IMPLEMENTING THE BREATHE EASY PROTOCOL: A QUALITY IMPROVEMENT PROJECT TO STANDARDIZE ASTHMA MANAGEMENT IN A RURAL PRIMARY CARE SETTING

by

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ABSTRACT

Background: Asthma is one of the most common chronic lung diseases in the United States and is characterized by cough, wheezing, and breathlessness. Asthma management aims to reduce symptoms to provide a higher quality of life with better symptom management. Utilizing a written asthma action plan (AAP) is one method to standardize asthma management and give patients a written plan to manage their symptoms best using their prescribed asthma medications. This project aims to implement the Breathe Easy Protocol in rural primary care.

Methods: For this quality improvement project, the Knowledge-to-Action Model will be utilized. The Breathe Easy Protocol uses an asthma control test (ACT) scoring tool and an electronic asthma action plan within the EHR. Throughout the implementation of the Breathe Easy Protocol, evaluations will be conducted to evaluate the clinic staff's perception and usability of the protocol. Chart audits will also be completed six weeks, ten weeks, and fourteen weeks after implementation to evaluate the percentage of asthma patients who have a completed asthma control test (ACT) and an electronically completed asthma action plan within the EHR with an end goal of 80% of patients with an asthma action plan by May 2023.

Results: After the 8-week implementation period, in a post-implementation survey, clinic staff reported they were confident identifying which patients were to be screened with the ACT tool. Providers reported feeling confident in their ability to assess, manage and treat pediatric asthma patients and were satisfied with the new management tool.

Conclusion: Implementing The Breathe Easy Protocol was a significant step toward a standardized approach to managing asthma that aligns with clinical practice guidelines in this rural community clinic. More work needs to be done to evaluate the effectiveness of the new workflow by evaluating patient charts for completeness of the ACT scoring tool along with an updated asthma action plan. Further work with the Breathe Easy Protocol could also center around implementation in an inpatient setting.

CHAPTER ONE

INTRODUCTION

In Montana, more than 100,000 people have been diagnosed with asthma, which equates to approximately 10% of adults and 7% of children. In 2018, more than 2,000 emergency visits and 459 hospital admission days were related to asthma (Montana Department of Public Health and Human Services (MDPHHS), 2021a). The burden of effects of asthma range from missed school days and missed days of work by parents/guardians to multiple emergency department visits, hospitalizations, and death (Janevic et al., 2016). Asthma, a chronic condition that affects the lungs, causes wheezing, feelings of breathlessness, chest tightness, and coughing (Montana Department of Public Health and Human Services (MDPHHS), 2021b). In the United States, asthma affects approximately 6.1 million children; and is the leading cause of chronic illness in the pediatric population (Harrison et al., 2019).

Asthma is an incurable condition; however, with symptom management, appropriate education, and an asthma action plan, optimal asthma control can be achieved, which minimizes severe complications and leads to a higher quality of life. Asthma action plans are a tool given to patients with asthma with detailed instructions related to three zones. A patient is in the "green zone" when their asthma is well controlled, and the action plan designates which medications (controller or emergency medications) should be used to keep the patient in the "green zone." Once patients experience more symptoms and lose control of their asthma, they fall into the "yellow zone." In this zone, the asthma action plan instructs the patient on which medication to initiate, along with dosage and frequency increases, to get the patient back into the "green zone." Lastly, the "red zone" indicates severe symptoms, and the patient is experiencing an emergency

and requires emergency medical treatment. When used correctly, the asthma action plan allows the patient to have control of their symptoms along with a safety net of instructions when their asthma symptoms become uncontrollable. With an asthma action plan, patients can avoid emergency asthma flare-ups and reduce the number of emergency healthcare visits and systemic corticosteroids (Gupta & Kaplan, 2018).

Compelling evidence demonstrates that patients with an asthma action plan experience fewer exacerbations of symptoms, decreased emergency visits, and overall improved quality of life (Pletta et al., 2020; Wu et al., 2019.)

Background and Significance

Asthma continues to affect millions of people nationwide. In 1989, the National Heart, Lung, and Blood Institute (NHLBI) created the National Asthma Education and Prevention Program (NAEPP) to address asthma-related issues. Since then, there have been three updates to the guidelines, most recently in 2007, the Expert Panel Report-3: Guidelines for the Diagnosis and Management of Asthma (EPR-3). Six priority topics were identified within the expert panel to address managing asthma. Since then, the NAEPP created the 2020 focused updates for asthma guidelines to continue to evaluate best practices in managing asthma. Within the EPR-3 and the 2020 focused guidelines, asthma action plans implementation and utilization remain a priority to reach optimal control of asthma symptoms (Cloutier et al., 2020, National Heart Lung and Blood Institutes of Health, 2008). From the priority topics addressed in the EPR-3, the topic that directly relates to this quality improvement project, the Breathe Easy Protocol, is adjustable medication dosing with increased asthma symptoms. Emerging topics discussed in the EPR-3, which the Breathe Easy Protocol aims to align with, include adherence to medications, utilization

of asthma action plans, and the role of community health workers (school nurses) in asthma management.

According to the Asthma and Allergy Foundation of America (2019), the costs of asthma continue to grow. In 2007, in the United States, the total cost of asthma was approximately $57 billion and comprised both direct and indirect costs. Direct costs related to asthma include medication and hospitalizations, with hospitalizations related to asthma exacerbations contributing to the most considerable amount of direct costs, nearly $50.1 billion. Indirect costs of asthma are related to missed school or workdays and loss of pay and contribute to approximately $5.9 billion annually. Nationwide, children miss approximately 10.5 million missed school days annually. The direct cost of asthma per person is approximately $3,259 yearly (Asthma and Allergy Foundation of America, 2019).

Managing Children with Asthma in Rural Montana

Montana's rurality creates challenges in managing patients with asthma; with a population greater than one million, the population density is approximately 7.3 persons per square mile. In 2021, there were approximately 248 primary care providers for every 100,000 people, which is significantly lower than the national standard (Montana Department of Public Health and Human Services (MDPHHS), 2021a). Of the 56 counties in Montana, 46 are considered rural, with a population of less than 10,000. Montana also has seven American Indian reservations and 12 tribes that comprise the second-largest racial group in Montana. Compared to white, non-Hispanic children, American Indian/Alaska Native children have a higher prevalence of asthma. Other health disparities related to asthma include families with a lower household income and obesity. In 2021, the median household income for Montana was $57,000, which is

12% lower than the national average. Approximately 12% of the youth population is considered obese, with more than 1 in 10 children diagnosed as obese. Nearly 20% of the Montana youth American Indian population is obese (Montana Department of Health and Human Services (MDPHHS), 2021). As Montana continues to increase in both population and obesity and decrease the provider-to-population ratio, each asthmatic patient must be provided with a self-managing tool (asthma action plan) to reach optimal control of asthma symptoms. Providing asthmatics and their caregivers with an updated asthma action plan at each healthcare visit can decrease the number of emergency healthcare visits and symptomatic days and lead to a higher quality of life.

Another integral step in managing rural pediatric patients with asthma is to consider including school nurses in managing daily asthma symptoms. Asthma exacerbations are the leading cause of missed school days, and children with poorly controlled asthma are at an increased risk of lower academic performance and poor intellectual development (Al Kindi et al., 2021). School nurses serve as a bridge between healthcare providers and the home. As children spend more than half their time at school, school nurses can provide another layer to asthma management, potentially decreasing missed school days. According to Everhart et al. (2020), in their study "School Nurses' Perspectives on Components of Asthma Programs to Address Pediatric Disparities," there is a significant lack of communication between healthcare providers and schools surrounding asthma management. In their study, the researchers found that less than 12% of students diagnosed with asthma had an asthma action plan on file, and less than 15% of students had asthma medications at the school. The researchers also proclaimed that the prevalence of asthma in the pediatric population is disproportionately higher in children living in

lower-income communities (Everhart et al., 2020). Therefore, a second arm of the Breathe Easy Protocol would be to consider a better collaboration between the rural primary care clinic and the local schools in the community, ensuring that the schools have completed asthma action plans and the appropriate knowledge on how to follow the AAP when a student begins to experience worsening asthma symptoms.

This literature review aims to identify and evaluate how asthma action plans and an asthma scoring tool are utilized to decrease the number of asthma exacerbations and how they may provide pediatric patients with tighter control of their asthma. The Breathe Easy Protocol will be implemented in a rural primary care clinic in Montana. Therefore, results from the literature review will help evaluate the impact of ACT scoring tools and asthma action plans on controlling asthma symptoms.

Literature Review

Method

The literature review focus was the use of asthma action plans in the pediatric population. Several databases were used, including PubMed, Cochrane, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). Article searches were completed in August and September of 2022. The following terms were used in the search: "asthma" OR "asthma management," "asthma AND primary care," “electronic asthma action plans," “asthma action plan," OR "pictorial asthma action plan," "asthma control test' OR "ACT score AND asthma."

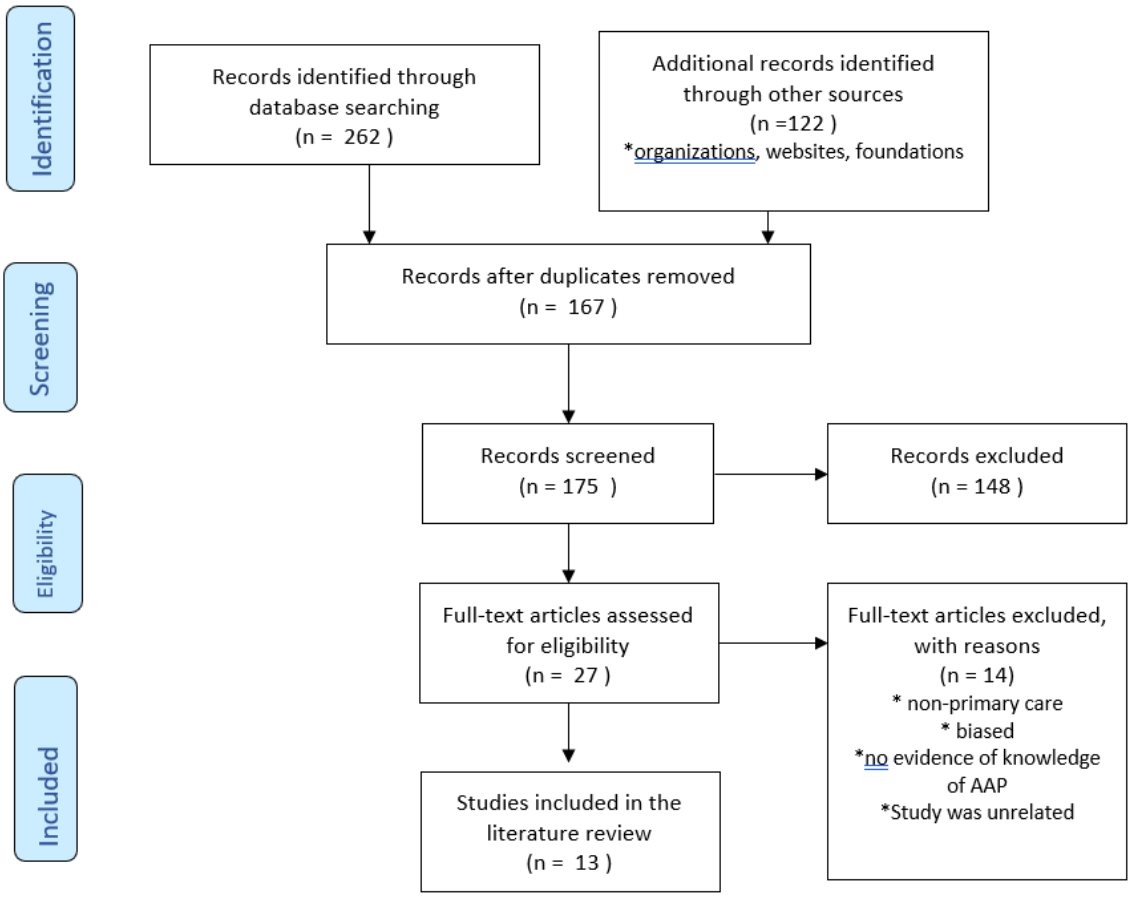
Eligibility

Articles were included in the literature review if they were in English, peer-reviewed, full text was available, and if the literature was published in the last ten years. Excluded articles included duplicates, thesis work, dissertations, literature addressing the emergency care of asthmatic patients, or articles that could not be translated into English.

Study Selection

The initial electronic search yielded 384 results after the search criteria were entered. A total of 167 articles were removed due to duplication among multiple databases. Articles were searched and screened based on their abstracts; 148 articles were removed. Articles were removed from the selection if the article was a pilot study, pediatric patients were not the focus, asthma action plans were not being evaluated or used, emergency asthma care was the main focus, and ACT scoring tools were not used. Articles that specifically focused on urban settings of asthma management were also excluded. The remaining 27 full-text articles were assessed for eligibility and excluded based on the reasons identified in Figure 1. After the articles were excluded based on the identified reasons, 13 articles remained.

Figure 1. PRISMA Diagram.



Discussion

Most articles evaluated for this literature review were broken into overarching themes in managing asthma symptoms. The first theme identified was the use of the asthma control test (ACT), which is one of the critical determinants of asthma symptom control and helps to drive the asthma action plan. Second, asthma management in a rural setting will be discussed as this is a crucial part of the proposed quality improvement project that will be later discussed. The third theme identified from the literature review is the effect of asthma action plans in preventing

emergency room visits. Lastly, evaluating the use of pictorial-based asthma action plans on asthma management will be discussed.

Use of Asthma Control Test

The staple of asthma management is evaluating asthma control. The asthma control test (ACT) quantifies a patient's asthma symptoms/control based on their reported day symptoms, nighttime symptoms, shortness of breath, presence of wheezing, rescue inhaler use, and self-assessed level of control (Lee et al., 2019). Scoring on the ACT ranges from 5-25, with a higher score indicating greater asthma control. Scores between 20-25 indicate well-controlled asthma, and any score below 20 indicates uncontrolled asthma (Lee et al., 2019).

Evaluation of asthma action plans (AAP) on ACT scores was a common theme in the literature review. One such study by Burbank et al. (2015) evaluated using a mobile app-based AAP. The researchers reported that with a mobile AAP, adolescents reported higher ACT scores and more independently managed their asthma symptoms. Before the mobile-app AAP, adolescents with uncontrolled asthma reported their median ACT score as 16; after using the mobile AAP, median scores increased to 18. With the increase in ACT scores after using the mobile AAP, Burbank et al. suggest that with continued use, ACT scores would continue to increase in adolescents with poorly controlled asthma (Burbank et al., 2015).

In their systematic review, Chan et al. (2021) concluded that after implementing asthma action plans, patients reported a decrease in nights with asthma symptoms and fewer days with asthma symptoms. The researchers also found that asthma action plans correlate with fewer missed days from school and fewer parent/caregiver missed days from work due to their child's

asthma. Overall, Chan et al. (2021) report that ACT scores are higher with an AAP, leading to a reportedly better quality of life (Chan et al., 2021).

Asthma Management in Rural Settings

After implementing and utilizing an AAP, asthma symptoms can be controlled to an optimal level. However, as Montana is a rural state, rurality related to asthma control and management should be investigated. Harrison et al. (2020) evaluated the relationship between socioeconomic status and asthma action plans. The researchers found that using asthma action plans in lower socioeconomic status led to higher asthma control test (ACT) scores, indicating well-controlled asthma and better symptom management. Harrison et al. (2020) also concluded that single-child families had a greater incidence of compliance with their personalized asthma action plan (Harrison et al., 2019). With the use of AAP, either as an electronic application or with electronic or pictorial asthma action plans, one can conclude that research supports a positive relationship between asthma action plans, the use of the ACT, and fewer asthma symptoms/exacerbations.

Asthma Action Plans and Emergency Care

Several studies have reported that utilizing asthma action plans results in fewer emergency asthma-related healthcare visits. Janevic et al. (2016) report that one year after the implementation of asthma action plans, there was a decrease in emergency room visits from 3.2 ER visits in 12 months to 1.2 and 2.0 hospitalizations in 12 months to 0.6 hospitalizations. Evaluating daytime and nighttime symptoms is one indicator to determine asthma control. Janevic et al. (2016) also concluded that after utilizing an asthma action plan, parents reported that their children experienced nighttime symptoms 1.2 days per month (decreased from 3.8

days/month) and daytime symptoms decreased from 5.0 days per month to 2.1 days per month (Janevic et al., 2016). Kuhn et al. (2015) reported similar results in their study evaluating the utilization of electronic asthma action plans. The researchers implemented an electronic version of the asthma action plan (EAAP) within a hospital's electronic medical record (EMR). The number of asthma-related hospitalizations was evaluated at three months and 12 months to determine if hospitalizations decreased after implementing an AAP. After implementation, they concluded that Asthma-related ED visits decreased by 41% at three months and 40% at 12 months ($p < .001$). The researchers also evaluated the prescription of corticosteroids in asthma exacerbations. They found that after implementation of the EAAP, corticosteroid use decreased by 51% at three months ($p < .001$) and 34% at 12 months ($p < .001$). The researchers found that asthma exacerbations decreased by 34%, demonstrating that an asthma action plan can lead to fewer sick days, reduced steroid use, and better control of asthma symptoms (Kuhn et al., 2015). Kahn et al. (2013) evaluated the effectiveness of asthma action plans and found similar results; however, the researchers utilized a written and pictorial-based asthma action plan rather than an electronic asthma action plan. After implementing the personalized written and pictorial-based asthma action plan, participants in the trial had fewer ER visits, with a pretrial mean of 1.44 visits and a posttrial mean of 0.69 visits ($p < 0.005$). Kahn et al. (2013) then propose that with the use of an AAP, children have fewer missed school days and fewer unscheduled doctor visits as the asthma action plan empower children and their caregivers to maximize their control over asthma symptoms (Khan et al., 2013).

Pictorial-Based Asthma Action Plans

Pur Ozygit et al. (2013) and Yin et al. (2017) evaluated the usability and effectiveness of pictorial-based asthma action plans (PAAP) for asthmatic patients/caregivers with lower literacy levels while increasing accessibility to care. Both researchers suggest that written asthma action plans can be challenging to comprehend and, therefore, can create barriers when managing asthma symptoms. Yin et al. (2017) report in their study that families who were given pictorial-based asthma action plans demonstrated fewer errors in the knowledge of medications and overall increased knowledge of managing asthma symptoms (Yin et al., 2017). Pur Ozygit et al. (2013) found that with pictorial-based asthma action plans, there was a mild increase in asthma control after implementation, but more importantly, with the use of a pictorial-based asthma action plan, the number of ER visits decreased after using the PAAP (0.85 ± 1.23 from 1.8 ± 2.42, $p = 0.001$) which demonstrates that pictorial based asthma action plans are just as effective as written asthma action plans (Pur Ozyigit et al., 2013). Similarly to Yin et al. (2017), Pur Ozygit et al. (2013) reports that parents perceived the pictorial-based asthma action plan to be easier to follow and understand therefore leading to better control of asthma symptoms and parent/caregiver comfortability using the action plan; which demonstrates that pictorial asthma action plans are an effective tool in managing and controlling asthma (Pur Ozyigit et al., 2013).

Assessing parent's/caregivers comfortability with an asthma action plan is also essential to reaching optimal asthma control and is one of the topics addressed in the Asthma Expert Panel by the National Heart, Lung, and Blood Institute. Tan et al. (2013) and Ring et al. (2017) both report that with an AAP, parents report a better understanding of the critical components of managing their child's asthma; however, proper asthma education is necessary to ensure parents can recognize symptoms related to asthma exacerbations in order to correlate the child's

symptoms to appropriately use the AAP (Tan et al., 2013). Ring et al. (2017) suggest that asthma education paired with healthcare provider support is essential to the success of an AAP and optimal asthma control. Another critical component is acknowledging that learning to manage asthma is a continual and ever-changing process. With appropriate communication, validation, and a positive relationship with healthcare providers, asthma action plans can effectively manage asthma symptoms (Ring et al., 2017).

Compelling evidence continues to demonstrate that patient has reported ACT scores identifying their asthma control, and an updated asthma action plan can provide better asthma control and higher ACT scores.

Practice and Policy Implications

Key takeaways from the literature review demonstrate that the use of ACT and asthma action plans can prevent asthma exacerbations, emergency room visits, the use of corticosteroids, and missed school days, meaning more symptom-free days and a better quality of life. The literature review results strongly suggest that creating a quality improvement project that aims to optimize asthma management, the Breathe Easy Protocol, should be an effective asthma management tool in a rural primary care setting. The Breathe Easy Protocol will utilize ACT scoring tools and asthma action plans in a rural care setting to help pediatric patients reach optimal control of asthma symptoms.

Conclusion

Asthma continues to be one of the most prevalent chronic conditions in the pediatric population. Children from rural communities and lower-income families have a higher incidence

of asthma, and children with asthma miss more school days each year. Results from the literature review demonstrate that with an asthma action plan, optimal asthma control can be reached by giving patients fewer days with asthma symptoms, fewer days requiring steroids, fewer hospitalizations, and an overall better quality of life. As this literature review only evaluated the use of asthma action plans in the pediatric setting, future literature reviews should evaluate the effectiveness of asthma action plans in the adult population.

CHAPTER TWO

PROJECT PROPOSAL

Introduction

In Montana, 10% of adults and 7% of children reportedly have asthma, affecting approximately 6.1 million children nationwide. Asthma is the leading cause of chronic illness in the pediatric population and a leading cause of missed school days and workdays for the parent/caregiver (Harrison et al., 2019). Asthma is an incurable condition; however, an asthma action plan can achieve optimal asthma control. Optimal asthma control leads to fewer severe complications and a higher quality of life. Asthma action plans are a tool given to asthmatic patients with detailed instructions for three zones based on their asthma symptoms. When used correctly, the asthma action plan allows the patient to reach optimal asthma control along with a step-by-step guide on how to treat asthma flares. With an asthma action plan, patients can avoid emergency asthma flare-ups and reduce the number of emergency healthcare visits and systemic corticosteroids (Gupta & Kaplan, 2018).

Problem Statement

At a small rural primary care clinic in Montana, approximately an hour from the nearest hospital, approximately 2,500 patients rely on the primary care clinic to manage their healthcare needs. As driving to the nearest hospital and specialists is over an hour away, this primary care clinic must be able to manage a multitude of illnesses. Most patients who visit the primary care clinic are of lower socioeconomic status or living on/near a reservation, and the city's poverty

level is nearly 21% (Census Reporter, 2020). According to Everhart et al. (2020), pediatric patients from lower-income communities have a higher prevalence of asthma and increased morbidity rates (Everhart et al., 2020). The primary care clinic sees several patients with asthma, and very few of these patients have an asthma action plan or one that has been recently updated.

With implementing the Breathe Easy Protocol, each patient with a diagnosis of asthma will complete an asthma control test (ACT) and have an updated asthma action plan within the electronic health record (EHR) and a printed copy at the end of the visit. Utilizing the new protocol and ensuring each pediatric patient has an updated asthma action plan should provide better symptom management and prevent asthma exacerbations, the need for corticosteroids, and emergency visits/hospital stay.

An article by Kindi et al. (2021) proposes that school nurses play an integral role in promoting health. As children spend most of their time outside the home and in school, it would be beneficial to consider the role a school nurse plays in managing asthma. Kindi et al. (2021) suggest that school nurses should be considered vital members of asthma management as they most often create a therapeutic relationship with the students and have the keen ability to be a second set of eyes to identify when asthma symptoms are beginning to worsen (Al Kindi et al., 2021). Therefore, with the Breathe Easy Protocol, evaluating how school nurses can be involved with the asthma action plans will also be evaluated during the implementation of this protocol. With the parent's approval and appropriate release of information, it would be ideal if a copy of the updated asthma action plan was shared with the local school and school nurse, as the school nurse is a critical player in managing asthma in this rural setting.

Organizational Microsystem

The rural primary care clinic is one clinic within a more extensive healthcare system with hospitals in Montana and Utah. The nearest hospital within the system and specialists are approximately an hour away. However, with Montana winters, this drive can exponentially increase, and hazardous road conditions can make the drive nearly impossible and dangerous. Many of the patients who visit the clinic have a diagnosis of asthma, and few have asthma action plans; as their symptoms are not severe enough for an allergist/pulmonologist referral, the primary care providers are the sole providers managing these patients' asthma. The rural primary care clinic currently uses a system-wide EHR, making it easy for multiple disciplines to access medical records and give patients access to their records through an electronic portal.

Rationale

There is an identified need for change in asthma management at the rural primary care clinic, which leads to questioning the current practice of how pediatric patients with an asthma diagnosis are managed with each clinic visit. As there is no current standard practice for pediatric asthmatic patients, interviews with the clinic's two nurse practitioners led to the discovery that a significant barrier exists to managing asthma patients. The first barrier identified is that paper asthma action plans are often challenging to locate, extra time is required to fill the paper asthma action plan out, and often the completed plan is never scanned into the patient's chart. Therefore, at future visits, the providers both voiced that it is impossible to locate the previous asthma action plan in the patient's EHR to update it as needed. Both providers identified that they see several patients with poorly controlled asthma in the city and surrounding areas. Providers

suggest that managing asthma symptoms would be more manageable if there was a standardized protocol and a way for an easily discoverable electronic asthma action plan to be created within the EHR. Implementing this quality improvement project will follow the knowledge-to-action (KTA) model (White et al., 2021).

The KTA model consists of seven phases, beginning with identifying a problem and adapting the knowledge to the local context. After barriers are identified, interventions are selected to promote this new protocol, including staff education, posters in each clinic room reminding staff to use ACT screenings, and completing asthma action plans. Monitoring and evaluating the new protocol will be an integral part of evaluating the effectiveness protocol. Therefore, surveys and chart audits will be completed monthly to determine if the new protocol will be effectively adopted (Moran et al., 2019).

Specific Aims

The quality improvement project to implement the Breathe Easy Protocol in rural primary care settings aims to ensure that 80% of pediatric patients with a diagnosis of asthma will have a completed asthma action plan and asthma control test (ACT) by May 1, 2023, and 100% of all patients who visit the clinic will have a completed asthma action plan in the EHR and asthma control test by December 31, 2023. As every project must have a starting place, short-term goals include:

- 100% of exam rooms will have a Breathe Easy Protocol reminder sign by January 13, 2023
- 100% of providers will be educated and updated about the Breathe Easy Protocol through a face-to-face conversation by January 13, 2023

- 25% of clinic staff will have completed the Breathe Easy Protocol read and sign by January 22, 2023
- 50% of clinic staff will be able to verbalize the location of ACT scoring tools and the process to include an ACT scoring tool into the rooming process with each asthmatic patient by January 28, 2023

Medium-term goals include:

- 75% of clinic staff will have completed the Breathe Easy Protocol read and sign by February 15, 2023
- In an end-user survey, 50 % of staff will state they are comfortable using the Breathe Easy Protocol by February 15, 2023
- 50% of all asthmatic patients will have a completed electronic asthma action plan and ACT score by February 15, 2023

Long-term goals include:

- 100% of clinic staff will have completed the Breathe Easy Protocol read and sign by March 17, 2023
- In an end-user survey, 90% of staff will state they are comfortable using the Breathe Easy Protocol by March 17, 2023
- 80% of all asthmatic patients will have an ACT score and asthma action plan completed in the EHR by March 17, 2023
- 100 % of all asthma patients will have an ACT score and asthma action plan by December 31, 2023.

Context

The proposed quality improvement project aligns with the National Heart, Lung, and Blood Institutes of Health (2008) recommendations for asthma management in their expert panel report. Key clinical activities and action steps described in the report include educating patients on managing asthma and ensuring providers develop a written asthma action plan. Hence, families can recognize worsening asthma symptoms, change their asthma medications, and prevent emergency medical care or hospitalization (National Heart Lung and Blood Institutes of Health, 2008).

The Breathe Easy Protocol will be implemented in a small rural primary care clinic where most patients are lower-income. Many patients seek care at this clinic in neighboring Indian reservations. The Breathe Easy Protocol aims to target pediatric patients with a diagnosis of asthma. The clinic has two nurse practitioners, one registered nurse (RN), one licensed practical nurse (LPN), and two medical assistants (MA). Non-clinical staff includes two front desk staff who schedule patients and enter their visit problems, one billing person, and the clinic manager. The success of the Breathe Easy Protocol hinges on the cooperation of each multi-level clinic staff.

Intervention

The Breathe Easy Protocol will be an intervention to provide patients with the ability to achieve optimal control of their asthma symptoms. Very few patients who visit the clinic have completed the asthma action plan. Per a nurse practitioner at the clinic, completing an asthma action plan has been challenging due to time constraints. They report that finding a paper-written

asthma action plan is often time-consuming and requires searching through multiple drawers in the clinic. They also report that after an action plan is completed, there is the question of what to do with a completed asthma action plan. It was often challenging to locate a scanned copy within the EHR of a previous action plan. The Breathe Easy Protocol allows for a streamlined process to monitor asthma symptoms and create an action plan that is instantly added to the EHR and can quickly be located at future visits and updated as needed.

Budget and Timeline

The budget for implementing this is projected to be minimal as staff will not be expected to attend educational forums outside their regular work hours. Education will initially occur in January during face-to-face interactions with the staff. An educational handout will be dispersed to each clinic staff member, and each protocol component will be discussed. Staff will then complete a read and sign attesting that they have read and understood the handout explaining the implementation process, location of materials, and proposed outcome of the Breathe Easy Protocol. By January 22, 2023, 50% of staff will have completed the read and sign, and by May 1, 2023, 100% of all staff will have completed the read and sign. By January 28, 2023, signs will be placed in each clinic room as a reminder to complete the Breathe Easy Protocol for pediatric asthmatic patients (Appendix A).

Protocol: Step One

The first step of the protocol involves identifying each asthmatic patient who visits the primary clinic. Front-desk staff will identify asthma patients when they check in for their appointment. Staff will then have to ensure that an ACT scoring tool is added to their chart to be completed before the MAs or nurses room the patient. ACT forms will also be placed in each

clinic room to be completed with the nurse practitioner if one was not previously filled out during the rooming process.

After evaluating the ACT screening tool, the nurse practitioner will determine the patient's overall control of their asthma symptoms and whether they require any change to their current asthma management. Following the guidelines from the Global Initiative for Asthma (GINA), the nurse practitioner will complete an asthma action plan. Each clinic within the larger hospital system has adopted EPIC as the EHR. Within EPIC, an electronic version of an asthma action plan can quickly be initiated, updated, and shared across clinic sites and the hospital if the patient visits the emergency room during an acute exacerbation or inpatient setting. The provider will complete the electronic asthma action plan, which will become a part of the patient's electronic medical record. A printed copy will be provided to the patient in their after-visit summary. By March 17, 2023, 80% of patients will have completed an ACT screening tool during their appointment at the clinic, and 80% of all pediatric asthmatic patients will have a completed asthma action plan at the end of their appointment. By March 17, 2023, 100% of clinic staff will have completed the read-and-sign and reported adequate knowledge about the Breathe Easy Protocol with an overall survey score of four or more.

Potential Barriers

Change is often perceived negatively. Therefore, identifying barriers and developing ways to circumnavigate these barriers is an essential component of this protocol. One barrier identified is staff buy-in to a change in workflow processes. One barrier addressed in this step is failing to identify a patient with an asthma diagnosis during check-in. In order to overcome this barrier, ACT scoring tools will be placed in each exam room to be completed with a provider. A

second barrier is that providers may find the asthma action plan time-consuming to fill out; therefore, recommended guidelines for asthma management will be placed in each exam room in a marked folder with The Breathe Easy Protocol. One last barrier identified is the staff's perception of the protocol and ease of use. If the staff finds the protocol time-consuming and challenging, it can be hypothesized that fewer action plans will be completed. To overcome this barrier, staff will be surveyed at four weeks and eight weeks after implementation to identify staff perception and suggested improvements to the protocol to increase utilization.

Evaluation

Evaluation of the implemented protocol will occur at four and eight weeks by evaluating the staff and performing chart audits. Staff engagement is a priority for the success of this quality improvement project. Therefore, clinic staff will be surveyed four weeks and eight weeks after implementation to evaluate their knowledge surrounding the new protocol and comfort with completing the screening tool and ensuring each patient has a printed asthma action plan at the end of their visit.

Staff and Provider Evaluations

The evaluation tool with be a three-point Likert scale, where the evaluators must indicate whether they *agree, neither agree nor disagree, or agree*. There will be a job-specific evaluation for clinic staff and providers. Clinic staff will answer the following questions “I am confident identifying which patients need to have an asthma control test (ACT) placed on their chart at check-in,” “I am confident that I know where ACT scoring tools are located for patients to fill out,” and “I am confident how to calculate the ACT score.” The providers will be evaluated on

how confident they are in their ability to assess and manage or treat pediatric asthmatic patients and will answer the following questions, “I feel confident in my ability to assess pediatric asthmatic patients,” “I feel confident in my ability to manage and treating pediatric asthmatic patients,” “I am satisfied with the current process on how I assess, manage/treat pediatric asthma patients,” “I am confident that the Breathe Easy Protocol helps me assess pediatric asthma patients.” Finally, “I am confident that the Breathe Easy Protocol helps me treat/manage pediatric asthma patients.”

By the end of eight weeks, the end goal is that 90% of staff will report they are confident using the Breathe Easy Protocol and have sufficient knowledge to locate and complete the ACT screening tool and provide patients with an updated asthma action plan at the end of their visit.

Chart Audits

Chart audits will be instrumental in evaluating the effectiveness of this new protocol. An audit will be conducted each week to identify pediatric patients who have visited the clinic with an asthma diagnosis. The charts will then be evaluated to determine if the patient completed ACT scoring tools to determine their asthma control and if the provider completed an asthma action plan within the EHR during the appointment. Data from the chart audits will be evaluated weekly to identify gaps and trends as to why ACT screening tools are being missed, or action plans are not completed. Two long-term goals were identified to evaluate the effectiveness of the breathe easy protocol. The first long-term goal is that by March 25, 2023, 80% of all pediatric patients diagnosed with asthma will have completed an ACT scoring tool and an updated asthma action plan in the EHR. The final goal, which will be evaluated, eleven months after

implementation, is that 100% of pediatric patients with asthma diagnoses will have completed an ACT scoring tool and have an updated asthma action plan by December 31, 2023.

Project Goals

Table 1. SMART Goal #1: Short-term.

SMART GOAL #1: By January 13, 2023, all exam rooms in the clinic will have Breathe Easy Protocol reminder signs, ACT screening tools, and Breathe Easy Protocol folders with asthma guidelines • This goal is set at 100% as it will be quick and easy to place the reminder signs and tools in each of the eight rooms		
• The reminder signs were created with three bullet points to catch the staff's attention and to remind staff that each asthmatic patient should have an ACT screening tool on the chart and be completed by the patient along with a completed asthma action plan • Folders with asthma guidelines/recommendations and ACT scoring tools will be placed in each room		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Evaluating that each room has the sign displayed	The lead project investigator will place the sign in each room	The lead investigator will evaluate that each room has the signs by January 13.

Table 2. SMART Goal #2: Short-term.

SMART GOAL #2: By January 13, 2023, 100% of providers will be educated and updated about the Breathe Easy Protocol and complete the read and sign • This goal is set at 100% as there are only two providers in the clinic who have been key informants throughout the process of creating the new protocol and have identified a gap in asthma management		
• Folder with stepwise approach recommendations from UpToDate and GINA will be discussed with providers for quick references • Education about where to find asthma action plans and how to complete the AAP will be discussed with providers • Read and sign will be created for the providers		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Read and sign for the two providers	The lead project investigator will have a face-to-face interaction with both providers and update them on the new protocol and end goals	The lead investigator will evaluate the signature sheet on January 13. 2023 after the face-to-face discussion

Table 3. SMART Goal #3: Short-term.

SMART GOAL #3: By January 22, 2023, 25% of clinic staff will have completed the Breathe Easy Protocol read and sign. This goal is set at 25% as it is hypothesized that at least one to two staff members will be sick the first few weeks of implementation, and face-to-face interactions and education may be limited by staff accessibility		
Materials included with the read and sign include the process change of including ACT scoring tool on each asthmatic patient's chart, a copy of the ACT scoring tool, expected outcomes and goals Signature sheet will be created		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Number of staff members who have completed the read and sign	The lead project investigator will gather the read and sign and evaluate how many staff members have completed the signature sheet.	The lead investigator will evaluate the signature sheet daily during the week of January 16. 2023

Table 4. SMART Goal #4: Short-term.

SMART GOAL #4: 50% of clinic staff will be able to verbalize the location of ACT scoring tools and the process to include an ACT scoring tool into the rooming process of each asthmatic patient by January 28, 2023 • Identifying that multiple surveys sent through email are often overlooked, a face-to-face check-in with clinic staff asking about the new process will be completed		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Staff member's ability to explain the new process and where ACT tools are located	The lead project investigator will ask Staff members about the new process and appropriate steps to identify asthmatic patients and where ACT tools are located	The lead investigator will evaluate the signature sheet daily during the week of January 16. 2023

Table 5. SMART Goal #1: Medium-term.

SMART GOAL #1: 75% of clinic staff will have completed the Breathe Easy Protocol read and sign by February 15, 2023 • This goal is set at 75% to allow for variance due to staff who may be out on leave during the initial implementation phase		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Number of staff members who have completed the read and sign	The lead project investigator will gather the read and sign and evaluate how many staff members have completed the signature sheet.	The lead investigator will evaluate the signature sheet daily during the week of February 15, 2023

Table 6. SMART Goal #2: Medium-term.

SMART GOAL #2: In an anonymous survey utilizing a Likert scale, 50% of staff will acknowledge they are comfortable using the Breathe Easy Protocol with an overall score of 3.5 by February 15, 2023 • This goal is set to 50% as staff may not have had to utilize the new workflow of identifying asthmatic patients, placing an ACT scoring tool on each chart, and ensuring each patient completes the scoring tool		
• A survey will be created for clinic staff • The survey will be dispersed in person to each clinic staff member starting February 1, 2023, ensuring one week to complete the survey		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Staff surveys will be collected on March 1, 2023	The lead project investigator will gather surveys on March 1, 2023	The lead investigator will evaluate the signature sheet daily during the week of February 15, 2023

Table 7. SMART Goal #3: Medium-term.

SMART GOAL #3: 50% of all asthmatic patients will have a completed asthma action plan and ACT score by February 15, 2023 • This goal is set at 50% to allow for variance related to the new workflow process and screening of every asthma patient.		
• The project lead will work with IT to determine how to run audit reports • Audit reports will be conducted weekly to evaluate ACT screening tools and the number of completed asthma action plans • Trends will be evaluated to determine barriers to completing screening tools and action plans		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Number of asthmatic patients from March 1 to February 1 that have completed ACT scores and asthma action plans	The lead project will run audits in the EHR weekly to quantify the number of ACT screening tools and asthma action plans	Graphs will be created every two weeks based on the number of ACT screening tools and asthma action plans

Table 8. SMART Goal #1: Long-term.

SMART GOAL #1: 100% of clinic staff will have completed the Breathe Easy Protocol read and sign by March 17, 2023		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Number of staff members who have completed the read and sign	The lead project investigator will gather the read and sign and evaluate how many staff members have completed the signature sheet.	The lead investigator will evaluate the signature on March 17, 2023, to ensure 100% of clinic staff have completed the required education

Table 9. SMART Goal #2: Long-term.

SMART GOAL #2: In an anonymous survey utilizing a Likert scale, 90% of staff will acknowledge they are comfortable using the Breathe Easy Protocol and possess adequate knowledge of the new protocol with an overall score of 3.5 by March 17, 2023 • This goal is set to 90% as some staff may have had limited interaction with the new protocol		
• A survey will be created for clinic staff • The survey will be dispersed in person to each clinic staff member starting March 14, 2023, ensuring five days to complete the survey		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Staff surveys will be collected on March 17, 2023	The lead project investigator will gather surveys on March 17, 2023	The lead investigator will evaluate the signature sheet daily during the week of March 17, 2023

Table 10. SMART Goal #4: Long-term.

SMART GOAL #4: 80% of all asthmatic patients will have a completed asthma action plan and ACT score by March 25, 2023 • This goal is set at 80% to allow for staff to become knowledgeable and comfortable with the new workflow ensuring each asthmatic patient will have screening and an asthma action plan at each visit		
• Audit reports will be conducted weekly to evaluate ACT screening tools and the number of completed asthma action plans • Trends will be evaluated to determine barriers to completing screening tools and action plans		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Number of asthmatic patients from March 2 until May 1 that have completed ACT scores and asthma action plans	The lead project will run audits in the EHR weekly to quantify the number of ACT screening tools and asthma action plans	Graphs will be created every two weeks based on the number of ACT screening tools and asthma action plans. Identifying trends and barriers will be identified

Table 11. SMART Goal #5: Long-term.

SMART GOAL #5: 100% of all asthmatic patients will have a completed asthma action plan and ACT score by December 31, 2023 • This goal is set at 100%, as all clinic staff should know about the workflow and be able to incorporate the new workflow without hesitation. 100% of patients should be screened for asthma symptoms and have an asthma action plan 11 months after implementation.		
• The project lead will work with IT to determine how to run audit reports • Audit reports will be conducted weekly to evaluate ACT screening tools and the number of completed asthma action plans • Trends will be evaluated to determine barriers to completing screening tools and action plans		
Data to be collected	**Method of Collection and who is responsible**	**Planned data analysis**
Number of asthmatic patients from March 1 to February 1 that have completed ACT scores and asthma action plans	The lead project will run audits in the EHR weekly to quantify the number of ACT screening tools and asthma action plans	One final graph for the last 11 months will be created based on compiled data to evaluate the use of the Breathe Easy Protocol

Evaluating Results

Surveys will be collected eight weeks after implementation on March 25, 2023. The sample size of surveys is less than ten persons; therefore, a descriptive analysis will occur rather than a statistical analysis of the survey results.

Summary

As the literature has shown, utilizing ACT scoring tools and asthma action plans can lead to fewer symptomatic days, fewer emergency room visits, and fewer missed school days and help patients reach optimal asthma control. In the small rural primary care clinic, implementing the Breathe Easy Protocol will allow the providers to have a standardized tool to manage asthma in the pediatric population, along with access to an electronic asthma action plan that can be

quickly located in the patient's EHR. This easy-to-use protocol may potentially create lasting effects in the clinic, ensuring that each pediatric patient diagnosed with asthma has the best chance of managing their symptoms and having fewer symptomatic days and an overall better quality of life.

CHAPTER THREE

THE BREATHE EASY PROTOCOL

At a small rural primary care clinic in Montana, approximately an hour from the nearest hospital, approximately 2,500 patients rely on the primary care clinic to manage their healthcare needs. As driving to the nearest hospital and specialists is over an hour away, this primary care clinic must be able to manage a multitude of illnesses. Most patients who visit the primary care clinic are of lower socioeconomic status or living on/near a reservation, and the city's poverty level is nearly 21% (Census Reporter, 2020). According to Everhart et al. (2020), pediatric patients from lower-income communities have a higher prevalence of asthma and increased morbidity rates (Everhart et al., 2020). The primary care clinic sees several patients with asthma, and very few of these patients have an asthma action plan or one that has been recently updated.

The effects of asthma range from missed school and work days by parents/guardians to multiple emergency department visits, hospitalizations, and death (Janevic et al., 2016). Asthma, a chronic condition that affects the lungs, causes wheezing, feelings of breathlessness, chest tightness, and coughing (Montana Department of Public Health and Human Services (MDPHHS), 2021b). In the United States, asthma affects approximately 6.1 million children; and is the leading cause of chronic illness in the pediatric population (Harrison et al., 2019).

Available Knowledge

Asthma continues to affect millions of people nationwide. In 1989, the National Heart, Lung, and Blood Institute (NHLBI) created the National Asthma Education and Prevention Program (NAEPP) to address asthma-related issues. Since then, there have been three updates to

the guidelines, most recently in 2007, the Expert Panel Report-3: Guidelines for the Diagnosis and Management of Asthma (EPR-3). Six priority topics were identified within the expert panel to address managing asthma. Since then, the NAEPP created the 2020 focused updates for asthma guidelines to continue to evaluate best practices in managing asthma. Within the EPR-3 and the 2020 focused guidelines, asthma action plans implementation and utilization remain a priority to reach optimal control of asthma symptoms (Cloutier et al., 2020, National Heart Lung and Blood Institutes of Health, 2008). From the priority topics addressed in the EPR-3, the topic that directly relates to this quality improvement project, the Breathe Easy Protocol, is an adjustable medication dosing with increased asthma symptoms. Emerging topics discussed in the EPR-3 include adherence to medications, utilization of asthma action plans, and the role of community health workers (school nurses) in asthma management.

Nationwide, children miss approximately 10.5 million missed school days annually. The direct cost of asthma per person is approximately $3,259 yearly (Asthma and Allergy Foundation of America, 2019). Key takeaways from the literature review demonstrate that using ACT and asthma action plans can prevent asthma exacerbations, emergency room visits, corticosteroids, and missed school days, meaning more symptom-free days and a better quality of life.

Improvement on the Asthma Action Plan

Key stakeholders at the primary clinic were interviewed to evaluate their thoughts on the current process of managing pediatric asthmatic patients. Both providers voiced a lack of standardization in managing and maintaining asthma symptoms at the primary care clinic and a failure to screen asthma symptoms in these patients appropriately. They also voiced that rarely did they provide patients with asthma action plans. The providers expressed frustration locating a

paper asthma action plan in the clinic to fill out at each patient visit. Often, after filling out the asthma action plan, it was rarely scanned into the patient's chart. Another frustration was that if the asthma action plan was scanned into the chart, it was often challenging to locate, review or update.

The Breathe Easy Protocol was created to improve pediatric asthmatic patient assessment, management, and treatment. The protocol consisted of utilizing an asthma control test scoring tool on each pediatric asthmatic patient and then providing updated asthma guidelines for the providers to facilitate completing an asthma action plan within the clinic's electronic health record (EHR). Completing the asthma action plan within the EHR allows for the action plan to easily be updated, reviewed, and printed for the patients at each subsequent visit.

Guiding Implementation Framework

Implementing this quality improvement project will follow the knowledge-to-action (KTA) model, which consists of seven phases (White et al., 2021). The first two phases of the KTA model begin with identifying a problem and adapting the knowledge to the local context. The third step of the model centers around assessing the barriers surrounding the selected problem. One barrier identified included changing the workflow of the clinic staff and providers along with the time constraints of a short appointment with the provider. Interventions implemented to circumnavigate the identified barriers included individual staff education in which clinic staff were educated about the location of the ACT scoring tools and which patients were to be screened. For the providers, as limited time with each patient was identified as a barrier, folders were placed in each clinic room containing the recommended stepwise approach

to managing asthma symptoms and algorithms for asthma management. Each clinic room also had a poster delineating each step of the Breathe Easy Protocol, which would serve as a reminder to screen each pediatric asthmatic patient and ensure that the AAP was completed.

Steps four through eight of the KTA model encompass tailoring interventions to promote the use of the new protocol, monitoring the use, and evaluating the outcomes. Monitoring and evaluating the new protocol was an integral part of evaluating the effectiveness of the protocol. Surveys and chart audits were to be completed monthly to determine if the new protocol was effectively adopted and utilized (Moran et al., 2019).

As the primary care clinic is a small rural clinic with only two providers and less than five clinic staff, the KTA model was an appropriate framework as it allowed for individual instruction and evaluation throughout the eight-week implementation time to identify barriers and provide further education continuously.

Goals for Quality Improvement

The quality improvement project to implement the Breathe Easy Protocol in rural primary care settings was aimed at reaching two long-term goals. The first goal to be evaluated was that 80% of pediatric patients diagnosed with asthma would have a completed asthma action plan and asthma control test (ACT) at the end of their clinic visit by the end of the eight-week implementation period. The second long-term goal was that 90% of clinic staff would select that they are comfortable using the breathe easy protocol, and 100% of providers would select that they are confident that the Breathe Easy Protocol helps them assess pediatric asthma patients, along with they are confident that the Breathe Easy Protocol help them treat and manage pediatric asthma patients.

Methods

Sample and Recruitment

Recruitment of clinic participants involved person-to-person solicitation and word of mouth. Each clinic staff was approached to introduce them to the Breathe Easy Protocol. Face-to-face education was the most appropriate form of recruitment for this project due to the limited staff members at the clinic. The education for the clinic staff encompassed explaining the new workflow, which included identifying pediatric patients with an asthma diagnosis and having the clinic staff then provide an ACT scoring tool to the patient or family. Lastly, the clinic staff was educated on scoring the ACT tool appropriately before the provider entered the patient's room.

The providers were also educated on the new workflow of the protocol and introduced to the blue folders in each clinic room that contained stepwise asthma guidelines to help facilitate completing the asthma action plan during the patient's clinic visit. The providers were then given a slideshow handout for future reference detailing where to locate the action plans within the clinic's EHR and how to complete the action plans.

Pediatric patients with a diagnosis of asthma were the focus of this protocol. Therefore, identifying these patients was done primarily by the clinic staff. Pediatric patients between the ages of 4 and 17 were included in the protocol, as these are the recommended ages for the national asthma guidelines. Clinic staff would identify pediatric asthmatic patients and then provide the patient or family with an ACT scoring tool before the provider completes an asthma action plan.

Data Management

A review was performed each week of the patients seen at the clinic. Any patient who was not between the ages of 4 and 17 was automatically excluded from the protocol, and therefore a chart audit was not performed on their clinic visit. Chart audits were then performed on pediatric patients with the correct age category. By accessing the patient's chart, personally identifiable information (PII) such as the patient's phone numbers, addresses, and birth dates were discoverable; however, as this information was not pertinent to the study, none was recorded, printed, or disseminated.

The health record information sought through the chart audits included the patient's diagnosis, physician's notes, reported asthma symptoms, and current asthma medications. Weekly check-ins occurred with the providers to determine if pediatric asthma patients had been seen that week. A weekly report was run with the criteria of "pediatric patients, aged 4-17, with a diagnosis of asthma." The report details included the patient's name and date of birth, and then the primary researcher completed a chart audit. To determine if the patient completed an asthma control test and the provider completed an asthma action plan. After these two items were evaluated in the patient's chart, the electronically run report was never saved and was immediately destroyed.

Implementation

Surveys. A pre-assessment and post-assessment three-point Likert scale was initially created for the providers and the clinic staff. The providers' pre- and post-assessment evaluated five measures surrounding pediatric asthma patients in the clinic. The following questions were asked in the surveys: I feel confident in my ability to assess pediatric asthmatic patients, I feel

confident in my ability to manage and treat pediatric asthmatic patients, I am satisfied with the current process on how I assess, manage/treat pediatric asthmatic patients, I am confident that the Breathe Easy Protocol helps me assess pediatric asthma patients and finally, I am confident that the Breathe Easy Protocol helps me treat/manage pediatric asthma patients (See Appendix B).

The clinic staff was evaluated on three pre- and post-assessment measures. The following questions were asked: I am confident in identifying which patients need to have an asthma control test (ACT) placed on their chart at check-in, and I am confident that I know where ACT scoring tools are located in the clinic. Lastly, I am confident in calculating the ACT score. The estimated total time to complete the surveys was less than ten minutes for the clinic staff and the providers (See Appendix C). Both provider and clinic staff were instructed to place their surveys in a designated drawer in the provider's office to keep all survey results anonymous. The drawer was marked with the Breathe Easy Protocol sign to identify the drawer quickly, and within the drawer was a folder labeled "confidential."

Protocol Education and Resources. After the surveys were completed and collected, clinic staff were educated via face-to-face interactions, and education for clinic staff took less than ten minutes. As there were fewer than five clinic staff and two providers, there was no need for a large meeting to educate each person within the clinic; instead, one-on-one education was utilized throughout the implementation of the new protocol. The staff was introduced to the Breathe Easy Protocol, and a discussion took place informing staff where the ACT scoring tools were kept, which patients were to be screened, and how to score the ACT scoring tools. The two providers were introduced to the Breathe Easy Protocol by first showing the providers the folders that would be placed in each clinic room along with the Breathe Easy Protocol signage.

Figure 2. Breathe Easy Protocol Signage.

Within the folders, the providers were shown the easy-to-locate resources, which include stepwise approach algorithms and asthma recommendations for children under four and children five-eleven. The providers were then given a slideshow presentation with printable slides that showed step-by-step instructions on completing the Asthma Action Plan within the clinic's electronic health record (EHR). The total education time for the providers was less than twenty minutes.

After the providers were shown the blue folders with the easy-to-locate resources and new protocol signage, the folders were placed in each clinic room to decrease provider time

locating materials at the nurse's station. Breathe Easy Protocol signs were placed in each clinic room as a visual reminder.

Study of the Interventions and Measures. Interventions used in this quality improvement project include a standardized Asthma Control Test (ACT) scoring tool. Analysis of the surveys will be on a 3-point Likert scale with the following answers: disagree, neither disagree nor agree, and agree. As there are only seven clinic employees, including five clinic nurses and two providers, a descriptive analysis of the results will occur rather than a statistical analysis due to the small number of participants.

Chart audits were considered an instrumental tool to evaluate the utilization of the Breathe Easy Protocol. Weekly, the principal investigator of this QI project met with the providers to evaluate if any patients were seen the previous week with an asthma diagnosis to determine whether a chart audit could be performed. After meeting with the providers, a report would be run in the clinic's EHR with the criteria of "pediatric patients with a diagnosis of asthma." It was pre-determined that all chart audits that would be performed would ensure patient confidentiality, and no PHI would be recorded or kept. Once a chart audit was initiated, the following parameters would be assessed: the provider's progress note, reported asthma symptoms, the ACT score, and assessing the completeness of the asthma action plan within the clinic's EHR.

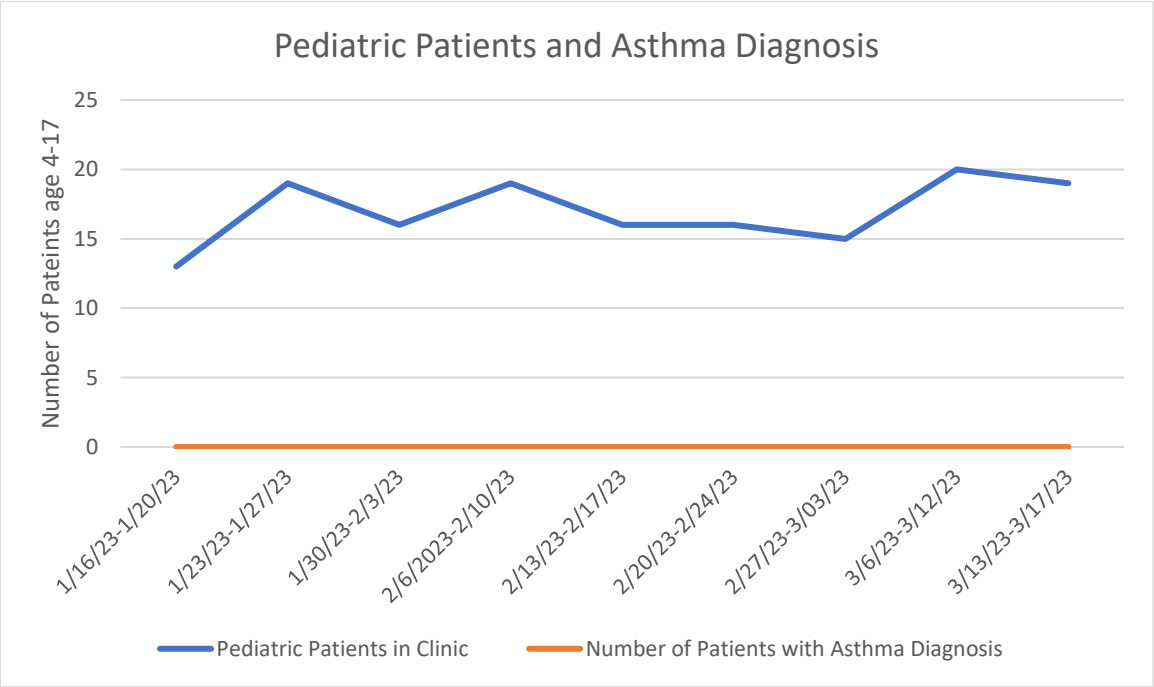
Post-implementation. After eight weeks, clinic staff and the providers completed a post-implementation survey. The clinic staff was surveyed on their ability to locate the ACT tool, identify appropriate patients to be screened with the ACT, and their confidence in calculating the ACT tool. The providers were surveyed about their confidence in assessing pediatric asthmatic

patients, managing pediatric asthma patients, and treating pediatric asthma patients, along with their satisfaction with the new Breathe Easy Protocol. Again, the time to complete the post-surveys was less than ten minutes for both clinic staff and the providers.

Analysis

The sixth step of the KTA framework is evaluating outcomes and knowledge use. The primary long-term outcome goal that 80% of all pediatric asthmatic patients will have an ACT score and asthma action plan completed at their visit was evaluated by performing weekly chart audits to evaluate the number of pediatric patients aged 4-17 diagnosed with asthma to determine if ACT scoring tools were completed along with an updated asthma action plan. A percentage was calculated based on the number of pediatric asthmatic patients and the number of patients who had completed ACT scoring tools and an AAP.

Figure 3. Pediatric Patients Seen and Number of Asthma Diagnosis.



The second long-term outcome goal of ensuring that 90% of staff would state they are comfortable using the protocol was evaluated based on the post-assessment survey results. Due to the small number of participants in the clinic, five clinic staff, and two providers, a qualitative descriptive analysis was performed on the completed surveys.

Ethical Considerations

An exempt application was submitted to the Montana State University Institutional Review Board (IRB). Approval was obtained prior to implementing this quality improvement project. Clinic staff and providers were also notified that the pre-and post-assessment surveys were voluntary and allowed to opt-out. No conflicts of interest were relevant to this quality improvement project.

Results

Participants

Training of the clinic staff was less than ten minutes and involved face-to-face interaction with each clinic staff and providers. Training and education were initiated on January 17, 2023, and the goal of training 100% of clinic staff.

Provider training was completed by January 20, 2023, and 100% of providers completed the face-to-face education, and all questions were solicited from the providers before implementation.

Project Resources

The week before implementing the Breathe Easy Protocol, the protocol signs were created for each clinic room. Blue folders were placed in each clinic room containing stepwise

asthma management guidelines to decrease the time providers would use to locate updated guidelines to complete the asthma action plans. 100% of clinic rooms contained the protocol signs and the blue folders. A slideshow presentation was created and disseminated to both providers by February 1, 2023, detailing the steps on where to locate the asthma action plan within the clinic's EHR, along with steps to complete the AAP.

Outcome Evaluation Findings

The primary outcome goal stated that 80% of all pediatric patients diagnosed with asthma would complete an ACT scoring tool and have a completed asthma action plan within the clinic's EHR by the end of the project timeline of March 15, 2023. A total of 153 (n=153) pediatric patients aged 4-17 were seen during the QI project, and most of these patient visits were related to acute illnesses. Throughout the eight weeks, zero patients were seen with a diagnosis of asthma. Therefore, at the end of the project, zero patients were screened using an ACT scoring tool, and zero asthma action plans were created.

The second primary outcome for this quality improvement project was that 90% of clinic staff would feel confident in their ability to identify which patients were to be screened using the ACT scoring tool and feel confident in scoring the ACT scoring tool appropriately. During post-survey results, four out of five surveys were turned in. Of these four surveys, 100% of the respondents said they feel confident in screening pediatric asthma patients and scoring the ACT score appropriately (See Appendix E).

The third primary outcome for this project encompassed the provider's comfort and confidence in using the new Breathe Easy Protocol. Initially, the pre-survey results found that both providers felt confident in assessing, managing, and treating pediatric asthma patients.

However, both providers disagreed that they were satisfied with the current process of managing and treating pediatric asthma patients. After face-to-face interaction with the providers and the provided resources in each clinic room and the informational slideshow, the providers, in their post-assessment surveys, continued to voice their confidence in their ability to assess, manage and treat pediatric asthma patients. However, both providers voiced that neither agreed nor disagreed that the Breathe Easy Protocol would help them treat and manage pediatric asthma patients. Neither provider could utilize the electronic AAP within the clinic's EHR. However, one provider did voice that they were satisfied with the new process of treating asthma patients (See Appendix F).

Missing Data

According to the two providers in the clinic, it is surprising how few asthmatic patients visited the clinic during the eight-week QI implementation period. Both providers expressed that generally, from January to March, there is an exponential increase of pediatric patients with asthma symptoms who visit the clinic. The providers hypothesized that due to a light respiratory season, many pediatric asthma patients did not experience worsening symptoms that required a clinic visit.

Future Work

The final step of the KTA framework is sustained knowledge use. As there were limited opportunities to use the new Breathe Easy Protocol due to a lack of appropriate patients in the eight weeks, sufficient knowledge was obtained of the appropriate steps to screen and assess pediatric asthmatic patients based on the survey results from the clinic staff. Sustained knowledge of the new protocol was evaluated throughout the eight weeks by checking in with

clinic staff, ensuring they were comfortable with the new process workflow, and soliciting questions from each staff member.

Weekly check-ins with the providers also allowed for questions and ensured the provider's comfort with the new protocol. As there were no opportunities for the providers to utilize the new protocol, providing the providers with the slideshow with step-by-step instructions on completing the asthma action plans, one can infer that sustained knowledge and confidence will continue in the future.

Further dissemination of information related to the quality improvement project will occur during a defense presentation to university faculty and the public, ensuring that this quality improvement project reaches a larger audience.

Discussion

The goal for provider education and comfortability with the Breathe Easy Protocol was 100%; this goal was not reached due to the limited opportunity to utilize the new protocol due to the lack of pediatric patients who visited the clinic during the eight-week implementation period. However, provider post-survey results showed that neither disagreed nor agreed that the Breathe Easy Protocol was an effective tool to help them manage and treat pediatric asthmatic patients. An inference can be made that providing the providers with a slideshow handout with clear steps to complete the AAP and updated asthma guideline resources in each clinic room would increase the probability that the Breathe Easy Protocol would be used in the future.

The goal for staff comfortability in screening pediatric asthma patients using the ACT scoring tool was 90%. This goal was not met as only four out of five clinic staff turned in a post-assessment survey which calculates to 80%. However, in the returned surveys, each clinic staff

reported that they felt comfortable identifying which patients were to be screened using an ACT scoring tool and were comfortable in scoring the tool appropriately.

The over-arching goal of the Breathe Easy Protocol was to ensure that 80% of pediatric patients diagnosed with asthma who visited the primary care clinic would be appropriately screened using an ACT scoring tool and have an updated asthma action plan in the clinic's electronic health record. This goal was not met as zero pediatric patients presented to the clinic during the eight weeks with a diagnosis of asthma. However, with the new protocol, staff comfortability using the ACT scoring tool, and provider's comfortability in following the Breathe Easy Protocol, one can infer that appropriate steps have been created to adequately assess and manage and treat pediatric asthma patients who visit this primary care clinic. The resources created for the providers and clinic staff remain at the clinic; therefore, in the future, when pediatric asthmatic patients are seen in the clinic, it can be expected that the Breathe Easy Protocol will continue.

Interpretation

The Breathe Easy Protocol, even though with limited testing due to appropriate patients, demonstrates that designated education and resources can provide a standardized tool to manage and treat pediatric asthmatic patients effectively, therefore ensuring that each patient leaves a clinic appointment with the necessary tools to treat their escalating asthma symptoms at home. Multiple literature searches substantiated that using asthma action plans effectively reduces the number of hospital visits, sick days from school, and, more importantly, a better quality of life with fewer asthma symptoms (Pletta et al., 2020).

The Breathe Easy Protocol, when utilized in the primary care setting, has the opportunity to provide a streamlined workflow allowing the providers in a primary care clinic the tools to manage their pediatric patients with asthma effectively. As the survey results demonstrated after completing the quality improvement project, providers felt satisfied that this new protocol would give them the tools to manage asthma in their community better. As the primary care clinic where this QI project was implemented is part of a more extensive hospital system, the Breathe Easy Protocol could be effortlessly implemented in similar primary care clinics within the more extensive hospital system around the state of Montana, therefore creating a more considerable impact on pediatric asthmatic patients in the state.

Limitations

Limitations of this quality improvement project include the short time frame of implementation paired with the insufficient numbers of pediatric asthmatic patients who visited the primary care clinic during the eight weeks of the project. Future implementation of the Breathe Easy Protocol would most likely demonstrate better results with a more extended implementation period of four months. More pediatric patients are seen for sports physicals and well-child visits from May to August, and these summer months would most likely see more pediatric patients diagnosed with asthma.

The primary care clinic where this project was implemented is a small rural clinic with less than ten staff members, including clinic staff and providers. Therefore, staff buy-in is crucial in this clinic. If one staff member chooses not to participate or follow the new protocol, protocol adherence would be significantly jeopardized. Therefore, weekly check-ins with staff and

providers would be imperative for the success of the Breathe Easy Protocol. Re-education and soliciting feedback and suggestions could increase compliance with the new protocol.

The clinic's current EHR has a newly built asthma action plan, as this has not been rigorously tested in the clinic environment by providers, time completing the action plan limits usability as providers are trying to familiarize themselves with the new asthma action plan while staying within the allotted appointment time with each patient. With further use, it can be inferred that time will no longer be a limitation as comfort and experience increase.

Conclusion

Asthma is incurable; however, symptom management, appropriate education, and an asthma action plan can achieve optimal asthma control. Compelling evidence demonstrates that patients with an asthma action plan experience fewer exacerbations of symptoms, decreased emergency visits, and improved quality of life. Implementing the Breathe Easy Protocol, this quality improvement project aimed at standardizing asthma management in a primary rural care clinic by ensuring each pediatric asthmatic patient was screened using the asthma control test and provided an updated asthma action plan at the end of their appointment.

Outcome goals were met throughout the project implementation by ensuring weekly check-ins with clinic staff and provides as no pediatric asthmatic patients visited the clinic during the eight weeks. Therefore, to ensure the project's continued success, slideshows were disseminated to providers to quickly recall the steps to completing the new EHR's action plans, along with soliciting feedback each week.

As the protocol's effectiveness cannot be evaluated related to usability in pediatric patients due to the lack of patients, it can be inferred that with the resources provided to the

providers, the Breathe Easy Protocol offers providers the tools to assess, manage and treat pediatric asthmatic patients effectively. As clear steps were created to assess, manage and treat pediatric asthmatic patients, the foundation was instilled in this primary clinic to continue with the Breathe Easy Protocol, ensuring that pediatric patients receive the highest level of care in managing their asthma.

CHAPTER FOUR

DNP REFLECTIONS

The journey to graduation has been one that has taught me more than just how to be a future doctorate-prepared nurse practitioner. The past four years have instilled virtues that will bridge my personal and professional life. Starting the DNP program at the heart of the COVID-19 pandemic taught me resilience, flexibility, and the confidence to accomplish any goal I aimed to reach. The coursework, hours of reading, papers, and exams built a knowledge base and foundation, making the transition to clinical rotations less intimidating and daunting. It set me up to succeed in the program's last four semesters. Creating a quality improvement project from start to finish has given me the knowledge and tools necessary to enact change in my future role as a nurse practitioner and one where I believe I will always continue to look for how I can improve on current processes rather than being stagnant in my practice.

This chapter serves as a reflection of the DNP essentials along with my journey through the Mark and Robyn Jones College of Nursing Doctorate in Nursing Practice, Family Nurse Practitioner program.

DNP Essentials

According to the American Association of Colleges of Nursing (AACN), the DNP Essentials are eight essential competencies that all DNP students must meet before completing a DNP program (American Association of Colleges of Nursing, 2006). I attest that over the last four years, I have met each of the eight DNP essentials in my coursework and clinicals.

Essential I: Scientific Underpinnings for Practice

The cornerstone for Essential I surrounds utilizing knowledge obtained from sciences and ethics and using that knowledge to develop then and evaluate nursing theories while ensuring the highest quality of care is provided to each patient (American Association of Colleges of Nursing, 2006). I believe that every class I took throughout my DNP journey helped me to meet the first essential. In N620, Diagnostic Reasoning, I learned to integrate knowledge from my assessment findings which were strengthened in N601 in Physical Assessment. N602, Advanced Physiology/Pathophysiology, supplied me with the knowledge of various disease processes that I then applied in future classes but, most importantly, while completing my clinical hours. Each class that I took throughout the DNP curriculum continued to build on prior knowledge, ensuring that during my clinical rotation, I was able to provide quality patient care while following the scientific underpinnings laid out in my previous coursework, thus ensuring I was able to meet the core competencies of Essential I.

Essential II: Organizational and Systems Leadership
for Quality Improvement and Systems Thinking

Essential II ensures that the DNP graduate can develop and evaluate care delivery, ensuring that it meets the current and future needs of patient populations while ensuring patient safety and quality patient outcomes (American Association of Colleges of Nursing, 2006). Essential II also ensures that the DNP graduate can employ principles of business, finance, economics, and health policy (American Association of Colleges of Nursing, 2006). In N613, Finance, and Budgeting, I created a financial proposal and budget to implement standardized diabetic education incorporating inpatient and outpatient settings. My proposal to implement standardized diabetic education would ensure that each diabetic patient was given the necessary

knowledge to manage their diabetes, reducing hospitalizations and ensuring quality patient outcomes and patient safety.

Design of Healthcare Systems (N608) was instrumental in meeting the criteria for Essential II. In N608, I became familiar with the 5Whys Methodology and created fishbone diagrams and value stream maps to identify care delays in patients visiting outpatient asthma and allergy clinic. By visualizing a workflow and evaluating change in the delivery of care, I could identify processes that could be changed or eliminated that would decrease the amount of time patients spent in the clinic waiting to be seen. Most importantly, N608 taught me the importance of evaluating systems and identifying processes that can be altered to ensure improved quality of care and patient safety.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

Essential III focuses on analytical methods for evidence-based practice by examining the literature and designing and implementing processes to promote safe, effective, efficient, and patient-centered care (American Association of Colleges of Nursing, 2006). During N675, I evaluated research to identify best-practice in assessing and managing pediatric asthmatic patients. My quality-improvement project focuses on implementing a protocol to standardize asthma care in a rural primary care clinic. After an extensive literature review, I determined that the literature supports that pediatric asthmatic patients should be screened using ACT scoring tools and provided with an asthma action plan and adequate asthma education to reach optimal asthma control. The Knowledge to Action Framework was my first instruction guide for my project to develop an appropriate intervention, assess the barriers preventing success, and evaluate the outcomes and sustainability of knowledge.

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care

Essential IV focuses on using technology to evaluate programs and outcomes of care (American Association of Colleges of Nursing, 2006). In N675, technology was a critical component of my quality improvement project. My QI project surrounded utilizing an electronic asthma action plan within the patient's electronic health record (EHR) to ensure that a patient's asthma action plan could be updated electronically and shared among the patient's care team. Utilizing technology and chart audits was instrumental in evaluating my project's outcomes. By working with the clinic's IT department, I could generate reports tailored to my project's specific data: "pediatric patients with a diagnosis of asthma." As technology continues to develop, I learned that it is imperative to understand how technology can improve or inhibit health care's transformation.

Essential V: Health Care Policy for Advocacy in Health Care

Essential V focuses on healthcare policy, education, and equality in healthcare (American Association of Colleges of Nursing, 2006). During N612, Policy and Design, I discovered how important it is for nurses and providers to become involved with policy design. During this course, I advocated for our legislature to legalize marijuana to increase access to cannabis for medical use, specifically for patients struggling with medication-resistant epilepsy. Even though I never received correspondence from state officials, I now possess the knowledge and comfortability to advocate for policies I feel strongly about in the future.

In N614, Vulnerable Populations, I met Essential V by learning how to evaluate our communities for vulnerable populations and then identify resources in our community for these

specific populations. I utilized a window survey to identify and evaluate resources in my local community.

As future providers, we must advocate for our patients and safe and equal care. Essential V gave me the tools to ensure I can do this exact thing for my future patients.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Outcomes

Essential VI focuses on effective team leadership, communication, and collaboration to improve patient outcomes (American Association of Colleges of Nursing, 2006). Utilizing interprofessional collaboration is essential when implementing a quality improvement project. In N675, I had to use leadership skills and effective communication to educate staff and providers about my project and a new process while demonstrating excitement to encourage staff buy-in and engagement. During the implementation method, I communicated with providers, nurses, and medical assistants while collaborating with an IT department to evaluate population outcomes.

Throughout the DNP program, I had the privilege to work in several small groups. I found that, as in most cases, there are both good and bad communicators. Collaboration is necessary to ensure a good outcome regardless of group members' opinions or biases. Therefore, Essential VI was met in nearly every class as I had to communicate with professors, classmates, preceptors, and patients effectively.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

Essential VII encompasses health promotion and risk reduction/illness prevention for individuals and families (American Association of Colleges of Nursing, 2006). I met Essential VII by coursework in N614, vulnerable populations. While working in a small group, my group looked at health disparities in the homeless population of Montana. During this class, we evaluated health issues related to the homeless population and then dove into the resources available across Montana. As our group had members over much of the state in both rural areas and our large cities, it was eye-opening to discover how geographic location truly impacts the resources available. As I have only ever lived in a larger city, I was ignorant of how vast a problem this truly is.

Throughout my clinical rotations, I met Essential VII daily with patients. With each patient I saw over the last four semesters. I took the necessary time to educate about disease processes, treatment plans, assessments, and diagnostic findings to promote health and positive change to improve overall health. Over 50% of my clinical hours were completed in a rural clinic in an underserved community; therefore, I think I was an integral team member in impacting this community's health.

Essential VIII: Advanced Nursing Practice

Lastly, Essential VIII focuses on advanced nursing practice ensuring that all DNP graduates can demonstrate refined assessment skills, conduct a comprehensive and systematic assessment and then design, implement, and evaluate therapeutic interventions. Essential VIII also focuses on developing therapeutic relationships with families and patients, demonstrating

advanced clinical judgment, and educating and guiding individuals through complex health situations (American Association of Colleges of Nursing, 2006).

Completing N621, N622, N623, and N624 allowed me to interact and provide care to patients across the lifespan, from hour-old newborns to the elderly. Over four semesters, I completed hours in a rural primary care clinic, a pediatric clinic, an internal medicine clinic, a women's health clinic, a mental health clinic, and an orthopedic clinic. Completing over 675 clinical hours allowed me to gain confidence in interacting with patients as a provider, gathering patient histories, strengthening my assessment skills, developing working diagnoses, and tailoring my care plans to meet my patient's needs. I now have confidence and comfort in assuming the role of an advanced practice provider.

Quality Improvement Project

Implementing my quality improvement project titled "Implementing the Breahte Easy Protocol: A Quality Improvement Project to Standardize Asthma Management in a Rural Primary Care Clinic" shaped my future practice as a nurse practitioner. First, implementing the project increased my leadership skills by allowing me to champion a project, collaborate with several disciplines and create change while providing better outcomes in the rural clinic.

I had never utilized a framework to guide change before this QI project. Therefore this process gave me the necessary tools and knowledge to identify a problem and then choose a guiding framework to fit the desired outcome best.

My biggest takeaway from completing this project was changing and adapting my project and goals due to circumstances out of my control. My project's main focus was changing how pediatric asthmatic patients were screened for their asthma symptoms and ensuring an electronic

asthma action plan was given to them at the end of their visit. However, during the eight weeks of my project timeline, this process could not be evaluated due to a lack of patients that fit my patient demographic. Therefore, halfway through the eight weeks, I discovered that I needed to adjust my main focus from the new proposed protocol process to that of the provider's and staff feedback related to a new process, ease of use, and comfortability using the protocol in the future.

The knowledge, leadership skills, comfortability with QI projects, and ability to adapt to unforeseen circumstances I developed throughout this project are takeaways that will continue to impact my future profession as a provider and a leader. I now possess the confidence to educate, delegate and be a champion for change to ensure quality care for my patients.

Conclusion

Completing the Doctor of Nursing Practice Program through the Mark and Robyn Jones College of Nursing has given me the confidence to become an advanced practice provider. The coursework throughout the last four years set me up for success in completing a quality improvement project. The clinical courses and rotations provided a solid foundation to set me on the trajectory of becoming a competent and confident provider.

My future practice as a provider is still unclear. However, I know as my future practice will be based on the experience, knowledge, skills, and confidence gained from the Mark and Robyn Jones College of Nursing, I will, without a doubt, be a skilled practitioner who continually will investigate current systems and processes identifying areas of improvement to ensure quality care, safety and above all else respect and treat the patient and family with dignity, compassion, and understanding.

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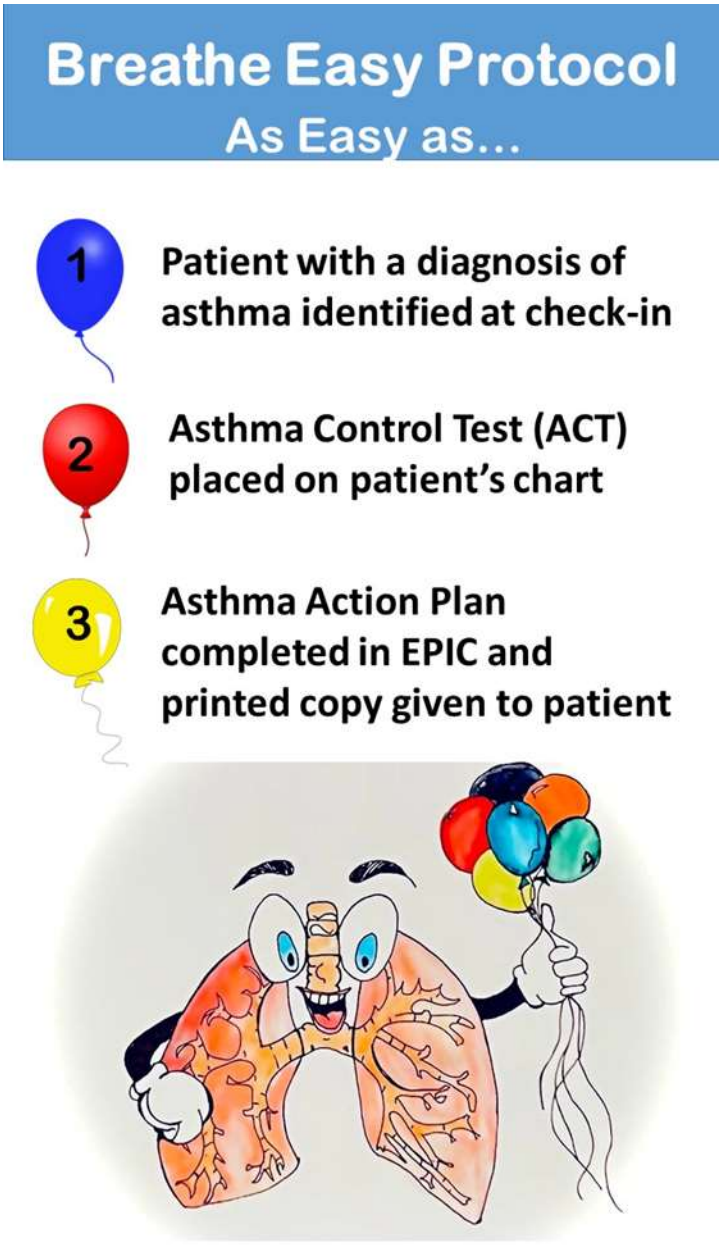
APPENDICES

APPENDIX A

BREATHE EASY PROTOCOL SIGNAGE

Figure 4. Breathe Easy Protocol Signage.



APPENDIX B

PROVIDER SURVEYS

Figure 5. Provider Surveys.

Pre-Survey of the Breathe Easy Protocol for Providers

This Facility Quality Improvement project is considered research by Montana State University. If you have any concerns about participation, please contact your immediate supervisor for possible options to opt-out

For Each question below, circle the response that best describes your agreement with the statement.

	Disagree	Neither Disagree nor Agree	Agree
1: I feel confident in my ability to assess pediatric asthmatic patients	1	2	3
2. I feel confident in my ability to manage and treat pediatric asthmatic patients	1	2	3
3. I am satisfied with the current process of how I assess, manage/treat pediatric asthma patients	1	2	3
4: I am confident that the Breathe Easy Protocol helps me assess pediatric asthma patients	1	2	3
5: I am confident that the Breathe Easy Protocol helps me treat/manage pediatric asthma patients	1	2	3

Post Survey of the Breathe Easy Protocol for Providers

This Facility Quality Improvement project is considered research by Montana State University. If you have any concerns about participation, please contact your immediate supervisor for possible options to opt-out

For Each question below, circle the response that best describes your agreement with the statement.

	Disagree	Neither Disagree nor Agree	Agree
1: I feel confident in my ability to assess pediatric asthmatic patients	1	2	3
2. I feel confident in my ability to manage and treat pediatric asthmatic patients	1	2	3
2. I am satisfied with the current process of how I assess, manage/treat pediatric asthma patients	1	2	3
3: I am confident that the Breathe Easy Protocol helps me assess pediatric asthma patients	1	2	3
4: I am confident that the Breathe Easy Protocol helps me treat/manage pediatric asthma patients	1	2	3

APPENDIX C

CLINIC STAFF SURVEYS

Figure 6. Clinic Staff Surveys.

Pre-Survey of the Breathe Easy Protocol for Clinic Staff

This Facility Quality Improvement project is considered research by Montana State University. If you have any concerns about participation, please contact your immediate supervisor for possible options to opt-out

For Each question below, circle the response that best describes your agreement with the statement.

	Disagree	Neither Disagree nor Agree	Agree
1: I am confident in identifying which patients need to have an asthma control test (ACT) placed on their chart at check-in	1	2	3
2: I am confident that I know where ACT scoring tools are located for patients to fill out	1	2	3
3: I am confident in how to calculate the ACT score	1	2	3

Post Survey of the Breathe Easy Protocol for Clinic Staff

This Facility Quality Improvement project is considered research by Montana State University. If you have any concerns about participation, please contact your immediate supervisor for possible options to opt-out

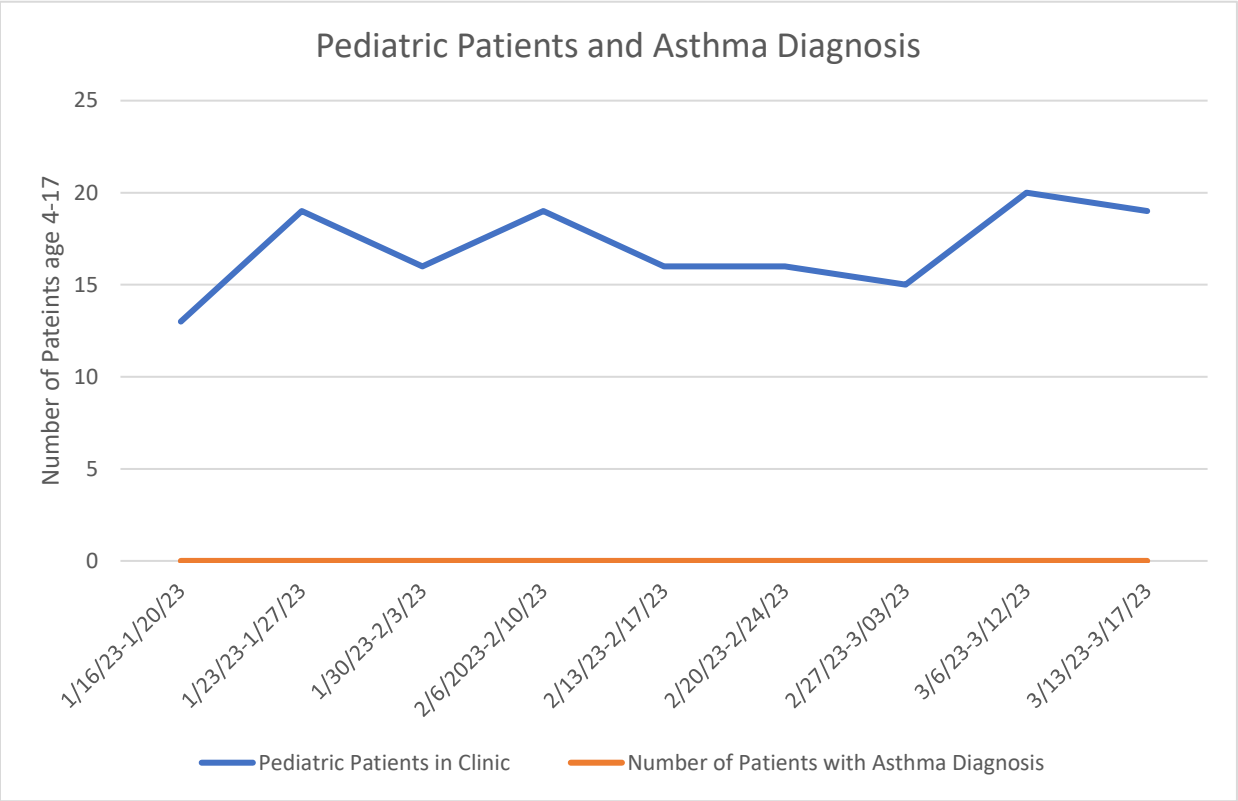
For Each question below, circle the response that best describes your agreement with the statement.

	Disagree	Neither Disagree nor Agree	Agree
1: I am confident in identifying which patients need to have an asthma control test (ACT) placed on their chart at check-in	1	2	3
2: I am confident that I know where ACT scoring tools are located for patients to fill out	1	2	3
3: I am confident in how to calculate the ACT score	1	2	3

APPENDIX D

PEDIATRIC PATIENTS SEEN IN THE CLINIC AND THOSE WITH ASTHMA

Figure 7. Pediatric Patients and Asthma Diagnosis.



APPENDIX E

PRE- AND POST-SURVEY CLINIC STAFF RESULTS

Figure 8. Pre- and Post-Survey Clinic Staff Results.