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## **Pediatric Immunization Program to Lessen the Lack of Services in Rural Communities**

Shannon London Nowiski  
*Walden University*

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# Walden University

College of Nursing

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Shannon London Nowiski

has been found to be complete and satisfactory in all respects,  
and that any and all revisions required by  
the review committee have been made.

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Walden University  
2025

Abstract

Pediatric Immunization Program to Lessen the Lack of Services in Rural Communities

by

Shannon London Nowiski

MS, Walden University, 2015

BS, Western Governor's University, 2009

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

February 2025

## Abstract

The lack of resources in rural communities encourages new programs to improve outcomes in health and wellness. This project aimed to reduce the vaccination barriers of transportation and time by bringing vaccines to the children in the existing medical clinic. The purpose of this doctor of nursing practice project was the development of a sustainable vaccination program for rural communities. The practice-focused question was: Can a community team develop a sustainable plan to provide education and the provision of vaccines in a rural community? This included proposing clinical practice guidelines (CPGs) for providers regarding the education of patients, families, and the community as well as the correct provision of vaccines according to current medical guidelines. The theoretical framework that guided the project was Mobilizing for Action Through Planning and Partnerships, a community-driven strategic planning process to achieve health equity. A team consisting of a physician, immunization consultant from the county health department, and staff met over 4 weeks and developed the CPGs and an action plan to provide immunizations at the family practice clinic project site. Staff will provide support for supplies, storage, and documentation. The future plan is to offer an onsite clinic at a local school serving K–12 students. The implementation of this plan and its impact on social change will include evaluating immunization rates, parental acceptance, and the disease rates in this county. The project is replicable at other small rural clinics to address the equity and inclusion of the very diverse rural populations in these communities. Implementing this plan improves child, family, and community health and wellness, then more clinics that implement the plan, the greater the outcomes.

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## Dedication

To my children, Layne, Allie, Kiley, Kadey, Crew, and Hanna, for making me want to be a better mother, better human, and better nurse. I'm proud of all of you and will forever support you in your educational and life goals, as you have mine. I love you.

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To Dr. Mary Garner for being my biggest supporter through the years (and years) of completing this educational goal and lifelong dream by motivating and often pushing me through, making what seemed daunting and difficult actually possible.

To Dr. Robert McWhirt, who answered his phone when I expected to leave a message as a student number, resulting in an hour-long call of support and encouragement that prompted the enthusiastic rejuvenation of my desire and motivation to complete this project.

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## Section 1: Nature of the Project

### **Introduction**

Rural communities, such as this one where the project site is in the Midwest, often face barriers to accessing vaccines, leaving the population unvaccinated and vulnerable to preventable diseases. Parents may want to have their children immunized but are not able to overcome the barriers of vaccine availability, cost if the family is uninsured or underinsured, the limited schedule of the immunizing facility or parents' conflicting work schedule, transportation to a vaccinating facility, or lack of education regarding the importance and safety of vaccines (Hendriksz et al., 2013).

The purpose of this doctor of nursing practice (DNP) project was to lead a multidisciplinary community team to develop a community-practice partnership plan that included education and the provision of vaccines. The program and clinical practice guidelines could be used by other rural community practices to create structures to expand vaccine resources, eliminate barriers, and protect families against disease, thus contributing to equity and inclusion by helping diverse patient populations.

### **Problem Statement**

With the increasing outbreaks of vaccine-preventable diseases in the United States (Schuchat, 2015), there is increasing focus on those that are not immunized. Individuals lacking vaccines are often the victims of outbreaks of preventable diseases (Anderson, 2015). In a recent study reviewing outbreaks of measles and pertussis, Phadke et al. (2016) found that 56% and 45% of cases, respectively, were in unimmunized individuals.

While religious and social beliefs make up a large portion of the reasons parents do not get their children immunized, there are number of other identifiable barriers as well. Parents may want to have their children immunized; however, barriers of finding and affording vaccines, and making times and travel arrangements to obtain vaccines remain arduous barriers (Hendriksz et al., 2013).

In a very rural community in the northern Midwest region of the United States, there is only one family practice facility (i.e., the project site), which has traditionally not provided vaccinations as part of it is practice. The county health department is currently the only source of vaccines for this 2,100 square mile county, and the only vaccination clinic is 30 miles away, leaving a gap in family nursing care. According to records at the county health department in 2019, only 75% of children 19–35 months old were up to date on recommended immunizations of tetanus/diphtheria/pertussis, polio, measles/mumps/rubella, haemophilus influenza, varicella, and pneumonia. When considering those who had also completed the two-dose series of hepatitis A vaccines, the number of children completely immunized dropped to 64%. County health department records for adolescents aged 13–18 years old indicated that 87% were immunized. When considering those who had also completed an age-appropriate number of doses to be up to date on the human papilloma virus vaccines, the number of adolescents completely immunized dropped to 36%. The gap in nursing practice was the current lack of readily accessible pediatric immunizations for families of the project site community, which resulted in the decreasing rates of fully immunized children. To address this gap in nursing practice, I conducted this project to develop a community immunization program

with clinical practice guidelines that could be shared with other rural health organizations and practices, particularly the emerging nurse-run clinics.

### **Purpose Statement**

In the rural community where the project site is located, the number of children receiving the full vaccinations recommended by the U.S. Centers for Disease Control and Prevention (CDC) decreases as they age and the number of recommended vaccine boosters increases. The existing family practice clinic in this rural community does not have the skills to implement a new rural vaccination clinic; however, a community-based program could reduce access barriers. The purpose of this DNP project was to lead a community-practice partnership in the development of a sustainable vaccination program for this rural community. This included the development of clinical practice guidelines for providers regarding the education of patients, families, and the community as well as the correct provision of vaccines according to current medical guidelines. Developing clinical practice guidelines will provide the skills needed for the existing rural family practice clinic to establish a new rural vaccination clinic and close the gap in practice, offer vaccinations to more families, and increase community disease prevention.

The practice-focused question was: Can a community-practice partnership develop a sustainable plan to provide education and provision of vaccines in a rural community?

### **Nature of the Doctoral Project**

Vaccines are a critical medical advancement that prevent the spread of disease and save lives (Killeen, 2007). Rural communities have higher rates of illness in general

as well as illness in advanced stages and preventable illness, which is largely due to the lack of resources and increased barriers to vaccinations in rural areas (Warsaw, 2017). Determining the scope and needs for developing an immunization program with clinical practice guidelines required collaboration with the county health department and other stakeholders, such as school officials. Further community collaboration can assist with funding, marketing, and maintaining sustainability.

Sources of evidence for this doctoral project included data on the positive effect of pediatric immunizations and immunization rates in rural areas. Sources also included data on the barriers to immunizations in rural areas as well as stakeholders and professional partnerships that decrease those barriers. A search of the extant literature was supported by the information available from a variety of federal and state vaccine program initiatives. I present this information in the following subsections.

### **Forming Partnerships to Increase Rural Immunization Rate**

In the article, “Forming Partnerships to Increase Rural Immunization Rates,” the Association of State and Territorial Health Officials (ASTHO) discussed the importance of partnerships as a strategy to improve rural immunization access and, thus, rates (Nair et al., 2023). The authors detailed how partnerships are vital to increasing immunization rates in rural areas. They recommended collaboration between health care providers; public officials; and other community organizations, such as schools and churches, to spread awareness and availability of life-saving vaccines. Together, these key players can reduce rural areas’ unique barriers, including limited access to health care services and vaccines, transportation, and vaccine hesitancy. According to the authors, these

partnerships, between the people that know their community best, can have a significant impact by tailoring their outreach efforts and communication methods to engage the community and share data to analyze and improve their efforts. These partnerships between the community's known and respected entities can help to build the community's trust in health care providers and their recommendations. Furthermore, combining their efforts will help the partnerships to ensure vaccine availability in the rural areas that they serve.

### **Vaccines for Children Program**

The mission of the CDC Vaccines for Children (VFC) program is to ensure that eligible children receive vaccines at no cost to their families (Talbird et al., 2022). Eligible children were defined as those that are Medicaid eligible, uninsured, underinsured, or American Indian or native. As with other government-funded programs, the VFC program has enrolled health care providers who are able to provide access to these no-cost immunizations (Talbird et al., 2022). Furthermore, vaccines for children can be distributed through rural health clinics and county health departments. This program also helps promote education on the vaccines as well as to detail the urgency of timely administration of the recommended vaccines (Talbird et al., 2022). The VFC program helps to increase immunization rates, which in turn helps to protect these underserved children and families from preventable diseases.

### **Mobile Vaccination Centers Improve Vaccine Accessibility**

The Federal Emergency Management Agency (FEMA) is working with national and local partners to create and employ more mobile vaccination centers to help people

receive life-saving vaccines closer to home (Kaufman et al., 2021). Mobile vaccination centers can travel to the most remote communities and be set into action with the support of local public health clinics, health care providers, schools, churches, and businesses as employers. Mobile vaccination centers reduce vaccine barriers, such as transportation, limited access to medical providers or vaccine centers, and availability overall (Kaufman et al., 2021). The FEMA has facilitated over 500 mobile vaccination events and provides funding and supplies to continue expanding this mission (Kaufman et al., 2021). Mobile vaccination centers are a key part of bringing vaccines to all communities.

### **Rural Counties Making Strides With COVID-19 Vaccines**

The state of Arizona has rural counties making notable progress in vaccination with mobile outreach programs (Conover, 2021). The University of Arizona developed the MOVE UP program, creating and mobilizing vaccination centers to rural communities, including small farming communities and underserved populations (Conover, 2021). The MOVE UP program reduces the transportation barrier known to these communities by traveling to farms, senior housing complexes, and schools. These mobile centers are staffed by health professionals and students from Arizona's public health colleges (Conover, 2021). Together, they have administered thousands of vaccines across Arizona's rural counties, and these efforts have increased Arizona's vaccination rates to surpass national averages for similar regions, thus confirming the productivity and necessity of mobile vaccination centers.

## **Vaccine Hesitancy in Rural Pediatric Primary Care**

Mical et al. (2021) investigated the barrier of vaccine hesitancy within rural pediatric populations, specifically in primary care settings. Vaccine hesitancy is considered the reluctance or even refusal of individuals to vaccinate, even when vaccines are available to them (Mical et al., 2021). Hesitancy is fueled by mistrust of health systems, misinformation regarding the benefits of vaccinating and the risks of not vaccinating, and personal beliefs. Furthermore, in rural areas, hesitancy is complicated by limited health care access and resources; socioeconomic factors, such as cost; and differences in education achieved overall and specifically regarding vaccines (Mical et al., 2021). The authors detailed that this increased vaccine hesitancy leads to lower vaccination rates and an increased risk of disease outbreaks.

Mical et al. (2021) also highlighted several factors contributing to vaccine hesitancy in rural pediatric primary care. Mistrust in government and health care systems mistrust is exacerbated by misinformation circulating both online and offline. Misinformation and lack of education about vaccine safety is notably worse in areas where internet access is not consistent or reliable and where trusted health care professionals are scarce. Misinformation regarding the safety and importance of vaccines only increases hesitancy. Some parents in rural settings feel their children are less exposed to the diseases that vaccines prevent due to the relative isolation of their communities, therefore, underestimating the benefit and urgency of vaccinating (Mical et al., 2021).



Additionally, Mical et al. (2021) discussed health care provider challenges, such as not having access to the same resources and educational materials that are available to providers in urban settings, which makes it difficult to combat misinformation or to provide thorough patient education. Time constraints are also a challenge because there are fewer health care providers available in rural areas; therefore, appointments are harder to get and often rushed (Mical et al., 2021). Health care professionals may not have adequate time to engage in detailed conversations with hesitant parents to earn their trust and address their concerns or provide the education needed to alleviate their fears.

The outcome of unaddressed hesitancy in rural communities is demonstrated in lower vaccination rates (Mical et al., 2021). As more parents refuse or delay vaccines, community immunity decreases, thus increasing the likelihood of outbreaks in preventable diseases. Outbreaks of preventable diseases are more dangerous in rural communities where resources are limited because hospitals may not have the staff or supplies to manage an outbreak (Mical et al., 2021). Vaccine hesitancy, therefore, puts unvaccinated children and entire communities at risk.

### **Approach**

The approach taken in the current project was the Mobilizing for Action through Planning and Partnerships (MAPP) developed by the National Association of City and County Health Officers (2024). MAPP is a community-driven strategic planning process to achieve health equity that provides a structure for communities to assess their most pressing population health issues and align resources across sectors for strategic action (National Association of City and County Health Officers [NACCHO], 2024). MAPP

emphasizes the vital role of broad stakeholders and community engagement; the need for policy, systems, and environmental change; and alignment of community resources toward shared goals (NACCHO, 2024). The process results in a community health (needs) assessment and a community health improvement plan (Childers-Strawbridge et al., 2022).

Conducting this doctoral project first required assembling an expert team, which included a physician as medical director; the immunization director for guidance in the provision of vaccines; and an office manager for staffing, program implementation, and maintaining electronic health records. The team also included the superintendent of schools, a representative of the county supervisor's office, and the local Chamber of Commerce. This multidisciplinary expert team helped me organize and analyze the needs and resources of the community to best create program guidelines with the medical staff providing the clinical practice guidelines for correct administration of and education regarding pediatric vaccinations. I conducted this DNP project to decrease barriers to vaccines and make them more readily available to more families, thus improving individual and community health by outlining the skills needed to implement a new rural vaccination clinic.

### **Significance**

A new rural immunization clinic could potentially reduce barriers of obtaining recommended pediatric immunizations. Bringing immunizations to the small, rural community project site could help to overcome the barriers of vaccine availability; time and scheduling to immunize; transportation to farther existing vaccination clinics; and

lack of vaccine education available to patients, families, and the community. One focus of the Healthy People 2020 wellness agenda established by the U.S. Department of Health and Human Services is improving the health of the United States through prevention by means of immunizations (Office of Disease Prevention and Health Promotion, n.d.). The goal is to increase pediatric immunization rates, thus decreasing vaccine preventable infectious diseases, which was emulated by the pediatric immunization program in the current project.

This doctoral project will not only improve the overall health and wellness of a real community but can serve as practice guidelines for other communities around the world to improve their vaccine readiness. Successful implementation and sustainability of these pediatric immunization clinical practice guidelines can serve as a steppingstone for creating guidelines for the correct provision and education for adult immunizations. Implementing this program with clinical practice guidelines will create and expand the existing community-practice partnerships for maintaining good health and wellness in the project site community and other rural communities.

The mission of Walden University (2018) is to promote and facilitate partnerships, research, and projects that promote positive social change. Walden University provides students with the means and resources to advance their scholarly ideas into strategic actions to better individuals, groups, and societies. A new immunization program required collaborative partnerships between existing immunization programs, health care providers, community stakeholders, funding sources, vaccine and materials suppliers, and clinic staff. Research was also required to gather data to support the project site

community's specific needs as well as to develop program implementation and evaluation methods. This new vaccination clinic is a model of the social change supported by Walden University in that the clinic would bring a currently lacking but vital resource to a community that would otherwise struggle to attain it.

### **Summary**

Immunizations are a lifesaving medical advancement; however, rural communities often have barriers to accessing vaccines that leave children vulnerable to preventable diseases. I conducted this DNP project to create a multidisciplinary team to work together to develop a vaccination program with clinical practice guidelines for education and provision of vaccines in a rural community. The successful implementation of these guidelines will benefit this rural community and can be used in other areas to increase access to vaccines and improve health and wellness. In Section 2, I will address the background and context of this project.

## Section 2: Background and Context

### **Introduction**

The gap in nursing practice addressed in this project was the current lack of readily accessible pediatric immunizations for families of the project site community, resulting in the rates of fully immunized children decreasing as they age. The project, a vaccination program with clinical practice guideline, could be shared with other rural health organizations and practices, particularly the emerging nurse-run clinics. The clinical practice question was: Can a community-practice partnership develop a sustainable plan to provide education and provision of vaccines in a rural community? I conducted this DNP project to decrease barriers to vaccines and make them more readily available to families, thus improving individual and community health by outlining the skills needed to implement a new rural vaccination clinic.

### **Concepts, Models, and Theories**

I used the MAPP approach, developed by the NACCHO (2024), for this project. MAPP is a community-driven strategic planning process to achieve health equity that provides a structure for communities to assess their most pressing population health issues and align resources across sectors for strategic action (NACCHO, 2024). MAPP emphasizes the vital role of broad stakeholders and community engagement, the need for policy, systems, and environmental change, and alignment of community resources toward shared goals. The process results in a community health (needs) assessment and a community health improvement plan (Childers-Strawbridge et al., 2022).

The approach taken in this doctoral project first required assembling an expert team comprised of a physician as medical director; the immunization director for guidance in the provision of vaccines; and an office manager for staffing, program implementation, and maintaining electronic health records. The team also included the superintendent of schools, a representative of the county supervisor's office, and the Chamber of Commerce. This multidisciplinary expert team helped me organize and analyze the needs and resources of the community to best create program guidelines with the medical staff providing the clinical practice guidelines for correct administration of and education regarding pediatric vaccinations.

### **Relevance to Nursing Practice**

The Association of State and Territorial Health Officials (ASTHO) (2024) identified availability, insurance gaps, and transportation as barriers to vaccines. The ASTHO also identified strategies to increase immunization coverage and worked to increase locations able to provide access to vaccinations by partnering with local churches and schools as well as engaging local emergency service workers. Additionally, the ASTHO used social media and local newspapers to emphasize that vaccines are safe and lifesaving as well as provided financial assistance to children and families that are uninsured or underinsured.

In addition to churches and schools, the CDC uses rural health clinics to employ their VFC program, which provides free vaccines to kids under Medicare and Medicaid guidelines (Centers for Disease Control and Prevention, 2024). The FEMA worked to establish mobile units, in addition to existing brick and mortar sites, to provide

immunizations (Federal Emergency Management Agency, 2021). Mobile units include trailers or portable supplies to set up pop-up units in areas where people gather to work or socialize, eliminating the transportation and time barriers to vaccination. These mobile units can also seek out and service areas with fewer resources, such as rural areas.

In their study, Mical et al. (2021) addressed vaccine hesitancy, finding that fact-based, presumptive language models remarkably increased caregiver confidence in vaccine recommendations. The authors also found that motivational interviewing increased compliance by listening to the caregivers' hesitations. Providers using compassion and empathy to respectfully replace myths with facts helps to foster trust and willingness to change on the part of the caregiver. This doctoral project helped to close the nursing practice gap of the current lack of readily accessible pediatric immunizations for families of rural communities by collaborating with local healthcare professionals, educating, and increasing access to life-saving vaccines.

### **Local Background and Context**

The setting for the new vaccination clinic was a small, rural community in the northern Midwest. The clinic would be housed in an existing family practice clinic in a small town located along the distal edge of a geographical subpeninsula. The medical clinic sees patients across the entire life spectrum, from newborns to geriatrics. A great number of patients are infants and pediatrics that are recommended to receive many vaccines and doses throughout their childhood. The clinic could also provide immunizations through the other services supported by and staffed by the clinic, including the student health center at the only town school and at the community center.

With the support of the county health department and the family practice providers and staff, this project would have the human resources necessary to be successful. This project could reduce the barriers of transportation and time by bringing vaccines to the children and eliminating parents having to take time off work and provide or find transportation to the county health department. Therefore, this project would not only be feasible but would be very welcomed and valuable to this community. Offering vaccines at a local vaccination clinic within the family practice office would allow pediatric vaccination needs to be evaluated and vaccinations to be provided during office visits.

### **Role of the DNP Student**

As a masters-prepared family nurse practitioner in a very rural community, the glaring lack of resources and related health consequences are a part of my everyday practice. Being a lifelong learner with the drive to give back to my community led me to enroll in this doctoral nursing program as a tool to use to expand my knowledge, focus on quality and accessibility of care, and address gaps in care. My role in this doctoral project was to lead the multidisciplinary expert team in developing and implementing a community-wide plan with practice guidelines for the safe and efficient provision of vaccines as well as program sustainability. My role included guiding the team in organizing and analyzing the needs and resources of the community and transcending those needs to clinical practice guidelines for correct administration of and education regarding pediatric vaccinations,

As a family nurse practitioner, I have somewhat reliable and routine access to children for wellness and acute illness visits. Not having the resources to update their



recommended vaccines is a tremendous limitation to the necessary care I can provide. Knowing that wellness includes disease prevention, vaccines are a necessary part of the care families are relying on me to provide. Always striving to do my best for families and for my community and seeking ways to facilitate vaccine awareness and availability is my responsibility.

Stories of adverse side effects and the fear of those outcomes are often more memorable than factual vaccine information. Hearing a story of how an individual's health problem may have been related to vaccines cannot outweigh the benefit the vaccines have provided to the millions of vaccinated children. Seeing potential side adverse effects as the rule and not the exception could lead to bias regarding vaccine safety. Similarly, focusing on avoiding that slim risk for side effects rather than the much greater benefit of receiving vaccines could lead to increased vaccine hesitancy. To address these biases, it is necessary to take simple and repeated opportunities to educate and provide statistics regarding the small risk of adverse effects from immunizing as well as the greater long-term benefits of immunizing. Furthermore, educating caregivers on identifying trustworthy and reliable sources of information that are current, relevant, and authored by those that have done immeasurable research can empower caregivers to educate themselves to be more confident in their vaccination decisions.

### **Role of the Project Team**

The process by which the team members were presented with the background information and evidence related to the project started with a presentation of the statistics of unvaccinated children by me. This allowed the team members to understand the

magnitude of the problem and the necessity of a plan to resolve the problem. I then presented evidence-based practices for addressing the problem and creating a plan for problem resolution. Once the project plan was drafted, I presented the plan to the team members. Finally, the team collaborated on refining the project plan and guidelines over a period of 4 weeks.

### **Summary**

In this section, I identified the relevance of this project's practice problem to my community and many rural communities like mine. There is a wealth of existing scholarship providing strategies for creating successful vaccination clinics that was used to help shape this project. In this section, I also reviewed how this doctoral project closed the practice gap by addressing barriers to attaining vaccines and assembling an expert team to create clinical practice guidelines. The roles of the team were reviewed as were the motivation and role of myself, the doctoral nursing student and project lead.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

The gap in nursing practice that this project addressed was the current lack of readily accessible pediatric immunizations for families of the project site community, resulting in the rates of fully immunized children decreasing. The project, a community-wide vaccination plan with clinical practice guidelines, could be shared with other rural health organizations and practices, particularly the emerging nurse-run clinics. I conducted this DNP project to decrease barriers to vaccines and make them more readily available to more families, thus improving individual and community health by outlining the skills needed to implement a new rural vaccination clinic. In Section 2, I identified existing scholarship on rural vaccine clinics and vaccine barriers, how the clinical practice guidelines this project created will close this nursing gap in practice, and the roles of the expert team that collaborated to make this project successful. In Section 3, I discuss the collection and analysis of evidence as well as the steps that were necessary to complete this doctoral project.

#### **Practice-Focused Question**

The gap in practice in the very rural community project site was the decline in pediatric vaccinations as children age due to accessibility, affordability, and acceptability. The practice-focused question was: Can a community-practice partnership develop a sustainable plan to provide education and provision of vaccines in a rural community? This included a community-wide vaccination plan with clinical practice guidelines for providers regarding the education of patients, families, and the community as well as the

correct provision of pediatric vaccines according to current medical guidelines.

Expansion of the only primary care practice in the project site community and locations at additional sites, such as the school, will allow nurses to respond to this community need.

### **Sources of Evidence**

Vaccines are credited with being one of the most valuable medical advances since the mid-20th century (Killeen, 2007). Since this time, vaccines have prevented disease and saved countless lives (CDC, 2017). Furthermore, the lives saved through vaccine programs are comparable in number to the lives saved with the inventions of seatbelts and smoke detectors (Killeen, 2007). Children that go unimmunized, for any reason, are more often the victims in preventable disease outbreaks (Anderson, 2015). This becomes a more urgent circumstance when coupled with the findings of current literature suggesting a recent rise in the number of vaccine-resistant parents (Saad et al., 2009). Rural areas across the United States continue to have higher rate of illnesses, the complication of discovering illness in advanced stages, and suffering from preventable illness due to lack of resources (Warshaw, 2017).

I located sources of evidence regarding successful rural vaccination programs through a literature search of the CINAHL and PubMed databases. In the searches, I considered only articles published in English within the past 6 years. The keyword search terms used were *vaccines*, *immunizations*, *rural*, *access*, and *barriers*. Additionally, literature searches were conducted through agency resources, such as the CDC and the National Rural Health Organization.

For the implementation of a new pediatric vaccination program, I conducted a thorough literature review to identify barriers, specifically in rural locations, to vaccination. Data from the local county health department and the project site primary care practice on the number of children that were vaccinated and the number of children that were not vaccinated defined the degree of need for this project. The literature review also helped me to identify potential barriers to immunizing, such as concerns of cost, time, transportation, vaccine availability, or education regarding the importance and safety of vaccination (Hendriksz et al., 2013). Collaborating with the local county health department, currently the only other source of vaccines for this county, was necessary to determine the needs of a vaccination program. Furthermore, I considered sources of funding and marketing to create the program and promote sustainability.

### **Analysis and Synthesis**

In this pediatric immunization program project, I also developed the clinical practice guidelines used for the development of the rural vaccination clinic. The primary source of the provision of pediatric and adolescent vaccine is the CDC (2024). This project was acceptable as a Walden University doctoral capstone, and I followed the clinical guidelines manual while conducting it.

Establishing, implementing, and maintaining a successful pediatric immunization program requires the dedicated collaborative efforts of an expert team. I invited a physician, giving preference to a pediatrician, to act as the medical director of the program. The knowledge and resources of the director of immunizations at the county health department was an invaluable asset to this expert team. The expert in

immunizations will provide guidance in identifying and contacting those in need of immunizations, educating patients and families, administering immunizations, and maintaining immunization records. This team also required an office manager to aid in staffing and program implementation as well as use of current resources and electronic health records.

This expert team needed to perform a social assessment of the needs of the community (in this case, pediatric immunizations). This epidemiological assessment allowed for identifying the health determinants and establishing the priorities for the program. An ecological assessment was then necessary to study the behaviors and environmental factors that either support or pose barriers to the success of the program. Additionally, the team needed to evaluate the administrative and policy capabilities of the program home. Once these evaluations were complete, program implementation took place. To evaluate the success and sustainability of the program as well as to identify if the program is maximizing its potential, process, impact, and outcome evaluations should be performed at regular intervals. A thorough and ongoing literature review as well as data regarding design and plans from other rural immunization programs should also be assessed to provide support to the program. Developing a program budget will aid in maximizing resources and avoiding program waste.

Identifying and securing program sponsors, sources of program funding, and affordable marketing tools helped to realize the program and encourage sustainability. This is where the county supervisors and perhaps the Chamber of Commerce could aid. The next step was to develop the clinical practice guidelines for the patient, family, and

community education. Community experts reviewed the education for appropriate literacy, cultural norms, and appeal of materials and teaching methods. Equally important to the program was the development of the clinician guidelines based on current vaccine guidelines. The community review of the clinical practice guidelines included a review of the clinician guidelines completed by a group of interdisciplinary medical professionals using the AGREE II instrument. This expert team set the parameters for evaluation of the program. The outcome measure for the project will be an evaluation of the number of pediatrics receiving immunizations after the implementation of the vaccination clinic compared to current numbers.

This project did not involve human subjects. All members of the community team were volunteers. The project was reviewed and approved by the Walden University Institutional Review Board #12-03-24-0370714. I informed the community stakeholders comprising the expert team of the purpose of the project, their roles in implementing and maintaining the project, and their ability to withdraw from participation in the project at any time.

### **Summary**

The problem of the lack of resources in the project site rural community is ongoing and increasingly observed, encouraging new programs to improve health and wellness outcome. I conducted this project to implement a community-practice partnership to develop a sustainable plan to provide education and the provision of vaccines for the project site community. Vaccines are one of the most cost-effective interventions for wellness in public health (Hendriksz et al., 2013). The more vaccinations are

administered with programs reaching rural areas deficient of resources, the more lives that will be saved.



## Section 4: Findings and Recommendations

### **Introduction**

Rural communities, such as the one focused on in this project, often face barriers to accessing vaccines, leaving their children and families unvaccinated and vulnerable to preventable diseases. The gap in nursing practice this problem encompassed was the current lack of readily accessible pediatric immunizations for families of the project site community, resulting in the rates of fully immunized children decreasing. The practice-focused question was: Can a community-practice partnership develop a sustainable plan to provide education and provision of vaccines in a rural community? The purpose of this DNP project was to lead a multidisciplinary team to develop a community-practice partnership plan, including education and the provision of vaccines. The program and clinical practice guidelines could be used by other rural community practices to expand vaccine resources, eliminate barriers, and protect families against disease.

### **Findings and Implications**

I searched the extant literature for available information from a variety of federal and state vaccine program initiatives. The findings of the literature review indicated the following potential barriers to immunization: concerns of cost, time, transportation, vaccine availability, or education regarding the importance and safety of vaccination (Hendriksz et al., 2013). I then narrowed down the barriers specific to rural areas, finding the limited resources in the most remote areas of the country as the most prominent one. Living in a rural area and being familiar with the lack of resources, I anticipated this limitation; however, the literature consistently showed that failing to immunize puts

communities at risk for illnesses that the same limited resources may be unable to treat (Conover, 2021). This realization highlights the risks of failing to immunize and heightens the need to maximize and facilitate collaboration between the existing resources. Failing to immunize puts individuals at risk, which in turn puts their families and communities at higher risk of contracting and spreading these communicable diseases. The increased number of ill individuals seeking treatment for preventable diseases can strain available resources and have a negative impact on all health outcomes. The literature unanimously recommended using available resources and fostering collaboration between those resources to maximize their potential to improve outcomes by facilitating vaccine distribution (Albers et al., 2022).

### **Recommendations**

The gap in nursing practice this project addressed was the current lack of readily accessible pediatric immunizations for families of the project site community. Developing clinical practice guidelines by facilitating the collaboration of already available human and physical resources could improve access to pediatric immunizations and help close this gap. Developing clinical practice guidelines would also improve community disease prevention, resulting in healthier communities and avoiding unnecessary overuse of existing medical resources.

### **Contribution of the Doctoral Project Team**

MAPP is a community-driven strategic planning process that provides a structure for communities to assess their most pressing population health issues (NACCHO, n.d.). Once identified, MAPP aligns multidisciplinary resources for strategic action and pivots

on community engagement and alignment of community resources toward shared goals. MAPP was important for the completion of this project and was appropriate to determine and initiate programs to support any other needs of the project site community.

The doctoral project team consisted of a physician, an immunizations specialist, and an office manager. Each member, coming with a different but related view of the project, contributed their wealth of knowledge and experience to the project team. This not only helped to build the project guidelines but also challenged other members to think critically about how the contributions of others impacted and prompted further evaluation of their own contributions. The physician amply filled the role of medical director, writing a protocol for orders related to appropriately administering vaccines and standing orders to address any potential side effects from the vaccines. The immunization director provided guidance in the provision of vaccines. This guidance reflected the knowledge and experience that only an individual who already worked with vaccines could offer. The immunization director provided several considerations, from identifying those in need of vaccines and accessing existing vaccination statuses to the ordering, handling, and storing of vaccines to the supplies necessary to physically administer vaccines. The office manager also contributed invaluable wisdom for staffing, program implementation, and maintaining an electronic health record for administered vaccines and patient recall for vaccination series. The project team also briefly included the local school superintendent as a facilitator to distribute vaccinations. Once the clinical practice guidelines were in place, the school superintendent emphatically supported a mobile vaccination unit to bring necessary vaccines to the school to access children in need of

vaccinations and eliminate the need for transportation to the limited, stationary vaccine clinics.

This plan will first be implemented in the project site, rural, family practice clinic through offering vaccines to children of my existing practice. My electronic health record has the capability to run a report by patient demographic, so this function will be used to isolate the pediatric population by age. As time allows, we intend to access immunization records for these children and see where deficits in vaccinating exist. The children's families in need of vaccines will be accessed by telephone or postal mail if unavailable by telephone and invited to make an immunization appointment. All new pediatric patients' immunization records will be assessed for the same opportunity. Moving forward, all pediatric patients' immunization needs will be assessed at each child's wellness visit, which more than coordinate with the recommended immunization schedule. This will ensure that every child has access to appropriate vaccines when due.

The future plan is to expand this new immunization program to the community school. Because time and transportation continue to be barriers to parents getting their children to the medical clinic, accessing children at school would reduce those barriers. Having the immunization clinic travel to the school on scheduled days would allow children to be immunized without adding burdens to their families' time and transportation abilities. Parent education could also be completed virtually ahead of scheduled days or at the time of vaccination at the mobile clinics. Parent participation would be necessary, and parent consent would be collected at the time of immunization

in addition to answering any additional questions or providing additional education as needed.

The developed clinical practice guidelines afford the skills needed for the rural, family practice clinic project site to establish a new vaccination clinic. Staff will be allowed time to review the guidelines and ask questions. Staff members will need to take ownership of the individual points or tasks in the guidelines that apply to their roles. Records will be kept for monitoring individual tasks, such as readying vaccine information sheets; keeping inventory on vaccine-specific stock, such as vaccines themselves, needles, gloves, and band aids; and staffing the clinic during vaccination clinic times. Implementation at the project site clinic and tracking the questions asked and follow up needed will allow for inclusion of those follow-up strategies to improve project implementation at other community clinics. Rural health clinics with similar needs and staffing would be the possible future audience for the implementation of this project.

### **Strengths and Limitations of the Project**

Local support for this doctoral project was its greatest strength. The community relies on community members to initiate, strengthen, and support programs, especially for the youth, from soccer leagues to Boy and Girl Scouts to church youth groups to Future Farmers of America. Parents, family members, neighbors, retirees, professionals, clergy, and many more selflessly and extensively offer their time and skills to support the youth of their community. Many programs to ensure growth, development, opportunities for academic and physical advancement, and the safety of youth are initiated and sustained exclusively on volunteerism. Having the enthusiastic support of the local physician,

immunization expert, office manager, and superintendent of the school to initiate a new program supporting the health and wellness of the project site community's youth was priceless.

The main limitation of this project was the limited resources, including having only one school for the community students (from preschool through high school graduation), one health department for over 1,200 square miles of families, limited medical office spaces, and limited health care staff.

## Section 5: Dissemination Plan

Dissemination of this clinical practice guideline has been a long awaited, much anticipated event. I originally had this project idea many years ago, while working as a nurse practitioner in a family practice clinic in this very small, remote community servicing patients from across the lifespan, including newborns through geriatrics. Newborns, infants, toddlers, and young children encompassed many of my wellness visits, some only weeks to months apart. The pediatric immunization schedule as recommended by the CDC includes immunizations at many of these visits (Centers for Disease Control and Prevention, 2024). It was deflating as a provider and a medical clinic to have to refer families to the only vaccination site in the county for life-saving vaccines and knowing that many of them did not have the resources to attend. From this experience, the current project was born. Over the years of project development, anticipation has continuously heightened for adding this service to the tools that the project is able to provide for health and wellness promotion and the needs of their patients and families.

The project guidelines and community dissemination plan were developed by a multidisciplinary group that included the principal of the local school and the representative from the county health department. Being a Master's-prepared nurse educator gave me the confidence and skills needed to lead this expert team and facilitate the ultimate creation of this project's clinical practice guidelines. There will be multiple phases of implementation, starting with the acquisition of supplies and vaccines, community-wide education campaigns, and onsite immunizations at the school. Tracking

the success of this community-initiated program will allow for modifications and recommendations to other rural communities across the country. Rural communities face a different set of vaccine barriers, including the need to travel over long distances for vaccination, finances, and lack of availability of vaccines. I will submit the results of this community initiative project for publication and presentation at the American Public Health Association and the National Rural Health Association.

### **Analysis of Self**

This project relentlessly pursued me, when as a family practice provider, I continued to feel disappointed in the ability my practice had to care for my young patients and their vaccination needs. On the daily, sometimes several times a day, I would review a child's vaccination record with the parent or caregiver and advise them to make an appointment with the county health department for recommended vaccines. I knew that I was often referring parents that did not have the transportation means to get their child to the health department, parents that did not understand the importance of vaccinating, and parents that worked two and three jobs to care for their families that had no time to travel to the health department. Knowing that these barriers left my pediatric patients vulnerable to preventable diseases encouraged me to begin this project. When beginning this doctoral journey, I knew my project would be the project site community's best chance to close this gap and bring vaccines to my patients. As a lifelong learner, I was excited to research not only the greatest barriers to vaccinating in a rural area but more importantly how to overcome those barriers. As a forward thinker and a planner,



facilitating an expert team and fine-tuning the clinical practice guidelines from my rough draft was pure joy.

Being a mother of six; a full-time, family nurse practitioner; a volleyball and soccer coach; and an on-and-off, due to lack of time and tuition funds, doctoral student has been overwhelming and exhausting. My desire to improve the health and wellness of my patients and my community as well as my maternal need to demonstrate to my own children that there is limitless reward in reaching for difficult goals have been relentless motivators. This project has strengthened my perseverance, integrity, and commitment. It has also highlighted and helped me to overcome my weaknesses of fatigue and procrastination. Completing this project has been a labor of love and given me a sense of accomplishment as well as intensely motivated me to tackle further health care barriers in my very rural community.

### **Summary**

This doctoral project has not only resulted in a clinical practice guideline that will pave the way to bring life-saving vaccines to rural communities, but it has also proven that uniting resources, no matter how small or how few, can have an exponential impact on the amount of good that can be done. These guidelines have brought together people that, with only their individual talents, would not have been able to make this advancement for their community. This project has also promoted collaboration and conversations regarding the limitations of our communities observed by the different stakeholders, bringing to light needs outside of our own scope that we may, when called upon, contribute valuably to improving.

The practice-focused question was: Can a community-practice partnership develop a sustainable plan to provide education and provision of vaccines in a rural community? Through goodwill and scholarship, this question was answered with a resounding affirmative. More importantly, this project will spark interest and outreach in closing more gaps and collaboration between available resources to improve our communities. This social change also addresses the equity among and inclusion of very diverse, small, rural communities.

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