Doctor of Nursing Practice Portfolio

Evidence Based Clinical Applied Project

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Abstract

Purpose and Aims: An Asthma Project team was assembled and created an Asthma Clinical Practice guideline with the most current literature. The purpose of the Doctor of Nursing Practice (DNP) project is to introduce the Asthma Clinical Practice guidelines and discuss how to maintain a reliable system to sustain positive change created by implementing the project.

Background and Significance: Asthma is defined as a chronic disorder that is characterized by recurring symptoms, airway obstruction, inflammation, and hyper-responsiveness. Providers aim to have children maintain as normal of a life as possible. Synthesis of the evidence demonstrates that a decision support tool is most effective at increasing provider adherence to guidelines.

Methods: IRB approval for project implementation was obtained from ASU. Practitioners who provide care to a pediatric asthma population in a primary care practice participated in an educational session PowerPoint about asthma management and how to create a reliable system. A pre/post-test was administered and contained seven questions related to educational session content. The post-test has four additional open-ended questions related to quality improvement and creating reliable systems. The statistical test that will be used is the paired-t test. The data from the open-ended questions will be compiled to show provider insight about quality improvement projects.

Outcomes and Results: A Wilcoxon signed ranks test was used for statistical analysis. This was used because there was a small amount of data collected. The results did show increases between the pre-test correct questions and the post-test correct questions, however it was not statically significant

Conclusions: The implications for this project include improved provider knowledge on asthma management, improved adherence to clinical practice guidelines, and improved quality of life for pediatric asthma patients. Future recommendations include creating a more in-depth educational session about system reliability.

Chapter 1

Background and Significance

Asthma is defined as a chronic disorder that is characterized by recurring symptoms, airway obstruction, inflammation, and hyper-responsiveness. For a diagnosis, symptoms must be present twice a day each week or two times a night each a month; symptoms include wheezing, coughing, breathlessness, and chest tightness (EPR-3, 2007). The ultimate goal of asthma management is to preserve lung function and prevent symptoms. Providers aim to have children maintain as normal of a life as possible (Robison & Kumar, 2012).

The national asthma prevalence states that there are 6,109,000 children under the age of 18 who have asthma. The specific age group that the project's guidelines focus on is ages 5-18. In that age range it is reported that 5,282,000 children have asthma. Approximately 57.9% of children under the age of 18 who have asthma reported having one or more asthma attack. The national asthma mortality in 2013 was 218 deaths in children under 18 years old, where the underlying cause of death was asthma (Center for Disease Control, 2015). While that number may seem small in comparison to how many children have asthma, it means that 218 children lost their life to a disease that can be managed.

Proper asthma management and compliance with treatment plans are the goals for pediatric patients. Non-compliance of an asthma treatment plan can negatively affect the child later in life. Complications of asthma that is very poorly controlled, as defined by the EPR-3 guidelines, include an increase in future asthma exacerbations. Haselkorn et al. (2009), state that the risk for ED visits and hospitalizations increase six times when the asthma is poorly controlled.

As patients grow into adulthood, life lung function can decrease causing an increase in severity of asthma. Maintaining an asthma treatment plan does “cure” asthma, they will always have this chronic disease, however it reduces the chance of an asthma exacerbation (EPR-3, 2007). As with many other health concerns, maintaining an asthma treatment plan can have many difficulties for the patient and the provider. While patient adherence to treatments and intervention is important, provider adherence is also essential in asthma management. There have been many studies evaluating provider adherence in an effort to improve following guidelines and asthma management in pediatric patients.

Areas that lack provider adherence include providing asthma action plans, teaching proper technique, and long-term medication interventions. Okelo et al. (2013) states that one study found that 34.2 percent of asthma patients has an asthma action plan, per patient report. In that same study, 68.1 percent of patients stated that they received education on managing an asthma exacerbation at home. The goal of the guidelines of that every patient receive an asthma action plan and sufficient education to manage the disease at home. This statistics show that there is a concerning lack of provider adherence and it is negatively impacting asthma management.

The difficulties that providers face when adhering to guidelines are varied. They included lack of awareness of the guidelines, lack of confidence in performing the guidelines, concerns over effectiveness of the guidelines, disagreement with the guidelines, lack of time in a patient encounter, patient preferences, and office culture and set way of practicing (Okelo et al., 2013). It is important to be aware of the reasons providers are not following guidelines and use this information to help guide a search for an intervention to improve provider adherence.

As healthcare providers it is imperative that we look at the current evidence to ensure we are practicing at the highest level possible. The population, interventions, comparisons, and outcomes need to be evaluated to form a questions relating to this clinical problem.

Problem Statement and PICO

Asthma is prevalent among pediatric patients and a problem that many primary care providers encounter and treat in their clinical practice. The most recent guidelines for asthma management is from the National Heart, Lung, and Blood Institute are from 2007. Since the guidelines are now about eight years old, new research about asthma management has been conducted and there is now more current evidence. The purpose of the Dignity asthma team is to evaluate the significance of pediatric asthma in the healthcare setting and to discuss the issues regarding current practice guidelines and supporting evidence.

The following clinical PICO question was developed: "In healthcare providers treating pediatric asthma patients (P), how does implementation of an educational intervention to improve adherence (I) compared to no intervention (C) affect asthma management adherence from healthcare providers (O)?" To assist with the development of the Asthma Clinical Practice guidelines another PICO question was asked: "In pediatric patients with asthma (P) how does the use of supplemental ICS for yellow zone management (I) compared to repeated dosing of SABA (C) affect time spent in the yellow zone and progression to either green or red zones (O)?"

Search Strategy

Databases searched to complete a thorough literature review included PubMed, Cumulative Index of Nursing and Allied Health (CINHAL), and Journal Storage (JSORT).

Inclusions and Exclusions

Limits applied to the search included: studies completed in the USA, humans, the English language, pediatric age ranges from 0-17 years, and articles published after 2011. There were some articles that were included in the data synthesizing that did have exceptions to the inclusion due to the inclusion of the PICO elements and being high-level evidence. Pediatric age ranges were an inclusion, however one study did have adults. Another study was conducted in Germany and another study was published in 2007. These studies were included in the final data synthesizing because they included the setting and population desired.

Yields

The main keywords used during the searches included: asthma, pediatric, providers, provider, physicians, physician, guidelines, adherence, compliance, and education. Combinations of keywords included asthma AND guideline AND adherence AND providers. Another combination was providers OR physician AND compliance AND education AND adherence.

In PubMed (Appendix A &B) the keywords asthma, guidelines, adherence, and providers were searched and yielded 2199 results. The keywords were then combined with education and adherence using the Boolean connector "AND" and yielded 1356 results. The limit of being published after 2011 was applied and yielded 31 results, and then the pediatric age range of 0-17 years old was applied and finally yielded 17 results. In CINHAL (Appendix C) the keywords asthma, adherence, and providers were searched and yielded 2983 results. The keywords were then combined with education and adherence using the Boolean connector "AND" and yielded 38 results. The limits were applied and yielded 9 results. In JSORT (Appendix D) the keywords physicians, compliance, education, and adherence were searched and yielded 169 results. The limits were applied and yielded 19 results.

Ancestry searches were also completed and some articles were reviewed, however none of them were evaluated for this paper because the articles found were either included in the final articles or did not apply to the PICO question.

Evidence Synthesis

The project problem started with Dignity identifying areas within their healthcare system that they wanted to improve on. Pediatric asthma became an area of interest with the goal of better and consistent asthma management. Pediatric asthma is a chronic disease that is managed in primary care. The PICO question was developed with the population being providers, the intervention would be a tool to implement new guidelines, the comparison would be what the providers are doing now with asthma guidelines, and the outcomes measured would be an increase in provider compliance with asthma guidelines.

An exhaustive search was done using PubMed, CHINAL, and JSORT using keywords like asthma, guideline, adherence, providers, physician, compliance, and education. Ten studies were identified to be evaluated for evidence and the data was synthesized. The findings supported a decision support tool with an electronic monitoring (Appendix A).

The evidence showed that a decision support tool and an electronic monitoring and support system were effective at increasing provider adherence. Education only showed some moderate level of evidence, however the combination of education, a decision support tool, and electronic monitoring and support would be the best combination for an intervention and would have the strongest support for a practice change. The lower level of supporting evidence for the education tool was a result of a lower impact and *p*-value. The synthesized evidence prompts action to design a decision support tool that is electronic for provider to use when managing pediatric patients with asthma.

The results can be translated to the population that the DHMG team is trying to target. Their goal is to reduce ED and hospital visits by effectively managing asthma in primary care, and the evidence is supporting this population of primary care offices. The outcome impacted by these intervention is directly related to the goals of this team. This evidence would easily relate to this project when the new asthma guidelines are ready to be implemented in pediatric primary care practices.

Purpose Statement

The overall goal of the proposed project is to reduce the gap that exists between research findings and actually changing practice. The 17-year gap is well known in the nursing community and describes the time in between research producing evidence and actually implementing those findings in a patient setting. The proposed project is trying to reduce that time and implement the best evidence in a form of new asthma guidelines. The synthesized data will be valuable during the design phase of the project when the team is working on creating a plan to implement the new guidelines. The evidence supporting an electronic decision support intervention will impact adherence of providers, and therefore impact the outcomes of interest. The outcomes of interest would include reduced ED visits, reduced hospital admits, reduced movement from the green to the yellow zone, and reduce movement from the yellow to the red zone.

The implications of the proposed project from the synthesized evidence would be improved provider adherence and therefore improved asthma management in pediatric patients. Further implications could include using this project as a foundation for other quality management project in other areas of health management.

Chapter 2

This section of the Evidence Based Clinical Applied Project discusses the evidence-based practice model and the conceptual model that was used to guide this DNP project. The project methods are also discussed in detail, including the setting, participants, intervention, outcomes measured, data collection plan, analysis plan, and the proposed budge.

The project results are also discussed as well as the strengths and limitations of the project. Results include demographics information, t-scores, p-values, and actual data from the study.

Evidence Based Practice Model

The evidence based practice model is the Johns Hopkins model (Appendix B). It's a three-step process, which includes practice question, evidence, and translation. The idea is to implement best practices that are supported by evidence in a way that is quick and efficient. For this project the practice question was identified by the gap analysis and the evidence was synthesized for the yellow zone management. The translation of this evidence was into one of the components of the Asthma Clinical Practice Guidelines that will be implemented into primary care practices.

Conceptual Model

The conceptual framework for this project is the Donabedian Model, which focuses on structure, process, and outcomes (Appendix B). The idea is the good structure results in good processes and thus good outcomes. The structure is the setting, equipment, and personnel. The Process is the actions and methods of evaluating patient management. Outcomes include the results that impact the patient or population (Moran, Burson, & Conrad, 2014). The Donabedian Model, or theory of quality assessment, can help analyze care delivery organization and processes (Zaccagnini & White, 2014).

For the DNP project the structure aspect of the framework includes the DHMG Asthma Project team, the primary care practices identified, and the educational materials. The Asthma Project team members who created the Asthma Clinical Practice and will create the educational materials for the project implementation determine the structure of the project. The setting is important in the structure aspect as well. The desired setting for the project is a pediatric primary care clinic or a family primary care clinic with multiple providers and a significant pediatric asthma population. For the family care primary clinic there must be a significant pediatric asthma population as this is what the guidelines are related to. The primary care clinics will be part of the Phoenix Children's Care Network (PCCN) or the Arizona Care Network (ACN). The clinics will also be selected based on what kind of electronic medical record (EMR) system they use. Clinics with either ALLscripts or Eclinical works will be selected to make data collection consistent and simple. The equipment part of the structure includes the educational material and the EMR systems for data collection.

Project methods

IRB approval was obtained for a Social Behavioral Protocol (Appendix E). To protect the participants' identity a formula used for identification protection would be the last two numbers of their phone number with the first two letters of the city they were born in. The completed surveys will be collected by the DNP student and transferred to a computer for storage and data analysis.

The setting of the intervention was described in the process aspect for the conceptual framework. Within the PCCN 6-8 practices will be chosen and will be either pediatric or family primary care practices. They will need to have a pediatric asthma population between the ages of

5-18 years old. The EMR of the practice will also determine if it will be used as the setting of the intervention.

The population for the project will include providers in the primary care practices identified. The providers included will be medical doctors, nurse practitioners, and physician assistants. The primary care settings where the providers work will be pediatric or family practices. Exclusion criteria will be asthma or allergy specialists. The providers will also have to have a pediatric asthma population between the ages of 5-18. With a large number of practices and providers that qualify, specific practices with certain EMR systems will be targeted. The EMR systems being considered are Allscripts and Eclinical works.

The intervention of the DNP project is an educational session on the Asthma Clinical Practice guidelines that were developed by the DHMG Asthma Project team. The team is currently in the design phase, where we are discussing how to best implement the guidelines and the intervention is being developed. The role of the DNP student will be to present the guidelines in an educational session. It has not yet been determined if the educational session will be in person or in the form of an online presentation. The steps to the intervention will be to administer a demographics survey and a pre-test survey, which will consist of ten questions. The Asthma Clinical Practice guidelines will then be introduced and the eight main points will be discussed in detail. The rationale and the evidence used to support the guidelines will also be discussed. Real life applications of the guidelines and sources of references will be provided. A post-test will be administered after the educational materials are presented. The topic of quality improvement will be introduced and a survey of provider knowledge of quality improvement will be administered. All survey data will be collected and analyzed and presented.

Measurable outcomes for the DNP student project will include: provider knowledge on asthma management guidelines, provider knowledge on yellow zone asthma management, and provider knowledge on quality improvement projects. The quality improvement outcomes will provide insight into the current project and insight into future quality improvement projects. The quality improvement aspect of the project was added to gather valuable data while pre-test and post-test data was being collected. The outcomes will be measured by a pre-test and post-test created by the ASU DNP student with the help of the ASU faculty and insight from the Asthma Team (Appendix D).

The analysis plan has changed from an analysis of covariance (ANCOVA) to a t-test. The ANCOVA test was initially chosen because the design of the pre-test and post-test in a nonrandomized control group (Dimiter & Rumrill, 2003). The participants are in the same group, which increases the design external validity. However, the anticipated sample size has dramatically decreased so the t-test was chosen instead.

Anticipated budget time for the project includes biweekly one-hour meetings and time spent working on the project between meetings. The time required from the providers includes the time spent on the educational session and time spent researching and determining how the new guidelines will fit into their own personal practice. The Phoenix Children's Care Network is already collecting data on ICD-9 coding, or ICD-10 coding depending on the time of collection, and demographics in their clinics and data will be extracted from their system on the participating practices, this is another identified resource. The DNP student, using clinical hours from DNP 712 classes, will complete the educational sessions and pre/post test. Financial needs include paper and supplies for presenting the project and collecting data. A poster may be developed and printed for each participating practice or each participating provider. Paper will

also be needed if the pre-test, post-test, and demographics surveys are completed in the paper and pen method. A proposed financial budget might be $250 to start for educational materials.

The type of economic evaluation chosen for this DNP project is the cost minimization analysis (CMA). This will help assess the intervention and the impact it might have on cost and economic factors. The CMA analyzes incremental costs and incremental effects of alternatives for the same outcome (Kleinpell, 2013). The alternative consequences can be measured and compared for the same outcomes for the DHMG project and the DNP project. The CMA and resulting findings can help the team determine if the project has importance.

Project Results

A Wilcoxon signed ranks test was used for statistical analysis based on the number of participants' data collected (Dimiter & Rumrill, 2003). If the project obtains about 30 participants a paired t-test might be used. The results did show increases between the pre-test correct questions and the post-test correct questions, however it was not statically significant. There were six participants that were asked if they wanted to participate in the educational session and all six completed the surveys (n=6).

The demographic survey contained four questions (Appendix C). The data was collected from one clinical site, so the demographic data is not as varied. For example, one question asks what kind of clinical site do you practice at. The responses were all pediatric clinical sites. Other results that did not have variance was female vs. male and what profession they were. The responses were all female and all medical doctors.

The data on number of questions correct on the pre-test versus the number of questions correct on the post-test did not yield statistically significant results. Question #2 was an important question to analyze because it was related to the yellow zone management and a

practice change. The results for comparing if the participants answered this question correct on the pre-test and post-test were also not statistically significant.

At the end of the post-test there were three open-ended questions to capture the participants' opinions about the project and implementing a Quality Improvement project in their practice. Some of the written answers provided insight into the project. Some of the key themes from one open-ended question about how they felt about Quality Improvement projects was that they were supportive of them and that they felt they were important and needed. A key theme from the open-ended question about barriers to Quality Improvement projects was the time needed to educate staff and extra paperwork or "clicks" in the electronic health record. For the final open-ended questions about if they found the Asthma Clinical Practice Guidelines and educational session helpful the theme from the participants was "yes".

Data is still being collected and results may change. Depending on how many participants are included in the project the results may yield statically significant results and the test used for statistical analysis may change as well.

Results Discussion

The results were considered negative or neutral. Some explanations for this would be a low n value. There were only six participants and the data was not statistically significant, even though the number of correct questions increased between the per-test and post-test. Changes for the project are ongoing with the goal of implementing the educational session the two remaining pilot practices.

What I found in the literature was that a decision support tool and an educational component is considered the best to improve provider adherence. The Asthma Clinical Practice Guidelines will be the support tool and combined with my educational session there is hope that

this will increase provider adherence to these new guidelines. The project changed and the outcomes changed from collecting data on provider adherence to provider knowledge. The results from the project are different from the evidence synthesis, but it does show that the education component was helpful to the providers.

Conclusion of Chapter 2

Participants felt that the educational session was helpful and that quality improvement projects were important. While the results were not statistically significant, they did show an increase in correct responses when comparing the pre-test to the post-test. There is potential for the stakeholders to adopt this project when they do a larger rollout of the Asthma Clinical Practice Guidelines. This DNP project implemented the educational sessions at pilot sites and the data will be presented to the stakeholders to gain support for the Dignity project. The stakeholders would be very likely to adopt this project and intervention to help introduce the clinical practice guidelines to multiple other practices.

Chapter 3

This final chapter explores the DNP project in terms of larger impact and the future. The impact of the project will be discussed as well as the dissemination plan. The financial implications of the project and a cost/benefit analysis will also be completed. This financial information will influence the sustainability of the project. Future application of the DNP project and recommendations for continuing the project are also discussed.

Impact of Project

This DNP project can impact patients, providers, the system, and policy. The main impact is on providers, the educational session introduced them to the guidelines and the new yellow zone management. Patient will be eventually impacted by receiving consistent asthma

management care. The system and workflow will be impacted by this new tool. A potential barrier is creating more work for the providers and support staff by changing the system. Policy will be impacted because these guidelines will hopefully be followed.

Financial Implications

A cost and benefit analysis for this project is provided is Appendix F. The costs for this project only include paper printing for the surveys. A quote was obtained from FedEx Online Printing to provide an accurate cost for project replication. There were no monetary benefits for the analysis, however a benefit is that provider knowledge is increased.

Policy

The current policy that affects a quality improvement project like this one is meaningful use policies. Meaningful use is designed so that providers can state that they are using certified Electronic Health Record (EHR) technology. It is designed to measure data in quality and quality. This project will most likely have an impact on providers and charting for meaningful use. This cab ne a benefit because the technology of the EHR will be used to improve patient's health. A barrier to this policy is that providers feel like it is a burden and controlling to be required to meet all of these different expectations.

Leader and Innovator

There were many strengths and facilitators to make this project a success. When the asthma team was created Dignity placed a performance excellence leader in charge of the Asthma project. This person helped organize team meetings, create agendas, and move the project forward. They were the contact person for the ASU DNP project. The mentors and professors from ASU were also excellent facilitators in helping the DNP project be successful. They helped me overcome barriers and challenges I faced during this process. Some of the

barriers and challenges included cancellation of team meetings. We are meeting every other week, so when a meeting would be cancelled there would be a large gap and delay progress. There were several changes in team members and some difficulty recruiting team members to be involved in this project. There was also the challenge of different timelines. The deadline for the DNP project was May for graduation. There is no deadline for the Dignity project, so the project had to be fit in with their timeline.

These barriers allowed me to develop my DNP leadership skills and my interprofessional skills. I feel that I was able to work towards many different DNP essentials during this project and learned how to implement a project with a timeline. I know that as a future DNP graduate I am prepared to take on challenges and projects with a group.

Sustainability

Sustainability of the project will depend on the team members of the Dignity Asthma team. The DNP student will finish implementing the project at the pilot practices and present the findings to the key stakeholders. From there a team member of the Dignity Asthma team can implement the educational sessions with the larger roll-out. The entire project, including survey administration, educational session and questions takes about 30 minutes. This can easily be implemented at lunchtime or during a staff meeting.

Further Applications

The plan for dissemination is to continue to implement the DNP project in the three pilot practices. Only the pediatric practice has had the project implemented and data collected. The PCH medical group will have a meeting at the end of May where the project will be implemented and data collected. I am still trying to schedule a time for the project with the

family practice, but there is no definite date for data collection. This data will be presented to key stakeholders to support a larger roll out of the Asthma Clinical Practice Guidelines.

The next plan for the project would be to implement the educational session and Asthma Clinical Practice Guidelines in practices in the Phoenix Children's Care Network (PCCN) and the Arizona Care Network (ACN). There is not currently any plans to extend this project beyond Arizona. The project abstract and final manuscript has been submitted to the Pediatrics journal and the final poster presentation will also be submitted to the local NAPNAP conference.

Gaps Identified During Project

What was found in the literature was that a decision support tool and an educational component is best to improve provider adherence. The Asthma Clinical Practice Guidelines will be the support tool and combined with my educational session there is hope that this will increase provider adherence to these new guidelines.

Recommendations for future study include collecting more data, specifically the other two practices I the pilot group. The amount of data collected did not yield statistically significant results, but might with a large data collection. The demographics were also not varied in certain areas. For example, the practice location was only pediatric clinics because the project has only been implemented in one clinic.

Conclusion

Participants felt that the educational session was helpful and that quality improvement projects were important. The next steps for the project would be to use the data and adjust the educational sessions. The team members of the Dignity Asthma Team will be presented with the data collected from this project to assess how effective the educational sessions were. This

project might supply data to support the further development of the Asthma Clinical Practice Guidelines project from key stakeholders

Future work on the project would be to expand the educational sessions to all the practices in the ACN and PCCN who will be provided the new asthma clinical practice guidelines. Future work could include measurement of outcomes related to the content in the practice guidelines. For example, influenza vaccinations are part of the guidelines and the measureable outcomes would be the number of pediatric asthma patients who received the influenza vaccine that year.

A bigger idea for future implications also includes the foundation for other quality improvement projects related to other area of health. For example, another health disease process like diabetes might be identified as a quality improvement topic. The team members on that new project could look at our project development stages and use out project development steps to guide their project.

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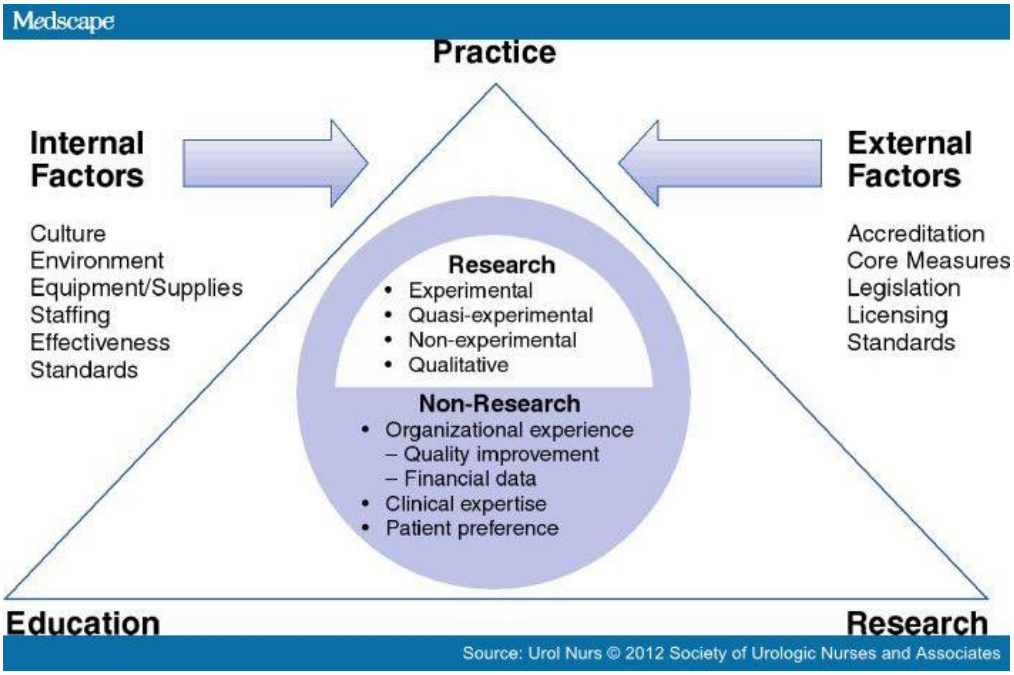
Appendix A

Synthesis Table

Studies	1	2	3	4	5	6	7	8	9	10
Intervention Variables										
DS	X		X							
WBI								X	X	
EM	X				X	X	X	X	X	
NAF						X	X			
BI		X	X							X
OC	X									X
EO	X			X						X
Setting/ Demographics										
PCO	X		X		X	X		X	X	X
H/ED							X			
ADX	X	X	X	X	X	X	X		X	X
ODX								X		
Dependent Variables										
PCM	X					X	X			
SMEAAP	X									
EDVH	X	X								
MDWS	X									
IMA								X	X	X
AD			X		X	X	X			
PCPO				X						
Level of Evidence	I	I	I	II	III	III	III	I	I	II

Appendix B

Visuals of Conceptual Framework and Evidence Based Practice Model



Appendix C

Demographic Survey for Educational Session

Asthma Project Demographic Survey

1. What is your profession?
    a. MD
    b. PA
    c. NP
    d. Other

2. What is your gender?
    a. Male
    b. Female

3. How many years of experience in your profession do you have?
    a. <1 year
    b. 1-5 years
    c. 5-10 years
    d. 10-15 years
    e. >15 years

4. What kind of practice do you work at?
    a. Pediatric primary care practice
    b. Family primary care practice

Appendix D

Pre/Post-Test for Educational Session

Asthma Project Pre-Test

To keep participants confidential we will be storing the data under a code created by the last two numbers of your phone number and the first two letters of the city you were born in. In the spaces please provide the first two numbers of your phone number __ __ and the last two letters of the city you were born in __.

1. How often would spirometry testing be done?
   a. Every 6 months
   b. 1-2 years
   c. Every 5 years
   d. Only once

2. For acute loss of asthma control, or the yellow zone, what medications management is appropriate?
   a. Inhaled corticosteroids (ICS)
   b. Short acting beta antagonists (SABA)
   c. Long acting beta antagonists (LABA)
   d. Leukotriene modifiers

3. ~~How often should asthma control be assessed by a validated tool~~ (i.e., Asthma Control Test (ACT))?
   a. At well child checks
   b. At appointments related to the child's asthma
   c. At every visit

4. Routine radiographic imaging and laboratory testing is not recommended?
   a. True
   b. False

5. What is a reliable system?
   a. A failure-free performance maintained in a short period of time
   b. A system that does not include a variable environment
   c. A failure-free performance maintained over time

6. Steps to design a reliable system include which of the following?
   a. Assess current reliability
   b. Redesign the system with improvements targeted at weak links
   c. Identify weak links for improvement
   d. Monitor and validate the new system is achieving desired outcomes
   e. All of the above

7. A Quality Improvement team would do all of the following except?
   a. Monitor desired outcomes to see if improvements meet outcomes
   b. Stop tracking data after a few quarter or months
   c. Modify workflow to reflect the desired reliable system
   d. Identify areas for improvement and weak links in the system

8. How do you feel about Quality Improvement projects, such as these new asthma guidelines?

9. What do you think are some barriers to Quality Improvement projects?

10. Did you find this educational session helpful to introduce the new asthma Clinical Practice guidelines?

Asthma Project Post-Test

1. How often would spirometry testing be done?
   a. Every 6 months
   b. 1-2 years
   c. Every 5 years
   d. Only once

2. For acute loss of asthma control, or the yellow zone, what medications management is appropriate?
   a. Inhaled corticosteroids (ICS)
   b. Short acting beta antagonists (SABA)
   c. Long acting beta antagonists (LABA)
   d. Leukotriene modifiers

3. ~~How often should asthma control be assessed by a validated tool~~ (i.e., Asthma Control Test (ACT))?
   a. At well child checks
   b. At appointments related to the child's asthma
   c. At every visit

4. Routine radiographic imaging and laboratory testing is not recommended?
   a. True
   b. False

5. What is a reliable system?
   a. A failure-free performance maintained in a short period of time
   b. A system that does not include a variable environment
   c. A failure-free performance maintained over time

6. Steps to design a reliable system include which of the following?
   a. Assess current reliability
   b. Redesign the system with improvements targeted at weak links
   c. Identify weak links for improvement
   d. Monitor and validate the new system is achieving desired outcomes
   e. All of the above

7. A Quality Improvement team would do all of the following except?
   a. Monitor desired outcomes to see if improvements meet outcomes
   b. Stop tracking data after a few quarter or months
   c. Modify workflow to reflect the desired reliable system
   d. Identify areas for improvement and weak links in the system

Appendix E

IRB Approval Letter

EXEMPTION GRANTED

Danielle Sebbens
CONHI - DNP
-
Danielle.Sebbens@asu.edu

Dear Danielle Sebbens:

On 1/22/2016 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Implementation of Pediatric Asthma Clinical Practice Through Provider Educational Sessions
Investigator:	Danielle Sebbens
IRB ID:	STUDY00003020
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Asthma Project Reccruitment Letter.pdf, Category: Recruitment Materials; • Foote Pre-Test Post-Test v.3.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Foote Educational Session Timeline.pdf, Category: Other (to reflect anything not captured above); • Foote HRP-503a.PROTOCOLSOCIALBEHAVIORAL v.7.docx, Category: IRB Protocol; • Approval Email.pdf, Category: Off-site authorizations (school permission, other IRB approvals, Tribal permission etc); • Foote Demographic Survey.pdf, Category: Measures (Survey questions/Interview questions /interview

Appendix F

Cost and Benefit Analysis

	Month 1	Month 2	Month 3	Month 4
Costs				
Paper Surveys	$20.70	$20.70	$20.70	$207.00
Benefits				
Data Stored	$0	$0	$0	$0

At FedEx Print Online to print 10 copies of a 4 page document costs $20.70. For the first three months 10 copies are needed for each month for each pilot clinic site. For the fourth month 100 copies are needed for a larger rollout of the educational sessions.