistant completed data collection tool.

Laminated cards were posted on individual computer monitors in the front office, nurses' station, and exam rooms to ensure all eligible patients were included. Paid research assistants, employed by UTAHS conducted the medical record reviews using the data collection tool (Appendix K). Eligible medical records were included if a written AAP was obtained from the locked cabinet in the front office (Appendix J). Information on the data collection tool was de-identified for confidentiality purposes. At the completion of the study, findings were communicated to UTAHS staff.

Data Analysis

Data was entered into Microsoft Office 10.0 Excel version 14 spreadsheets to collect, aggregate, and analyze data. The Excel spreadsheets were imported into IBM SPSS version 22.0 for additional exploration and analysis of data. Data analysis consisted primarily of calculating the standard descriptive statistics of the frequency distributions of demographic attributes of patients and providers participating in the study. Mean, median, and mode of distribution frequencies were examined and compared. The relative proportions of eligible medical records with complete and incomplete written AAPs were examined. The overall adherence of providers completing AAPs and the presence of incomplete AAPs were reported in percentages. Additionally, the compliance level (red/yellow/green) was compared. Data demonstrated how many providers are complying with this best practice by either a completed AAP or partially completed AAP after the educational interventions.
Project Limitations

Providers did not code the diagnosis as primary, secondary, or tertiary. This information would have been helpful to determine if the patients were seeking care for the variables identified as inclusion criteria. Additionally, the data collection tool did not indicate reasons for the AAPs lack of completeness. Understanding the lack of completeness may have provided information regarding the exclusion or inclusion of participants.

A limitation in the project was that the process required multiple departments to be compliant with the data collection process (front office, nursing, and providers). Additionally, the front office staff is not trained in the area of health care. The opportunity for missed study participants exists.

A copy of the AAP was added to the provider color coded out guide for the provider to complete. The process could be improved by adding the AAP to the electronic health record (EHR), allowing RNs and health care providers to access this valuable tool easily. The process would contribute to the improved likelihood that the AAP would be completed.

Twenty minutes were allowed for appointments. The limited time to complete the patient encounter and complete all sections of the AAP was restrictive. Perhaps, the AAP could be completed after the patient encounter with one of the RNs. It is clear that further discussion regarding adequate approach to completing the AAP is warranted.

The small sample size and limited study period prevented using research model designs that could have supported hypothesis testing. This would have provided measurement of differences between levels of completion in terms of statistical significance. The analysis was therefore limited to discovery using exploratory comparisons from descriptive statistics only. Furthermore, this study is limited to a small college health population. The potential for an
internal validity threat exists simply by conducting the project, as well as data was collected during the summer when there are routinely less patients. An external threat to validity for this study is seasonality. Additionally, this study may not be generalizable with other asthma patients in ambulatory care settings (Burns & Grove, 2009). However, the findings based on national recommendations regarding the importance of an individualized written AAP are clearly outlined.

**Results/Findings**

Of the 34 participants in the study, 30 patients met the inclusion criteria for the chart review for the 12-week study period. Four patients had individualized AAPs placed in the out guides but were not included in the medical record review due to incompleteness. Some AAPs were left blank because they were identified as having some complaints for inclusion criteria; however, they did not have a diagnosis of asthma.

Demographic analysis for the 34 patients studied was as follows. Over half of the patients were male N = 20 (59%) with an average age of 30.5 years, compared to N = 14 females (41%) with an average age of 26.5 years (Table 1). Overall mean age was 29 (18 to 54 years). The most commonly occurring age was 21. Ethnicity was represented as such, White 65%, Black 17%, Asian 9%, Hispanic 3%, and unknown 6% (Appendix C).

Of the 30 AAPs in eligible electronic medical records, 25 (74%) had red, yellow, and green sections completed (Table 2). All AAPs were scanned into the EHR, which allowed for easy access with the patient follow-up and modifications. There were more completed AAPs for males than females, compared to more females with partially completed AAPs (Appendix D). The primary visit diagnosis were asthma (27%), allergic rhinitis (15%), cough (13%), followed by either upper and lower respiratory illnesses (Appendix E).
Data was measured for the provider level of compliance. Compliance rate was considered to be high with 25 out of 34 eligible charts with completed AAPs. When comparing APRNs to medical doctors (MDs), APRNs proved to demonstrate better levels of completeness (partial N = 1, incomplete N=1) compared to MDs (partial N = 5, incomplete N = 3). APRNs level of complete compliance was higher (N = 12 of 14, 85.7%) compared to MDs (N = 13 of 20, 65%). In all 3 compliance areas, APRNs demonstrated better completion rates (Table 3).

Overall, providers demonstrated 73.5% compliance with completed AAP (Table 3). This provides a fair comparison for clinical significance, although there is no statistical significance (no p value).

Table 1

Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male</th>
<th>Female</th>
</tr>
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<tbody>
<tr>
<td>Active N-34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>African American</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Asian</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Age (years)</td>
<td>30.5</td>
<td>26.5</td>
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### Table 2

**AAP Completion Compliance**

<table>
<thead>
<tr>
<th>Variable (N-34)</th>
<th>AAP Form</th>
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<tbody>
<tr>
<td>Complete</td>
<td>25</td>
</tr>
<tr>
<td>Partial Complete</td>
<td>5</td>
</tr>
<tr>
<td>Incomplete</td>
<td>4</td>
</tr>
<tr>
<td><strong>AAP Sections</strong></td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Yellow</td>
<td>27</td>
</tr>
<tr>
<td>Red</td>
<td>27</td>
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### Table 3

**Compliance by Provider Type**

<table>
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<th>Asthma Action Plan</th>
<th>APRN</th>
<th>MD</th>
<th>Overall</th>
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<tbody>
<tr>
<td>Complete</td>
<td>85.70%</td>
<td>65.00%</td>
<td>73.50%</td>
</tr>
<tr>
<td>Partial Complete</td>
<td>7.10%</td>
<td>20.00%</td>
<td>14.70%</td>
</tr>
<tr>
<td>Incomplete</td>
<td>7.10%</td>
<td>15%</td>
<td>11.80%</td>
</tr>
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</table>
Discussion

It is important to address health and wellness at multiple levels (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion [USDHHS], 2012). According to AHRQ, (2009) asthma negatively affects their quality of life, as well as their caregivers. This study served as a guide for process improvement with the goal of improved patient outcomes in patients with asthma. Integrating an individualized AAP into the plan of care for patients with asthma endorses the significance of implementing interventions that change social environments.

APRNs have positively affected safe, high-quality health care since nurse practitioner training programs were initiated approximately 50 years ago. Many influential health care organizations have recognized the need for APRNs to address the health care needs and improve patient outcomes in our nation (Stanik-Hutt et al., 2013). The data comparing APRNs and MDs with the completion of AAPs in this scholarly project supports evidence that APRNs contribute to improved patient outcomes and high-quality care.

This process improvement study emphasizes the need to increase awareness regarding the use of AAPs based on evidence-based practice. After the 12-week study period with an educational intervention and system procedural change using evidence-based national guidelines from the NAEPP, providers at UT Arlington Health Services demonstrated an improvement in the completion of an individualized written AAP. It is anticipated that UTAHS providers will sustain the actions of completing individualized AAPs to improve management and patient outcomes. The integration of evidence-based guidelines into the educational intervention served as the impetus for providers to recognize the significance of AAPs for asthmatic patients.
Conclusions

Chronic conditions among young adults in a university setting can present with countless challenges. Navigating the health care process can cause unwarranted stress and anxiety. Creating an environment that allows for individuals to self-manage and decrease exacerbations can improve the lives of patients with asthma as well as decrease the overall burden in the U.S. Wertz et al. (2010), found patients with poor asthma control experienced a decline in quality of life and increased missed days from school and work.

This study which included the educational intervention focused on evidence-based practice regarding the use of written AAPs for patients with a diagnosis of asthma proved beneficial. Most providers achieved a high level of compliance with the completion of the AAPs. Sustainability is notably a challenge (Cloutier, Hall, Wakefield, & Balit, 2005). It is anticipated that UTAHS will continue the use of written AAPs as established by the NHLBI.

Translating the evidence into practice through the use of national guidelines has proven to be an effective reminder to increase adherence for health care providers and improving outcomes related to asthma (Rance, O’Laughlen, & Ting, 2011). This study reminded providers of the importance of implementing national recommendations. Improving adherence builds a trustworthy relationship between the patient and health care provider. The education provided as well as fully engaging the patient in the management of their chronic illness contributes to an improved lifestyle (Crim, 2000). The AAP helps individuals to manage their chronic illness at home. Providing an individualized AAP has an enormous impact on quality of life for these individuals (Battersby et al., 2010).
Implications for Practice

This study served as a baseline for future studies using individualized AAPs in the college setting. Future studies could examine two different time frames (paired sample) to demonstrate if providers are sustaining evidence-based practice according to national recommendations. Quarterly education sessions may be warranted to assist with the sustainability of providers completing individualized AAPs. “Interventions to improve primary care provider adherence to the NHLBI guidelines need to focus not only on increasing knowledge and enhancing skills but also on using workshops or interactive methods to increase clinicians’ beliefs in their ability to effectively implement the guideline recommendations” (Wisnivesky et al., 2008, p. 268).

Future research studies should consider controlling for age, gender, and type of healthcare provider to assist with obtaining individual effect. Studies should be conducted over a longer period to control for seasonality, especially with chronic illnesses such as asthma (Burns & Grove, 2009). Future studies could include assessing the outcomes of periodic trainings versus an isolated educational intervention between different groups.

This project demonstrates the ability to effect change in the health care setting as well as population health. A larger sample size, with more APRNs and MDs over a longer period could determine if there is statistical significance. Nonetheless, this study demonstrated improved adherence with evidence-based practice guidelines related to the use of AAPs.

Knowledge is more likely to result in a change in practice if the needs of the participants are assessed and they contribute to the process of the design. This proved to be very beneficial for this study. Obtaining leadership support from the director and other key stakeholders were advantageous in completing this study and promoting sustainability.
The American Association of Colleges of Nursing (AACN) proclaims that the Doctorate of Nursing Practice provides tools for navigating multifaceted systems and mining the latest knowledge (Zaccagnini & White, 2011). The position statement by AACN defines scholarship as “those activities that systematically advance the teaching, research, and practice of nursing through rigorous inquiry” (Zaccagnini & White, 2011, p. 62). The knowledge gained through this quality improvement process is intended to be translated and disseminated through poster and podium presentation at national conferences such as the American College Health Association, American Association of Nurse Practitioners, and/or Doctor of Nursing Practice. Evaluating previous studies and dissemination of knowledge related to the importance of individualized AAPs according to evidence-based guidelines contributes to the general body of knowledge.

Leadership has been described as “the art and science of influencing a group toward achievement of a goal” (Chism, 2010, p. 37). This is done partly by providing education regarding evidence-based practices to facilitate improved patient outcomes related to asthma management with the use of an individualized AAP. The role of the DNP has the critical responsibility to educate, synthesize, and translate the evidence into practice. As DNP leaders, we must adopt processes that enable constant improvement that is evidence-based and high quality.

Implications for Policy

Effective workforce planning and implementation of policy involves the use of better data collection and information gathering. A recommendation based on the data collected will be to add a radio button on the respiratory and asthma templates in the EHR. The radio button will serve as a reminder to providers to complete an individualized AAP for asthmatic patients.
After the study had been completed, I added the topic to the Provider’s Committee agenda. It was reassuring to know all health care providers were agreeable to continuing this as an organizational standard. This demonstrates a commitment to safe, effective, quality care. This study will serve as a baseline for an outcome study.

The process of adherence to evidence-based guidelines such as completing an AAP for eligible patients should be added to the provider peer review process and annual performance review process. Implementation of the new process should contribute to increased compliance as well as improved patient outcomes. The unique experiences of working in clinical settings coupled with policy are necessary to create actual and noticeable change (Zaccagnini & White, 2011).

“Population health is defined to include aggregate, community, environmental/occupational, and cultural/socioeconomic dimensions of health” (American Association of Colleges of Nursing [AACN], 2006, p. 15). Care delivery models must be examined to incorporate national recommendations and evidence-based practice guidelines. Our nation’s colleges and universities have placed an increasing emphasis on the importance of health promotion and wellness. Ensuring high-quality care for individuals with asthma contributes to the overall improvement in health as well as an economic safeguard at the local, state, and national level (AHRQ, 2009). This project is critical to attaining the national goal of improving the well-being of populations.
References


IMPROVING PROVIDER ADHERENCE


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http://dx.doi.org/10.1016/j.nurpra.2013.07.004


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http://dx.doi.org/10.1016/j.amepre.2008.08.009

APPENDIX A

Educational Intervention Objectives

1. The learner (all individuals) will be able to describe the significance of patients managing their asthma symptoms with a written AAP.

2. The learner (all individuals) will be able to describe the significance of completing a written AAP.

3. The learner (all individuals) will be able to describe how to appropriately place a written asthma action plan on eligible patients out guide.

4. The learner (Provider staff) will be able to describe how to complete the written AAP according to National Asthma guidelines.

5. The learner (Provider staff) will be able to describe barriers to completion of written AAP.
APPENDIX B
Data Collection Process

Step One
• Front Office/RN/Provider can put AAP on patient outguide based on identified complaints and/or Diagnosis: as follow: Asthma; Cough; Allergy Symptoms, Wheezing; URI (Upper Respiratory Infection); Bronchitis

Step Two
• Provider completes AAP during patient visit if applicable. If not applicable, provider can write N/A on AAP (Patient did not have a diagnosis of asthma)

Step Three
• Provider gives outguide to RN with AAP

Step Four
• RN will make a copy of AAP

Step Five
• RN will give original AAP to patient

Step Six
• Duplicate copy of AAP will be scanned into EHR

Step Seven
• After scanning completed, AAP will be placed in locked file cabinet in front office

Step Eight
• Research Assistants will retrieve AAP from locked file cabinet for data collection
APPENDIX C

Ethnicity of Sample

Ethnicity

- Asian: 22 (65%)
- Black: 6 (17%)
- Hispanic: 3 (9%)
- Unknown: 1 (3%)
- White: 2 (6%)

Legend:
- Asian
- Black
- Hispanic
- Unknown
- White
APPENDIX D

Level of Compliance by Age and Gender

Compliance Levels: Comparison by Average Age of Gender

<table>
<thead>
<tr>
<th>Average Age</th>
<th>Complete</th>
<th>Partial</th>
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<tr>
<td></td>
<td>25.2</td>
<td>27.3</td>
</tr>
<tr>
<td></td>
<td>31.0</td>
<td>31.5</td>
</tr>
</tbody>
</table>
APPENDIX E

Visit Diagnosis Volume

- 493.90 - Asthma 27%
- 477.9 - Allergic rhinitis 15%
- 786.2 - Cough 13%
- 465.90 - Upper Respiratory Infection 6%
- 462.00 - Pharyngitis 8%
- 382.9 - Otitis Media 4%
- 490.00 - Bronchitis 4%
- 461.9 - Sinusitis 3%
- 464.00 - Laryngitis 3%
- 463.00 - Tonsillitis 2%
- Other 15%
- 786.2 - Cough 13%
- 465.90 - Upper Respiratory Infection 6%
- 462.00 - Pharyngitis 8%
- 382.9 - Otitis Media 4%
- 490.00 - Bronchitis 4%
- 461.9 - Sinusitis 3%
- 464.00 - Laryngitis 3%
- 463.00 - Tonsillitis 2%
- Other 15%

IMPROVING PROVIDER ADHERENCE
APPENDIX F

Compliance by Provider Type

APRN Compliance Levels for 14 Patients:
- Higher than Overall Complete (25 Patients)
- Lower than Overall Partial and Incomplete

MD Compliance Levels for 20 Patients:
- Lower than Overall Compliance (25 Patients)
APPENDIX G

IRB Approval

May 12, 2014
Stephanie Johnson
Dr. Sharolyn Diligo
The University of Texas at Arlington
School of Nursing
Box 19407

EXPEDITED APPROVAL OF HUMAN SUBJECT RESEARCH WITH WAIVER OR ALTERATION TO INFORMED CONSENT

IRB No.: 2014-0612
TITLE: Improving Provider Adherence with Completion of A Written Asthma Action Plan According To Evidence-Based Practice Guidelines
Effective Date: May 9, 2014
Expiration Date: May 9, 2015

Approved Number of Participants: 300 (Do not exceed without prior IRB approval).

The University of Texas Arlington Institutional Review Board (UTA IRB) has made the determination that this research protocol involving human subjects is eligible for expedited review in accordance with Title 45 CFR 46.110(a)-(b)(1), 63 FR 60364 and 63 FR 60353, categories (5)(7). The IRB Chairperson (or designee) approved this protocol effective May 9, 2014, IRB approval for the research shall continue until May 9, 2015.

APPROVED NUMBER OF PARTICIPANTS:
This protocol has been approved for enrollment of a maximum of 300 participants and is not to exceed this number. If additional data are needed, the researcher must submit a modification request to increase the number of approved participants before the additional data are collected. Exceeding the number of approved participants is considered an issue of non-compliance and will result in the destruction of the data collected beyond the approval number and will be subject to deliberation set forth by the IRB.
WAIVER/ALTERATION OF INFORMED CONSENT
The above referenced study qualifies for a waiver of the requirement to obtain documentation of written Informed Consent under the federal guidelines for the protection of human subjects as referenced at Title 45 CFR 46.117 (c). An IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds:

1. That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality.

AND/OR

2. Pursuant to §46.117(c)(2), the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

MODIFICATION TO AN APPROVED PROTOCOL:
Pursuant to Title 45 CFR 46.103(b)(4)(iii), investigators are required to, “promptly report to the IRB any proposed changes in the research activity, and to ensure that such changes in approved research, during the period for which IRB approval has already been given, are not initiated without prior IRB review and approval except when necessary to eliminate apparent immediate hazards to the subject.” Modifications include but are not limited to: Changes in protocol personnel, number of approved participants, and/or updates to the protocol procedures or instruments and must be submitted via the electronic submission system. Failure to obtain approval for modifications is considered an issue of non-compliance and will be subject to review and deliberation by the IRB which could result in the suspension/termination of the protocol.

ANNUAL CONTINUING REVIEW:
In order for the research to continue beyond the first year, a Continuing Review must be completed via the online submission system within 30 days preceding the date of expiration indicated above. A reminder notice will be forwarded to the attention of the Principal Investigator (PI) 30 days prior to the expiration date. Continuing review of the protocol serves as a progress report and provides the researcher with an opportunity to make updates to the originally approved protocol. Failure to obtain approval for a continuing review will result in automatic expiration of the protocol all activities involving human subjects must cease immediately. The research will not be allowed to commence by any protocol personnel until a new protocol has been submitted, reviewed, and approved by the IRB. Per federal regulations and UTA’s Federallywide Assurance (FWA), there are no exceptions and no extensions of approval granted by the IRB. The continuation of study procedures after the expiration of a protocol is considered to be an issue of non-compliance and a violation of federal regulations. Such violations could result in termination of external and University funding and/or disciplinary action.

ADVERSE EVENTS:
Please be advised that as the principal investigator, you are required to report local adverse (unanticipated) events to The UT Arlington Office of Research Administration; Regulatory Services within 24 hours of the occurrence or upon acknowledgement of the occurrence.
HUMAN SUBJECTS TRAINING AND CONFLICTS OF INTEREST DISCLOSURE:
All investigators and key personnel identified in the protocol must have documented Human Subjects Protection (HSP) training on file AND must have filed an annual Conflict of Interest Disclosure (COI) with The UT Arlington Office of Research Administration: Regulatory Services. HSP completion certificates are valid for 2 years from completion date.

COLLABORATION:
If applicable, approval by the appropriate authority at a collaborating facility is required prior to subject enrollment. If the collaborating facility is engaged in the research, an OHRP approved Federalwide Assurance (FWA) may be required for the facility (prior to their participation in research-related activities). To determine whether the collaborating facility is engaged in research, go to: http://www.hhs.gov/ohrp/humansubjects/assurance/engage.htm

CONTACT FOR QUESTIONS:
The UT Arlington Office of Research Administration; Regulatory Services appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Robin Dickey by calling 817-272-9329.

Sincerely,

Maria Martinez-Costo, Ph.D.
Associate Professor
UT Arlington IRB Chair
APPENDIX H

Letter of Support

Dear Members of The University of Texas at Arlington Institutional Review Board,

I write this letter in support of Stephanie L. Johnson (DNP student) conducting an investigation related to provider’s adherence to a written asthma action plan at The University of Texas at Arlington Health Services (UTAHS). I have been made aware that the information on the data collection tool will be unidentifiable. In addition, I am aware that research assistants (employees of Health Services) will contribute to the success of this project. All research assistants and investigator will have completed The University of Texas at Arlington’s human subject training prior to submission for approval to the Institutional Review Board.

Please do not hesitate to contact me with questions or concerns,

Yours sincerely,

Robert W. Blum DHA, MBA, FACHE
Director
rwblum@uta.edu
817-272-0679
Hi Stephanie,

Yes, you are absolutely fine to go ahead and use the Asthma Action Plan in your IRB proposal as outlined. In fact, you can just print the copies off that you need. Here is a direct link.

Please stay in touch and let me know how your research goes. We can discuss UTA's further use of the form when the time come.

Warm regards,

S

SuzAnn Summers, MLIS
Resource Management Specialist | Patient and Provider Publications
Central Office
36 South State Street, Suite 2100
Salt Lake City, UT 84111
Office: 801-442-2963 | suzann.summers@imail.org
### APPENDIX J

**Asthma Action Plan**

<table>
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<tr>
<th>Date:</th>
<th>Patient name:</th>
<th>DOB:</th>
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</table>

<table>
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<tr>
<th>MD</th>
<th>EMP</th>
<th>Reviewed with: patient/ guardian</th>
<th>Verbalized understanding</th>
<th>yes</th>
<th>no</th>
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</thead>
</table>

#### ASTHMA ACTION PLAN

**GO**

- Breathing is easy
- No coughing
- No wheezing
- No shortness of breath
- Can work, play, and sleep easily
- Using quick-relief medication less than twice a week
- Other: __________________

**Doing well**

- Take CONTROLLER medication:
- Take QUICK-RELIEF medication before exercise or exposure to a trigger:

**Keep ORAL STEROIDS on hand:** use in yellow and/or red zone as outlined below.

**CAUTION**

- Coughing
- Wheezing
- Shortness of breath
- Difficulty with physical activity
- Waking at night
- Tightness in chest
- Other: __________________

**Asthma is getting worse**

**Step up therapy**

- Medication is not helping
- Breathing is very difficult
- Cannot walk or play
- Cannot talk easily
- Other: __________________

**STOP**

**Medical alert!**

**get help now**

- GO TO an URGENT CARE CLINIC or HOSPITAL emergency room immediately — or CALL 911.

**As you wait for help:**

- CONTINUE taking quick-relief medication.
- Continue or ADD ______ mg oral steroids (if not already taking)

**Asthma symptoms can get worse quickly. When in doubt, seek medical help.**

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APPENDIX K
Data Collection Tool

Demographic Data:

Health Record Review Date ______________________

Research Subject # ________________

Age (Years) ________________

Ethnicity _________________________

Gender Female Male

Visit Diagnosis _________________________

Provider # ________________

Documented Diagnosis of Asthma Yes No

How many visits has the patient had in the previous 12 months related to asthma? ______

Was an inhaled glucocorticoid steroid added at this visit? YES NO

Is the written AAP present in the medical record? YES NO

Is the written AAP present in the EHR and all sections complete? YES NO

Incomplete sections GREEN Y/N

YELLOW Y/N

RED Y/N

<table>
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<tr>
<th>Visit Date for previous 12 months</th>
<th>Diagnosis of: (Bronchitis/AR/Cough/Wheezing/URI/Asthma)</th>
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APPENDIX L

Privacy Practices

Texas State Privacy Law (HB 300)

Effective Date: 04/14/2003
Revised Date: 03/20/2012

THIS NOTICE DESCRIBES HOW MEDICAL INFORMATION ABOUT YOU MAY BE USED AND DISCLOSED AND HOW YOU CAN GET ACCESS TO THIS INFORMATION. PLEASE REVIEW IT CAREFULLY.

1. Purpose: The University of Texas at Arlington Health Services (UTAHS), its professional staff and employees follow the privacy practices described in this Notice. UTAHS is required by State Law to maintain the privacy of your health information, and to protect the integrity, confidentiality, and availability of your health information when it is collected, maintained, used or transmitted by Health Services. However, UTAHS must use and disclose your medical information to the extent necessary to provide you with quality health care. To do this, UTAHS must share your medical information as necessary for treatment, payment, and health care operations.

2. What Are Treatment, Payment, and Health Care Operations? Treatment includes sharing information among health care providers involved in your care. For example, your provider may share information about your condition with the pharmacist to discuss appropriate medications or with radiologists or other consultants in order to make a diagnosis. Health Services may use your medical information as required to obtain payment for your treatment. We also may use and disclose your medical information to improve the quality of care, for example, for review and training purposes.

3. How Will UTAHS Use My Medical Information? Your medical information may be used or disclosed, unless you ask for restrictions on a specific use or disclosure, for the following purposes:

- Family members or close friends who may consent to your treatment or who are involved in the payment for your treatment.
- American Red Cross (or a government disaster relief agency) if you are involved in a disaster relief effort.
- Appointment reminders.
- To inform you of treatment alternatives or benefits or services related to your health that may be of interest to you. (You will have an opportunity to refuse to receive this information.)
- As required by law.
- Public health activities, including disease prevention, injury or disability; reporting child abuse or neglect; reporting reactions to medications or product problems; notification of recalls; infectious disease control; notifying government authorities of suspected abuse, neglect or domestic violence (if you agree or as required or authorized by law).
- Health oversight activities, e.g., audits, inspections, investigations, and licensure.
- Lawsuits and disputes.
- Law enforcement (e.g., in response to a court order or subpoena).
- Certain research projects approved by an Institutional Review Board.
- To prevent a serious threat to health or safety.
- National security and intelligence activities.
- Workers' Compensation. (Your medical information regarding benefits for work-related illnesses may be released as appropriate.)
- To carry out treatment, payment, and health care operations functions through business associates (e.g., to install a new computer system).
- Alcohol and drug abuse information has special privacy protections. UTAHS will not disclose any information identifying an individual as being a patient or provide any medical information relating to the patient's substance abuse treatment unless: (i) the patient consents in writing; (ii) a court order requires disclosure of the information; (iii) medical personnel need the information to meet a medical emergency, (iv) qualified personnel use the information for the purpose of conducting scientific research, management audits, financial audits, or program evaluation; or (v) it is necessary to report a crime or a threat to commit a crime, or to report abuse or neglect as required by law.
4. **Your Authorization Is Required for Other Disclosures.** Except as described above, we will not use or disclose your medical information unless you authorize (permit) UT AHS, in writing, to disclose your information. You may revoke your permission, which will be effective only after the date of your written revocation.

5. **You Have Rights Regarding Your Medical Information.** You have the following rights regarding your medical information, provided that you make a written request to invoke the right on the form provided by UT AHS:

   - **Right to request restriction.** You may request limitations on your medical information we use or disclose for health care treatment, payment, or operations (e.g., you may ask us not to disclose that you have had a particular procedure), but we are not required to agree to your request. If we agree, we will comply with your request unless the information is needed to provide you with emergency treatment.

   - **Right to confidential communications.** You may request communications in a certain way or at a certain location, but you must specify how or where you wish to be contacted.

   - **Right to inspect and copy.** You have the right to inspect and copy your medical information regarding decisions about your care; however psychotherapy notes may not be inspected or copied. We may charge a fee for copying, mailing and supplies. Under limited circumstances, your request may be denied; in some cases you may request review of the denial by another licensed health care professional chosen by UT AHS. Health Services will comply with the outcome of the review.

   - **Right to request amendment.** If you believe that the medical information we have about you is incorrect or incomplete, you may request an amendment on the form provided by UT AHS, which requires certain specific information. Health Services is not required to accept the amendment.

   - **Right to a copy of this Notice.** You may request a paper copy of this Notice at any time, even if you have been provided with an electronic copy. You may obtain an electronic copy of this Notice at our web site, http://www.uta.edu/healthservices.

6. **Notice of Security Breach.** UT AHS is required to notify you if your protected health information has been breached. The notification will occur by first class mail within 60 days of the event. A breach occurs when there has been an unauthorized use or disclosure that compromises the privacy or security of protected health information. The notification requirements under this section only apply if the breach poses a significant risk for financial, reputational, or other harm to you. The notice will contain the following information: (1) a brief description of what happened, including the date of the breach and the date of discovery of the breach; (2) the steps you should take to protect yourself from potential harm resulting from the breach; and (3) a brief description of what we are doing to investigate the breach, mitigate losses, and to protect against further breaches. Not every impermissible use or disclosure of protected health information constitutes a reportable breach. The determination of whether an impermissible breach is reportable hinges on whether there is a significant risk of harm to you as a result of impermissible activity. For example, if your protected health information was inappropriately shared with a billing clerk and she understood her confidentiality obligations, you would not need to be notified of the breach. If we inadvertently disclosed that you received services at UT AHS, without more specifics, this also may not be a reportable breach because it may not have been a significant risk of financial or reputational harm. The key to determining potential harm is whether sufficient information was released to allow identity theft or harm you because of the likelihood of sharing sensitive health data.
7. Requirements Regarding This Notice. UT AHS is required by law to provide you with this Notice. We will be governed by this Notice for as long as it is in effect. UT AHS may change this Notice and these changes will be effective for medical information we have about you as well as any information we receive in the future. Each time you register at UT AHS for health care services, you may receive a copy of the Notice in effect at the time.

8. Complaints. If you believe your privacy rights have been violated, you may file a complaint with the University of Texas at Arlington, Director of Health Services, 605 S. West Street, Box 19329, Arlington, TX 76019, 817-272-0679. To obtain further information about the federal privacy rules or to submit a complaint to the Texas Department of State Health Services, you may contact the Department by telephone at 214-767-4056, fax at 512-458-7111 or by electronic mail at www.dsha.tx.us, or by postal mail addressed to:

Texas. Department of State Health Services
1100 W. 49th Street
Austin, TX 78756

You will not be penalized or retaliated against in any way for making a complaint to UT AHS or the Texas Department of State Health Services.

Contact the University of Texas Arlington's Director of Health Services at 817-272-0679 if:
• You have a complaint;
• You have any questions about this Notice;
• You wish to request restrictions on uses and disclosures for health care treatment, payment, or operations; or
• You wish to obtain a form to exercise your individual rights described in paragraph 8.
APPENDIX M

Permission Letter for Chronic Care Model

From: Becky Krumm
Date: 11/11/2014 5:45 AM (GMT-06:00)
To: "Johnson, Stephanie L"
Subject: RE: Chronic Care Model

Dear Ms. Johnson--
You are welcome to use the Chronic Care Model figure in the manner you describe. Thank you and good luck with your studies.

Best wishes,

Becky Krumm
Managing Editor
Self-Assessment Programs
American College of Physicians
190 N Independence Mall West
Philadelphia, PA 19106
p: 215-351-2555
e: bkrumm@acponline.org
Appendix N

Chronic Care Model

The Chronic Care Model

Community

- Resources and Policies
- Self-Management Support

Health Systems

- Organization of Health Care
- Delivery System Design
- Decision Support
- Clinical Information Systems

Informed, Activated Patient

Productive Interactions

Improved Outcomes

Prepared, Proactive Practice Team

Developed by The MacColl Institute
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