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Sustainable Improvement in Immunization Rates for Seniors:

A Local and Community-Wide Effort

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Abstract

Objective: Overall: To improve influenza and pneumococcal immunization rates in patients age ≥ 65 years by developing relationships with community organizations that would provide opportunities for community member education about adult vaccines. Pre/post Surveys: To assess potential changes in influenza and pneumococcal immunization knowledge and opinions in community members exposed to an educational presentation.

Methods: Using personal and university resources, contact was made with several organizations serving the senior, underserved population in West Dayton, Ohio. An educational presentation about adult immunizations was developed and used at ten community events. The presentation included oral and written communication, and was based on the Health Belief Model. The presentation focused on dissemination of information both verbally and through low-literacy focused written information. Written material was also distributed through community channels. The effectiveness of the oral presentations was examined through pre/post questionnaires at five of the events. Statistical analysis was both descriptive and analytical.

Results: Outreach was established to more than 1,000 individuals through direct mailings, flyers and oral presentations. Presentations were made at ten community events, where more than 80% of the participants were ≥ 65 years of age. Feedback about the presentations was positive. There was statistically significant improvement in answers to questions dealing with adult vaccination.

Conclusions: Community outreach programs were successful in increasing awareness of the importance of adult vaccination among community members. Project was supported by a grant from the AAFP.

Keywords: Community, Vaccinations, Outreach, Adult, Barriers, Enabling Factors

Sustainable Improvement in Immunization Rates for Seniors: A Local and Community-Wide Effort

The senior population (age group of ≥ 65 years) is expected to more than double between 2012 and 2060 (United States Census Bureau, 2014). As the demographics of the population continue to grow, more efforts are needed to capitalize on preventive disease services.

Pneumonia and influenza vaccinations are a significant public health achievement in the 20th century and are instrumental to the protection of our nation's health. Despite this accomplishment pneumonia and influenza vaccinations rates are below Healthy People 2020 adult population targets of 90% (U.S. Department of Health and Human Services [USDHSS], 2014).

The elderly population ≥ 65 years are more susceptible and at greater risk of complications from influenza and pneumococcal infections. Influenza is a virus that can cause serious illness in the elderly. The most common symptoms of influenza are fever, cough, shaking, chills, body aches, and extreme weakness. The immune system of adults ≥ 65 years puts them at increased risk of serious infection and more susceptible to complication from influenza and pneumococcal infection. Risk factors for influenza and pneumococcal infection include compromised health and comorbidities such as chronic pulmonary disease, cardiovascular disease, diabetes and smoking (Calverley et al., 2011). Outbreak of seasonal influenza represents a significant threat to public health with elderly persons due to age and compromised health. Annual flu shots are recommended to protect the elderly against complications from influenza.

Healthy People 2020 identified targets for pneumococcal and Influenza vaccination (USDHHS, 2015). Currently vaccination rates in the elderly for pneumonia and influenza are

well below Healthy People 2020 targets despite the fact that safe and effective vaccines are easily available. Vaccination efforts in this population reflect an important opportunity for improvement. There is a call to action from the National Vaccine Advisory Committee (NVAC) of all health care providers to make sure their patients are protected against preventable disease and are appropriately vaccinated (Infectious Diseases Society of America, 2007).

Literature Review

The burden of influenza represents over \$10 billion in health care cost from a modest outbreak. Annual deaths have been reported between 33,000 and 49,000 and annual hospitalizations exceed 200,000 (Molinari et al., 2007). The elderly represent the population most affected by complications of influenza with the elderly accounting for 90% of influenza related deaths. The Centers for Disease Control and Prevention (CDC) recommends that all persons six months of age and older receive annual vaccinations to protect against morbidity and mortality associated with disease (Grohskopf et al., 2014). Cost should not be a barrier to the receipt of vaccine as Medicare, Medicaid and commercial insurance carriers reimburse for the cost of preventive vaccines (USDHHS, n.d.).

Community acquired pneumonia (CAP) is a serious problem and affects approximately 4 million Americans each year (Albrecht et al., 2014). Advanced age is associated with higher morbidity and mortality with case fatality rates approximately 5-7% higher (Gonzalez-Castillo et al., 2014). Pneumococcal disease manifests as pneumonia, bacteremia and meningitis. Those at risk are the very young, frail adults, and the elderly due to immune system deficiency making them more susceptible to infection. The principle pathogen found in pneumococcal disease is *Streptococcus pneumoniae* (*S Pneumonia*) which accounts for approximately 30-50% of CAP that requires hospitalizations (Garibaldi, 1985). Resistance to *S Pneumonia* is a cause for alarm, and

important reason for preventive measures such as vaccination against the disease. The mortality rate for patients with CAP is higher in the U.S. than all other vaccine preventable diseases. This gives significant cause for improvement of vaccination rates in the U.S. elderly (persons aged >65) as they are at greatest risk of developing pneumonia (Niederman et al., 2001).

Pneumococcal pneumonia is a vaccine preventable disease. Prevention of pneumonia through immunization represents a significant opportunity to reduce healthcare cost in the elderly (Butler & Schuchat, 1999). In 2004 direct medical costs regarding pneumococcal disease were found to be \$3.5 billion. The burden of pneumococcal pneumonia in the age group greater than 65 is substantial accounting for 83% of direct healthcare costs, with hospitalizations accounting for the majority of cost in the adult population (Huang, 2011). There is a high probability that the rate will continue to rise with population growth continuing to rise in this age group.

The Advisory Committee for Immunization Practices (ACIP) makes recommendations to the CDC on how to administer vaccinations to help reduce vaccine preventable diseases. The committee consists of individuals and public health officials. The ACIP takes factors such as co morbid disease when determining the immunization schedule for vaccine preventable disease as the risk of death and invasive disease differs among age group and other confounding factors (Centers for Disease Control and Prevention [CDC] 2011), (see Table 1). The ACIP committee meets twice annually to provide updates based on currently available vaccines and thorough review of evidenced based literature. Recommendations are based on age, health conditions, and other environmental factors. Healthcare providers have select recommendations based on the environment where they work. The ACIP recommends that all persons aged 6 months and older receive an annual influenza vaccination. Additional recommendations are provided on the type of influenza vaccination. In September of 2014 updated recommendations for pneumococcal

vaccinations were provided in the adult population aged ≥ 65 years or older. The update recommends that all persons in this age group receive two pneumococcal vaccinations. This includes a pneumococcal conjugate vaccine Prevnar 13 (PCV13), and a pneumococcal polysaccharide vaccine, Pneumovax (PPSV 23). A complete list of recommendations and dosing schedules is provided on the CDC website and is included in Appendix A.

Social Determinants

Several social determinants exist that drive or distract the population from immunization for pneumonia and influenza. Following is a review of several facilitating factors that are linked to pneumococcal and influenza vaccination rates. The population of interest is adults ≥ 65 years of age and the outcome of interest was pneumococcal and influenza vaccination per the ACIP guideline recommendations. Through a synthesis of peer-reviewed qualitative and quantitative studies these social determinants were organized into predisposing, enabling, and reinforcing factors, and each type is described below.

Table 1

*Centers for Disease Control and Prevention (CDC) Pneumococcal Vaccination
Recommendations for Persons with Specific Risk Factors*

-
- You have a serious long-term health problem such as heart disease, sickle cell disease, alcoholism, lung disease (not including asthma), diabetes, or liver cirrhosis
 - Your resistance to infection is lowered due to
 - HIV/AIDS
 - Lymphoma, leukemia, or other cancers
 - Cancer treatment with X-rays or medicines
 - Treatment with long-term steroid medicines
 - Bone marrow or organ transplant
 - Kidney failure or kidney syndrome
 - Damaged spleen or no spleen
 - You are an Alaskan Native or from certain Native American populations
-

NOTE: Information taken verbatim from the CDC Website,
<http://www.cdc.gov/abcs/reportsfindings/survreports/spneu09.pdf>

Predisposing factors.

Safety. The belief that vaccinations have consequences and can cause harm has a negative impact on vaccination uptake in the elderly population. The concern from a patient perspective includes fear about getting ill from the vaccine or pain associated with the injections. Other concerns may be due to heightened media attention about unsubstantiated claims of rare adverse events. The perceived consequence of getting vaccinated has a strong influence on vaccination status. In a survey conducted with 1,007 telephone respondents, researchers found that in the group that refused influenza vaccination, 38% reported a concern of getting ill from the vaccine was the primary concern of respondents surveyed (Zimmerman et al., 2003). The belief that vaccines can cause disease and have side effects was found to be a strong predictor for not getting vaccinated. Refusal of vaccine was noted due to safety concerns. It is important to increase education and awareness around safety and efficacy of vaccines to further protect the population from infectious diseases and dispel fears associated with vaccination.

Perception of good health. Perception of good health and lack of perceived risk to influenza or pneumonia leads to lower vaccination rates in the elderly. The perceived risk is an important consideration of the population when evaluating reasons against the receipt of recommended vaccines. There is a percentage of the senior population that has misconceptions about the seriousness of influenza. They perceive themselves to have low risk due to lack of preexisting health condition or utilization of healthcare services. This “healthy” population has shown lower uptake for pneumococcal and influenza vaccination. Colleagues in a cross sectional survey found that vaccination uptake in the elderly population was lower for those who perceived their own health to be good (Mangtani et al., 2006). In the population that elected not to get the influenza vaccine the most common reason was perception of good health and poor

perception of risk of exposure. This represents a specific educational opportunity about morbidity and mortality of pneumonia and influenza in the senior population.

Health literacy. Health Literacy has a negative influence on vaccination rates in the adult population. Health Literacy is defined as the ability for one to have the capacity to make informed decisions for preventative health (Baker et al., 2002). The disparity of health literacy is more prevalent among the elderly and minority population. Researchers evaluated the contribution of health literacy to disparities in health and preventative health services. Adult seniors who had attained less than a high school diploma were more likely to have poor health and not utilize preventive services such as getting policy recommended vaccinations (Scott, Gazmararian, Williams, & Baker, 2002). Racial and ethnic disparities were also associated with lower utilization of preventive health services such as immunizations.

Race and ethnicity. Race and ethnic background have a strong relationship with vaccination rates among the adult population. Immunization rates vary by race and ethnicity, with African American and Latinos reporting lower rates of participation. In the most recent National Health Interview Survey (NHIS), influenza vaccination rates for African Americans and Latino's were 10% and 11% lower, respectively, than in whites of similar ages (Centers for Disease Control and Prevention [CDC], 2014a). The survey also found that pneumococcal rates in the white population were 14 percentage points higher than African Americans. There are attitudinal and structural barriers that have been reported in the literature among persons of different race and ethnic backgrounds. Chen, Fox, Cantrell, Stockdale, and Kagawa-Singer (2007) studied determinants of influenza and pneumococcal vaccination rates among ethnic and racial faith-based populations. In their examination of vaccination rates between whites and non-whites they found perceived susceptibility and perceived severity influenced vaccination rates

differently among the populations studied. Perceived risk was the strongest predictor for getting needed vaccination in the White, African, Japanese, and Filipino American populations.

Perceived severity of influenza and income level was a positive predictor of getting vaccinated in the African American population compared to other populations studied. The study also found that that approximately 32% of the African American population cited mistrust about vaccination benefit and concern for getting influenza from the vaccine as the principle reason for not getting vaccinated. Barriers for the Latino population included lack of access to healthcare, cost, and other structural barriers as the reasons for not getting influenza vaccination.

Housing status. Housing status has a negative influence on vaccination rates in the elderly. Metcalfe and Sexton (2014) found that specifically the homeless population had several misperceptions about the flu vaccine. In a study of 87 homeless subjects in North Carolina authors reported several reasons why the homeless are less likely to receive recommended vaccinations. This included the concern about the need to vaccinate, the fear of receiving shots, the safety of the vaccine, and the side effects associated with getting vaccinated against flu. Other concerns were transportation, cost of vaccine and not knowing where to obtain the flu shot. Collaborative efforts between community agencies, shelters and public health can support intervention for the prevention of infectious disease. Dialogue directly with people who are homeless is an important consideration and could positively impact the community vaccination rates.

Unhealthy episodic drinking. Unhealthy episodic drinking patterns for older adults are a predictor for non-receipt of vaccinations. Episodic drinking in the senior population is defined as more than seven drinks in one week and more than three drinks daily. Unhealthy alcohol use leads to abuse and self-neglect and should be recognized by providers as a potential for neglect

of preventive services. Seniors who abuse alcohol are at higher risk for non-receipt of preventive health. Healthcare providers should pay attention to alcohol consumption and the potential for non-uptake of recommended preventive services (Merrick et al., 2008).

Facilitators for vaccination.

Perceived vaccination benefit. Perceived Vaccination Benefit has a positive influence on vaccination rates in the adult population ≥ 65 years of age. Benefits include better self-immunity towards infectious disease and the protection of the community through herd immunity. Lower healthcare costs and less potential loss of activity due to illness are also benefits that facilitate adults taking positive actions towards getting recommended vaccines. Santibanez and colleagues (2002) found that 80% of the respondents in a survey indicated that personal knowledge that the pneumonia vaccination would prevent future hospitalization or even death would influence their likelihood to get vaccinated.

Presence of chronic disease. The presence of chronic disease (CD) has a positive influence on vaccination rates. Examples of chronic diseases are diabetes, cardiovascular disease, chronic obstructive pulmonary disease (COPD), and cancer. There is medical management that can control chronic disease, however seldom is there a cure. Chronic diseases have high morbidity and mortality. Costs associated with chronic disease are significant to health care systems. The adult population with chronic diseases has more consistent contact with the health care community and exposure to services. Several authors reported adult vaccination rates among Italian residents with chronic health conditions (Chiatti, Perkins, Maharry, Jones, & McDonald, 2010). The presence of chronic disease was a strong predictor of vaccine uptake with vaccination rates of 70.7% (OR 2.0, $p < 0.01$) in persons with comorbid conditions, versus 47% of persons absent of chronic diseases. With the high cost of health care attributable to

chronic diseases and the risk of pneumonia associated with patients with comorbid conditions such as diabetes, cardiovascular and asthma, it is imperative that there is more focus on optimizing vaccination rates among this population. This data reflects a positive influence on vaccination rates.

Enabling factors.

Provider continuity. Continuity of care with primary care allows for an ongoing relationship with a specific provider and an opportunity to receive preventive care such as pneumococcal and influenza immunizations. Provider continuity has a positive effect on patient's response to vaccinations. Provider continuity reflects the use of a regular primary care provider in the outpatient setting. Doescher, Saver, Fiscella, and Franks (2004) found that the use of a consistent provider had a significant impact on immunization rates for influenza. The study population who had consistency of care with a provider was more likely to receive the influenza vaccine. There was a 6% increase in influenza immunization rates in this population which was significant. Trust in a primary care was cited as a possible reason for the positive impact on vaccination rates and the uses of other preventive services. Other studies have found that having a usual source of care with a primary care provider is a key variable in the acceptance of provider recommendations of preventive services (Blewett, Johnson, Lee, & Scal, 2008).

Veterans Administration (VA) care. Access to care through the VA is associated with higher pneumococcal and influenza vaccinations in the elderly. The VA is the largest health care system in the United States and provides care to over 2.5 million elderly veterans (Zimmerman et al., 2003). The VA provides access to care through clinics and hospitals, and has extensive use of computer generated standing orders that provide opportunities to assess and administer recommended vaccinations. Chi, Reiber, and Neuzil (2006) reported immunization results in

VA participants with age ≥ 65 from the 2003 Behavioral Risk Factor Surveillance System. The results found that target vaccination rates were below Healthy People 2010 goals; however they were statistically higher in the VA population. Influenza and pneumococcal vaccination rates were 74% (vs 68%) and 68% (vs 63%), respectively, and significance levels of $p < 0.001$ for both.

Health insurance status. Health insurance status is a positive predictor of the receipt of Influenza and pneumococcal vaccination in the elderly population. Insurance covers healthcare costs through the payment of expenditures in both the private and public sectors. Access to care through health insurance reduces the financial burden of having to pay for preventive care. The Accountable Care Act has reduced barriers to preventive care by providing more affordable access to insurance and the requirement of payment for preventative services by insurance carriers. Results from the National Health Interview Survey (NHIS) found that in the elderly population, persons with insurance were 30% more likely to receive influenza vaccination versus the uninsured population. A higher percentage (48%) reported confirmation of pneumococcal vaccination (Fox & Shaw, 2014). These results show that having health insurance increases the likelihood of accessing preventive care services and is an important consideration for both pneumonia and influenza vaccination rates in the elderly.

Income level. There is a direct relationship between income level and receipt of vaccination against pneumonia and influenza in the adult population. Household income plays a role in a person's ability to pay for food, housing, and other necessary daily expenditures. Vaccination rates correlate with the income level. The 2011-2012 NHIS questionnaire evaluated income level and vaccination rates for pneumonia and influenza. The survey found that persons with family income level $> 200\%$ of Federal Poverty Level (FPL) were significantly more likely to receive preventive services (Fox & Shaw, 2014). The 200% FPL for a family of two in 2013

was \$31,460. Income level greater than 200% of FPL had vaccination rates for pneumonia of 64.4% and influenza 42.8%. Persons who fell below 200% family FPL had rates of 56.2% for pneumococcal vaccination and 33.4% for influenza vaccination.

Lack of clear and reliable vaccination records. Unreliable vaccination records contribute to low vaccination rates in the adult population. These factors cause confusion in the providers practice and concern about the safety of duplicate immunizations. Concern about practice reimbursement of duplicate vaccine also adds to the lack of interest among medical groups to provide vaccinations at the time of medical visit (Johnson, Nichol, & Lipczynski, 2008). Several studies have suggested that the adult vaccination schedule is complicated for pneumonia and has caused a fragmented organization.

Competing demands of well care. Competing demands of well care govern the provider's ability to identify opportunities for vaccination. Providers during well care visits are asked to address acute care needs, screen for psychosocial issues, identify chronic diseases, and assess asymptomatic disease. Then they need time to discuss and implement medical management based on their findings. The assessment and medical management of a patient during the healthcare visit are a barrier towards time needed for administration of vaccines (Nowalk et al., 2009).

Provider recommendations. The recommendation by a provider has a strong correlation with higher vaccination rates in the adult population. Persons who have been told by their physicians about the need to be vaccinated against influenza and pneumonia are more likely to get recommended immunizations. Provider recommendations are one of the most often reported influence on vaccination rates in the elderly (Zimmerman et al., 2003). In a study looking at vaccination rates among three different populations, researchers analyzed what influenced

vaccination rates in the older population. The study looked at Veterans Affairs, Inner City and Rural populations. Researchers found that the population that had the highest vaccination rates had provider recommendations. More than one-third of the population that had not been vaccinated suggested that they had not been told to do so by their doctor. Many studies have found that provider recommendations have a direct effect on a person's intention to get vaccinated (Sengupta, Corbie-Smith, Thrasher, & Strauss, 2004; Nowalk et al., 2009; Nichol & Zimmerman, 2001).

Reinforcing factors.

Computerized standing orders. The use of computerized standing orders has a significant role in the administration of influenza and pneumococcal vaccinations for the adult hospitalized patient. Standing orders are based on evidence based recommendations and allow for a variety of healthcare workers to provide immunizations without a provider signature. Standing orders for vaccinations are determined and based on evidence based review of the effectiveness in improving vaccination rates and preventing disease. Standing orders are generated electronically in the hospital based computer system and implemented based on recommendations made from CDC and other organizations. Several colleagues found in a randomized control trial that 50% of hospitalized patients were eligible for influenza vaccination and 22% of patients were eligible for the pneumonia vaccine. The trial also found that standing orders in the hospital setting were more effective than physician reminders in the primary care setting. Results showed the comparison between groups was 56% of patients in the hospital setting and 34% were more likely to receive recommended vaccinations (Dexter, Perkins, Maharry, Jones, & McDonald, 2004). Thus, the use of computerized standing orders in the hospital setting is productive in improving vaccinations for a target population.

Patient reminders/recall. Reminders and recalls to patients is an effective means to increase pneumococcal and influenza vaccination rates. Examples of patient reminders are postcards, letters, or phone reminders that are used as tools to provoke the population to take action. These reminders can be targeted to a specific intervention such as immunization rates for pneumonia and influenza. In a systematic review of 47 randomized controlled trials, several authors reported that patient reminders and recall activities had a significant impact on pneumococcal vaccination rates in developed countries (Szilagyi et al., 2002). Pneumococcal immunizations were increased between 1.8 and 27.4 percentage points. Influenza immunization also showed significant increase from the use of patient reminders and recall. The range of increase was between 8.5 and 47.4 percentage points for the influenza vaccine. Reminders by telephone were shown to be the most influential.

Mass media campaigns. Mass media has the ability to target and influence large audiences in short amounts of time. Mass media campaigns can have positive influence on changing preventive health behaviors such as uptake of pneumococcal and influenza vaccination. The use of media can include newspaper print, billboards or television campaigns. Hindrance to mass media has been the pervasive targeting of competing marketers. Media campaigns have been successful in the past at targeting behaviors such as tobacco and cardiovascular health. Wakefield, Laken, and Honik (2010) in a review article reported on the indirect and direct influence that mass media can have on changing several health behaviors. Their conclusion was that mass media can be more influential in changing behavior that are one off or episodic such as immunizations for pneumonia and influenza (Wakefield, Laken, & Honik, 2010). They reported a 30% increase in flu vaccination between 2010 and 2011. This increase was noted based on the

results of a mass media campaign that was implemented in the fall of 2011. Mass media can have a positive influence on changing attitudes and influence the population on the need to act.

The Immunization Action Coalition (IAC). The IAC is a 501(C)3 non-profit organization that collaborates with the CDC to provide educational information to healthcare providers and the public about guideline recommended vaccinations (IAC, 2014). The coalition has a positive influence on immunization rates in the adult population. The IAC plays a supportive role in the provision of educational materials for both the public and private sector in several languages. The website for the IAC also provides information about vaccines, resources, personal testimonies and videos. Included on the website are real life stories about families that have been significantly affected by vaccine preventable diseases.

Staff receipt of influenza vaccination. The acceptance and receipt of vaccinations by hospital and providers staff can have a positive impact on patient's receipt of pneumococcal vaccination. The social behavior of the lead nurse in an office practice and attitude towards vaccination can influence behavior of the patients. Nowalk and colleagues assessed characteristics in primary care offices that lead to the improvement in vaccination rates (Nowalk et al., 2009). They surveyed 18 primary care offices and reviewed medical charts of the population ≥ 65 years. The authors concluded that a positive status of influenza receipt for the lead nurse predicted that patients in the practice were close to 4 times more likely to receive the pneumonia shot (OR 3.91, $p=0.009$). This supports vaccination of office staff to promote a positive influence on the patient's use of preventive services against preventable disease.

Program Design and Planning

In June 2014 Wright State University department of Family Medicine was awarded a grant to enhance community health training and improve influenza and pneumococcal vaccine

rates in patients age 65 and older during the 2014/2015 flu season (October 2014 through March 2015). The grant impacted senior patients in the Family Medicine & Internal Medicine clinic offices. In addition to affecting current patient population of clinic patients, the project targeted a much larger population of underserved minority seniors (largely African American) in the Dayton community. The goal of this research was to understand local barriers to the immunization of seniors in the community and identify strategies for overcoming those barriers. Effective outreach was established through program planning utilizing effective educational materials and campaigns. A power point presentation was delivered at all community events. Evaluation of educational campaign materials was provided through the answers given in a pre-test and post-test questionnaire.

The geographic area that defines the population is largely inner city, with some suburban communities. The area covers the northern part of the western part of Dayton (West Dayton). West Dayton is classified as a medically underserved area. Community demographics confirm this designation, with relatively few primary care physicians per population and average income in the zip code areas well below the poverty level (Geary et al., 2014). The communities were defined by five zip code areas that surround Five Rivers Health Center (45402, 45405, 45406, 45416, and 45417). Five Rivers is a federally qualified health center (FQHC). Demographic data on seniors in the community include approximately 39% male, 62% female, 63% African American, 34% Caucasian, 2.5% Hispanic, and 2.0% other. The average annual income was \$10,934. The assumption is that the senior populations earns less that that per year and is dependent on social security and other government or local programs.

A pilot project conducted by Wright Sate Family Medicine with a convenience sample of clinic patients in the population demonstrated that frequently seniors in the population are

uninsured in the years prior to qualifying for Medicare and therefor have poor health care.

Several health disparities define the medically underserved populations due to underutilization of the health care system, particularly in the African American community (Kennedy, Mathis, & Woods, 2006). Barriers to accessing health care include distrust of the system and lack of knowledge about available resources. This disparity has been well-documented in the Dayton communities through research done by the Wright State University, Center for Global Health (Paton, Ellison, & Rogers, 2013).

Results

The committee participated in 10 community gatherings (see Table 2). This included presentations to five faith based groups and one senior community center of which 85% of the population was of African American descent. These venues provided an opportunity for the committee to provide education, pre and post surveys, and time for questions and answers. Five presentations were made to community partners such as Dayton Metro Library, Good Samaritan Health Ministries, and The Community Action Partnership, who have direct contact with many seniors in the area. These presentations established collaboration with community partners that have direct interaction and contact with the senior population in the targeted zip codes. Dayton Metro Library is an essential resource for the community and critical resource center for the regional seniors. The Good Samaritan Health Ministries includes nurses who serve as ministers to assist individuals and groups in their health needs. Health ministers provide health education to 42 partnering faith communities in greater Dayton. The Community Action Partnership promotes self-sufficiency among seniors in the counties affiliated with the project. Total outreach was estimated to reach more than 1000 seniors in the community. This number is based on postcards delivered, pre- and post-surveys collected and presentations delivered.

Table 2

Selected Venues of Community Participation

Mt Calgary Baptist Church Silver Saints *
Summit Christian Church*
Summit Christian Church Women's fellowship*
Church Women's United*
Community Action Partnership
Public Health - Dayton & Montgomery County
Westtown Health Fair
Dayton Metro Library
Good Samaritan Health Ministries

Note. *Centers where pre and post surveys were distributed and collected.

Questionnaires were distributed to 202 participants during community gatherings. More than 80% of respondents were seniors greater than 65 years of age. The results indicate our success in targeting our select population. Response to the survey questions are shown in Table 3.

Table 3

Pre- and Post-Survey Questionnaire

Question	Pre-tests (n=103)	Post-tests (n=99)
	n correct (%)	n correct (%)
The flu shot is recommended for everyone	86 (84%)	93 (94%) ^a
Everyone 65 years and older needs a pneumonia shot	78 (76%)	96 (97%) ^b
As you get older your immune system is just as strong as it is when you are younger. Shots are not important.	13 (13%)	15 (15%)
I should ask my doctor about the vaccines I need	101 (98%)	98 (99%)

^a p = 0.025 compared to pre-test result.

^b p < 0.0001 compared to pre-test result.

Note. Statistix 10.0 Analysis run 4/13/2015. Analytical Software, Tallahassee, FL

Discussion

The study found statistical significance for our objectives set showing positive influence from community presentations. Outreach was established to more than 1,000 individuals through direct mailings, flyers, and oral presentations. Presentations were made at ten community events, where more than 80% of the participants were ≥ 65 years of age, indicating success in targeting our select population. Feedback about the presentations was positive. While responses to general knowledge questions remained constant on pre and post questionnaires, there was statistically significant improvement in correct answers to questions dealing with adult vaccination. In addition, the majority of the participants who were unvaccinated signed pledge cards agreeing to obtain appropriate vaccinations following participation in the community outreach presentation. The strategies to improve awareness of the importance of influenza and pneumococcal vaccination in the community were successful. Direct contact between physician providers and seniors in the community was well received and provided a venue for productive discussion and interaction in a neutral setting.

The committee on the community side of the project consisted of four resident family practice physicians, one attending physician, one public health student and one medical student affiliated with the partnering institution.

During the planning stages, the committee formatted several tools to support our educational efforts during community interactions. The team developed an educational power point presentation that was health literate for our target audience and also targeted theoretical cognitive constructs found in the Health Belief Model (HBM). The HBM suggests that several theoretical constructs exist that predict embracement in health related behaviors such as vaccination. Education around specific learning objectives associated with the constructs may

increase knowledge and influence behavioral change. The cognitive constructs found in the HBM include individual perceptions of the perceived susceptibility and seriousness of disease, perceived benefit, perceived benefit minus perceived barriers, and cues to act (Rosenstock, Strecher, & Becker, 1988). Age, race, ethnicity and social factors were also taken into consideration in the development of the presentation. The goal was to influence the likelihood of engaging in life promotion behavior through vaccination against pneumonia and influenza. The objective of the presentation was also to build confidence in the population's ability to effect change in outcome of their community's infectious rates. Examples of targeted objectives that were affiliated with the constructs are found in Table 4. The perceived susceptibility of disease and the likelihood of more complications from influenza and pneumonia with increased age can be a cue to act upon needed vaccination. The threat of hospitalizations and cost associated with pneumonia can also influence the behavior for vaccination. A brochure was developed with health literacy in mind that could be left behind or placed in community centers (Appendix C). The brochure reinforced statements made during the educational presentation. Thank you gifts and pledge cards were also designed and developed to incentivize community members to get vaccinated. Postcards were mailed to over 600 persons in the community as a reminder to visit their healthcare provider and get up to date on needed vaccination for Pneumonia and Influenza.

Table 4

Learning Objectives Used to Change Vaccination Perception and Practices Among Participants

Theoretical Constructs	Learning Objectives
Perceived Susceptibility	<ul style="list-style-type: none"> • Threat of severity and complications from influenza and pneumonia with increased age • Seriousness of infection with compromised immune system with heart, lung or kidney disease
Perceived Severity	<ul style="list-style-type: none"> • 200,000 people hospitalized with the flu annually • 1.2 million people hospitalized with pneumonia annually or 40/10000 • 50,000-60,000 people die each year from pneumonia in the US • Seriousness of bloodstream and meningeal infection caused by pneumococcus bacteria
Perceived Benefit – Perceived Barriers	<ul style="list-style-type: none"> • Ease and availability of vaccines through pharmacies and FQHC. • Coverage through private/public insurers • Preventive care benefit for eligible seniors as part of the patient protection and affordability act of 2010 • Concern of Vaccine Safety addressed
Cues to Act	<ul style="list-style-type: none"> • Protection of loved ones through herd immunity
Self-Efficacy	

Note: Theoretical Constructs taken from the HBM.

Limitations of our study were low numbers of community dwelling seniors at our events and the ability to provide vaccines during our presentations. The effectiveness of our intervention may have been better assessed if we provided vaccination during community presentations; however, the responses on pledge cards were encouraging. There were low numbers of community dwelling seniors at our events. An absolute measure of effect could have been seen comparing the number of seniors who had not received recommended vaccines to those who would choose to receive vaccine had vaccines been provided at the venue. However in consideration of our strong results especially for questions related to seniors getting pneumonia the group felt positive influence was made.

Conclusion and Recommendations

Direct contact between physician providers and seniors in the community was well received and provided a venue for productive discussion and interaction. The proactive engagement of the physicians from our team led to informative dialogue in a neutral setting. Efficacy, safety, and importance of pneumonia and influenza vaccination for senior's ≥ 65 years old need to continue to be given heightened attention and dialogue. Further interventions are needed to increase awareness and vaccinations among non-institutionalized adults age ≥ 65 to achieve healthy people 2020 immunization targets. The ACA has recently decreased economic barriers to vaccinations which should limit financial concerns about affordability for the population.

Our outcome was successful in that we saw a change in community knowledge about influenza and pneumococcal vaccinations for the senior population. We also changed the community's perception of vaccine safety and efficacy. Positive relationships with community organizations have been established and will provide further opportunities for collaboration with family practice residents, public health students to educate and improve the health of the community.

References

- Albrecht, P., Antczak, A., Hryniewicz, W., Skoczyńska, A., Radzikowski, A., Kedziora-Kornatowska, K., & Windak, A. (2014). [Recommendations for prevention of community-acquired pneumonia with bacteremia as the leading form of invasive pneumococcal infections in the population of people over 50 years of age and risk groups above 19 years of age]. *Polski merkuriusz lekarski*, *36*(212), 79-87.
- Baker, D. W., Gazmararian, J. A., Williams, M. V., Scott, T., Parker, R. M., Green, D., ... & Peel, J. (2002). Functional health literacy and the risk of hospital admission among Medicare managed care enrollees. *American Journal of Public Health*, *92*(8), 1278-1283.
- Blewett, L. A., Johnson, P. J., Lee, B., & Scal, P. B. (2008). When a usual source of care and usual provider matter: adult prevention and screening services. *Journal of General Internal Medicine*, *23*(9), 1354-1360.
- Butler, J. C., & Schuchat, A. (1999). Epidemiology of pneumococcal infections in the elderly. *Drugs & Aging*, *15*(Suppl 1), 11-19.
- Calverley, P. M., Stockley, R. A., Seemungal, T. A., Hagan, G., Willits, L. R., Riley, J. H., & Wedzicha, J. A. (2011). Reported pneumonia in patients with COPD: findings from the INSPIRE study. *CHEST Journal*, *139*(3), 505-512.
- Centers for Disease Control and Prevention (CDC). (2013a). Noninfluenza vaccination coverage among adults – United States, 2011. *Morbidity and Mortality Weekly Report*, *62*(4), 66-72. doi:mm6204a2 [pii]
- Centers for Disease Control and Prevention (CDC). (2013b). Vaccination coverage among persons with asthma – United States, 2010-2011 influenza season. *Morbidity and Mortality Weekly Report*, *62*(48), 973-978. doi:mm6248a1 [pii]

- Chen, J. Y., Fox, S. A., Cantrell, C. H., Stockdale, S. E., & Kagawa-Singer, M. (2007). Health disparities and prevention: racial/ethnic barriers to flu vaccinations. *Journal of Community Health, 32*(1), 5-20.
- Chi, R. C., Reiber, G. E., & Neuzil, K. M. (2006). Influenza and pneumococcal vaccination in older veterans: results from the behavioral risk factor surveillance system. *Journal of the American Geriatrics Society, 54*(2), 217-223.
- Chiatti, C., Di Rosa, M., Barbadoro, P., Lamura, G., Di Stanislao, F., & Prospero, E. (2010). Socioeconomic determinants of influenza vaccination among older adults in Italy. *Preventive Medicine, 51*(3), 332-333.
- Dexter, P. R., Perkins, S. M., Maharry, K. S., Jones, K., & McDonald, C. J. (2004). Inpatient computer-based standing orders vs physician reminders to increase influenza and pneumococcal vaccination rates: a randomized trial. *Journal of the American Medical Association, 292*(19), 2366-2371.
- Doescher, M. P., Saver, B. G., Fiscella, K., & Franks, P. (2004). Preventive care. *Journal of General Internal Medicine, 19*(6), 632-637.
- Fox, J. B., & Shaw, F. E. (2014). Relationship of income and health care coverage to receipt of recommended clinical preventive services by adults-United States, 2011-2012. *Morbidity and Mortality Weekly Report, 63*(31), 666-670.
- Garibaldi, R. A. (1985). Epidemiology of community-acquired respiratory tract infections in adults: incidence, etiology, and impact. *The American Journal of Medicine, 78*(6), 32-37.
- Geary, M. K., McGeady, L., Dunn, L., Pennick, L., Johnson, M., & Stolfi, A. (2014). The demographics of the United States haemophilia treatment centre social workers: the results of a national survey. *Haemophilia, 20*(4), 500-505.

- Gonzalez-Castillo, J., Martin-Sanchez, F. J., Llinares, P., Menendez, R., Mujal, A., Navas, E., & Barberan, J. (2014). Guidelines for the management of community-acquired pneumonia in the elderly patient. *Revista Espanola De Quimioterapia*, *27*(1), 69-86.
- Grohskopf, L. A., Olsen, S. J., Sokolow, L. Z., Bresee, J. S., Cox, N. J., Broder, K. R., & Walter, E. B. (2014). Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP)—United States, 2014–15 influenza season. *Morbidity and Mortality Weekly Report*, *63*(32), 691-697.
- Huang, S. S., Johnson, K. M., Ray, G. T., Wroe, P., Lieu, T. A., Moore, M. R., & Finkelstein, J. A. (2011). Healthcare utilization and cost of pneumococcal disease in the United States. *Vaccine*, *29*(18), 3398-3412.
- Infectious Diseases Society of America. (2007). Executive summary—actions to strengthen adult and adolescent immunization coverage in the United States: policy principles of the Infectious Diseases Society of America. *Clinical Infectious Diseases*, *44*(12), 1529-1531.
- Immunization Action Coalition (IAC). (2014). About vaccineinformation.com. Retrieved May 26, 2015 from <http://www.vaccineinformation.org/aboutus/>
- Johnson, D. R., Nichol, K. L., & Lipczynski, K. (2008). Barriers to adult immunization. *The American Journal of Medicine*, *121*(7), S28-S35.
- Kennedy, B. R., Mathis, C. C., & Woods, A. K. (2006). African Americans and their distrust of the health care system: healthcare for diverse populations. *Journal of Cultural Diversity*, *14*(2), 56-60.

- Merrick, E. L., Hodgkin, D., Garnick, D. W., Horgan, C. M., Panas, L., Ryan, M., & Blow, F. C. (2008). Unhealthy drinking patterns and receipt of preventive medical services by older adults. *Journal of General Internal Medicine, 23*(11), 1741-1748.
- Metcalfe, S. E., & Sexton, E. H. (2014). An Academic-Community Partnership to Address the Flu Vaccination Rates of the Homeless. *Public Health Nursing, 31*(2), 175-182.
- Mangtani, P., Breeze, E., Stirling, S., Hanciles, S., Kovats, S., & Fletcher, A. (2006). Cross-sectional survey of older peoples' views related to influenza vaccine uptake. *BMC Public Health, 6*(1), 249.
- Molinari, N. A. M., Ortega-Sanchez, I. R., Messonnier, M. L., Thompson, W. W., Wortley, P. M., Weintraub, E., & Bridges, C. B. (2007). The annual impact of seasonal influenza in the US: measuring disease burden and costs. *Vaccine, 25*(27), 5086-5096.
- Nichol, K. L., & Zimmerman, R. (2001). Generalist and subspecialist physicians' knowledge, attitudes, and practices regarding influenza and pneumococcal vaccinations for elderly and other high-risk patients: a nationwide survey. *Archives of Internal Medicine, 161*(22), 2702-2708.
- Niederman, M. S., Mandell, L. A., Anzueto, A., Bass, J. B., Broughton, W. A., Campbell, G. D., & Yu, V. L. (2001). Guidelines for the management of adults with community-acquired pneumonia: diagnosis, assessment of severity, antimicrobial therapy, and prevention. *American Journal of Respiratory and Critical Care Medicine, 163*(7), 1730-1754.
- Nowalk, M. P., Tabbarah, M., Hart, J. A., Fox, D. E., Raymund, M., Wilson, S. A., & Zimmerman, R. K. (2009). Office manager and nurse perspectives on facilitators of adult immunization. *The American Journal of Managed Care, 15*(10), 755-760.

- Paton, S. J., Ellison, S. A., & Rogers, N. L. (2013). *Health Disparities Report*. Retrieved May 26, 2015 from <http://corescholar.libraries.wright.edu/comhth/2>
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. *Health Education & Behavior, 15*(2), 175-183.
- Santibanez, T. A., Nowalk, M. P., Zimmerman, R. K., Jewell, I. K., Bardella, I. J., Wilson, S. A., & Terry, M. A. (2002). Knowledge and beliefs about influenza, pneumococcal disease, and immunizations among older people. *Journal of the American Geriatrics Society, 50*(10), 1711-1716.
- Sengupta, S., Corbie-Smith, G., Thrasher, A., & Strauss, R. P. (2004). African-American elders' perceptions of the influenza vaccine in Durham, North Carolina. *North Carolina Medical Journal, 65*(4), 194-199.
- Scott, T. L., Gazmararian, J. A., Williams, M. V., & Baker, D. W. (2002). Health literacy and preventive health care use among Medicare enrollees in a managed care organization. *Medical Care, 40*(5), 395-404.
- Szilagyi, P., Vann, J., Bordley, C., Chelminski, A., Kraus, R., Margolis, P., & Rodewald, L. (2002). Interventions aimed at improving immunization rates. *The Cochrane Database of Systematic Reviews, 4*(CD003941). doi:10.1002/14651858.CD003941
- Wakefield, M. A., Loken, B., & Hornik, R. C. (2010). Use of mass media campaigns to change health behavior. *The Lancet, 376*(9748), 1261-1271.
- United States Census Bureau. (2014). 2014 United States Census Bureau. Retrieved November 21, 2014 from <http://www.census.gov/compendia/statab/overview.html>

United States Department of Health & Human Services (USDHHS). (n.d.) CMS Manual System.

Pub 100-102. Medicare Benefit Policy. Transmittal 202. Retrieved May 15, 2015 from

<http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/index.html>

United States Department of Health and Human Services (USDHHS). (2015). Office of Disease

Prevention and Health Promotion. Healthy People 2020. Immunization and infectious

diseases. Retrieved May 21, 2015 from <http://www.healthypeople.gov/2020/topics->

[objectives/topic/immunization-and-infectious-diseases](http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases)

Zimmerman, R. K., Santibanez, T. A., Janosky, J. E., Fine, M. J., Raymund, M., Wilson, S. A.,

& Nowalk, M. P. (2003). What affects influenza vaccination rates among older patients?

An analysis from inner-city, suburban, rural, and Veterans Affairs practices. *The*

American Journal of Medicine, 114(1), 31-38.

Appendix A - Recommended Adult Immunization Schedule

Recommended Adult Immunization Schedule—United States - 2015

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

Figure 1. Recommended adult immunization schedule, by vaccine and age group¹

VACCINE ▼	AGE GROUP ▶	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	≥ 65 years
Influenza ²		1 dose annually					
Tetanus, diphtheria, pertussis (Td/Tdap) ²		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs					
Varicella ²		2 doses					
Human papillomavirus (HPV) Female ²		3 doses					
Human papillomavirus (HPV) Male ²		3 doses					
Zoster ⁴		1 dose					
Measles, mumps, rubella (MMR) ²		1 or 2 doses					
Pneumococcal 13-valent conjugate (PCV13) ²		1-time dose					
Pneumococcal polysaccharide (PPSV23) ²		1 or 2 doses					
Meningococcal ²		1 or more doses					
Hepatitis A ²		2 doses					
Hepatitis B ²		3 doses					
Haemophilus influenzae type b (Hib) ^{2,3}		1 or 3 doses					

¹Covered by the Vaccine Injury Compensation Program

- For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; zoster vaccine recommended regardless of prior episode of zoster
- Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)
- No recommendation

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at www.vaers.hhs.gov or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400.

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 8:00 a.m. - 8:00 p.m. Eastern Time, Monday - Friday, excluding holidays.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

The recommendations in this schedule were approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), American College of Obstetricians and Gynecologists (ACOG) and American College of Nurse-Midwives (ACNM).

Figure 2. Vaccines that might be indicated for adults based on medical and other indications¹

VACCINE ▼	INDICATION ▶	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus (HIV)) ^{2,3,4,5,6,7}	HIV infection CD4+ T lymphocyte count ^{4,5,6,7}	Men who have sex with men (MSM) ^{4,5,6,7}	Kidney failure, end-stage renal disease, receipt of hemodialysis	Heart disease, chronic lung disease, chronic alcoholism	Aplenia (including elective splenectomy and persistent complement component deficiencies) ^{4,5,6,7}	Chronic liver disease	Diabetes	Healthcare personnel
			<200 cells/µL	≥200 cells/µL	1 dose IV or IM annually	1 dose IV or IM annually	1 dose IV or IM annually	1 dose IV or IM annually			
Influenza ²			1 dose IV annually								1 dose IV or IM annually
Tetanus, diphtheria, pertussis (Td/Tdap) ²		1-time Tdap only	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs								
Varicella ²		Contraindicated	2 doses								
Human papillomavirus (HPV) Female ²			3 doses through age 26 yrs								3 doses through age 26 yrs
Human papillomavirus (HPV) Male ²			3 doses through age 26 yrs								3 doses through age 21 yrs
Zoster ⁴		Contraindicated	1 dose								
Measles, mumps, rubella (MMR) ²		Contraindicated	1 or 2 doses								
Pneumococcal 13-valent conjugate (PCV13) ²			1 dose								
Pneumococcal polysaccharide (PPSV23) ²			1 or 2 doses								
Meningococcal ²			1 or more doses								
Hepatitis A ²			2 doses								
Hepatitis B ²			3 doses								
Haemophilus influenzae type b (Hib) ^{2,3}		post-BST recipients only	1 or 3 doses								

¹Covered by the Vaccine Injury Compensation Program

- For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection; zoster vaccine recommended regardless of prior episode of zoster
- Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)
- No recommendation



These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly recommended for adults ages 19 years and older, as of February 1, 2015. For all vaccines being recommended on the Adult Immunization Schedule a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturer package inserts and the complete statements from the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip/wr/). Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

Appendix B – Grant Proposal

IV. DESCRIPTION OF PROPOSED PROJECT

TITLE

Sustainable Improvements in Immunization Rates for Seniors: A Local and Community-wide Effort

IMPACT ON RESIDENTS

Describe number of residents that will participate and how the project will benefit the residents?

The Wright State University Family Medicine (FM) Residency has thirty residents and is located in a medically underserved inner city neighborhood that is predominantly African American. The residency's clinical office, Five Rivers Health Centers Family Health Center (FRHC-F), is part of a Federally Qualified Health Center which has several clinical sites, including our family medicine residency's clinical office and an internal medicine residency's clinical offices. All the clinical sites share the same electronic medical record, EPIC, which is also used by many local hospitals and practices in a large network called the Premier Health network. This project will be implemented by the family medicine residency, but will benefit senior patients in the internal medicine offices as well, and potentially many primary care practices in the Premier Health network.

Five FM residents have developed and will lead this project. Two additional FM residents will be involved in implementation. The other 23 FM residents will assist with community outreach efforts. All 30 FM residents will learn about process improvement as they participate in developing and assessing workflow changes implemented to achieve the goals of the project. All FM residents will benefit from the improved immunization alerts in the office EMR which will be developed during the project. Because of the shared EMR, Internal Medicine residents (104) will benefit as well, as may other primary care practices within the Premier Health network.

TARGET GROUP

Define target group for this grant award and the number of patients age 65 and older that will be impacted.

This program will directly impact our senior patients in the FM clinical offices, seniors at the Internal Medicine residency clinical offices, and seniors in the broader community.

Currently 682 seniors are patients at our family medicine residency's clinical office (FRHC-F). We expect to see the largest increase in percentage of additional vaccinations among the members of this group through improved immunization alerts and changes in office workflows described below. This population is 2/3 African American and predominantly Medicaid/Medicare patients. Successful intervention with this population will have an impact on health disparities in immunization rates, which can then be replicated with other underserved populations. Additionally, because the improved immunization alerts will be implemented in the EPIC EMR, which is used throughout the Dayton area by several hundred physicians in the Premier Health network, many other patient populations will benefit from this project. For example, although not a target population, the improved immunization alerts will benefit the children and teens served by our FM clinical office.

In addition to the current patient population of the FM residency clinic, through the community outreach component of the project, the target population also includes the much larger population of underserved minority seniors (largely African American) in the Dayton community (approximately 9000 in our immediate communities, many of whom are potential patients of the FM clinical office).


Appendix C: IRB Determination Letter



Office of Research and Sponsored Programs
201J University Hall
3640 Col. Glenn Hwy.
Dayton, OH 45435-0001
(937) 775-2425
(937) 775-3781 (FAX)
e-mail: rsp@wright.edu

DATE: October 01, 2014

TO: Lisa Collier Kellar, M.D., Faculty
Family Medicine

FROM: Julie Carstens, M.P.A. 
Director of Compliance, IRB-WSU

SUBJECT: SC# 5642
'Sustainable Improvements in Immunization Rates for Seniors: A community Effort'

Your study does not meet the definitions for human subjects research. Therefore the proposal submitted does not need approval from the Wright State University Institutional Review Board.

If you have any questions or require additional information, please call Jodi Blackledge, Program Facilitator at 775-3974.

Thank you!

Appendix D - Program Written Materials

Are you up to date?
Adults need vaccines too.

Don't wait. Vaccinate.

Vaccines are safe and effective

- Getting vaccinated is a safer choice than risking serious illness or hospitalization due to illness.
- The flu and pneumonia vaccines are safe, do not cause the flu or pneumonia, and can protect you and the ones you love.

AMERICAN ACADEMY OF FAMILY PHYSICIANS FOUNDATION

School of Medicine WRIGHT STATE UNIVERSITY

Five Rivers Health Centers
937.754.4141

If you are 65 or older... you need your shots too!

When you are protected, you protect yourself, your loved ones, and everyone around you.

Two important shots for older adults:

Pneumonia

- All adults 65 and older

Certain chronic conditions, such as asthma, COPD, diabetes, and heart disease may place adults 50 years of age and older at greater risk for pneumonia—CDC

Flu

- Yearly. Everyone six months of age and older.

The first and most important step in protecting against getting sick from the flu is annual flu vaccination.

Adults 65 years and older are at high risk—CDC

You may need other vaccines; ask your doctor.

Most vaccines for adults are paid for

By Medicare, Medicaid, and other insurance plans. Montgomery County Health Department can provide some low cost or no cost vaccines.

Get your shots at:

- Doctor offices
- Local pharmacies
- Montgomery County health department

VACCINES ARE LIKE FENCES. FENCES KEEP YOUR NEIGHBOR'S PETS OUT OF YOUR YARD AND YOURS OUT OF THEIRS.

Appendix E – List of Competencies Met in CE

Tier 1 Core Public Health Competencies Checklist

Domain #1: Analytic/Assessment Skills
Describes factors affecting the health of a community (e.g., equity, income, education, environment)
Identifies quantitative and qualitative data and information (e.g., vital statistics, electronic health records, transportation patterns, unemployment rates, community input, health equity impact assessments) that can be used for assessing the health of a community
Applies ethical principles in accessing, collecting, analyzing, using, maintaining, and disseminating data and information
Uses information technology in accessing, collecting, analyzing, using, maintaining, and disseminating data and information
Selects valid and reliable data
Selects comparable data (e.g., data being age-adjusted to the same year, data variables across datasets having similar definitions)
Identifies gaps in data
Collects valid and reliable quantitative and qualitative data
Describes public health applications of quantitative and qualitative data
Uses quantitative and qualitative data
Describes assets and resources that can be used for improving the health of a community (e.g., Boys & Girls Clubs, public libraries, hospitals, faith-based organizations, academic institutions, federal grants, fellowship programs)
Contributes to assessments of community health status and factors influencing health in a community (e.g., quality, availability, accessibility, and use of health services; access to affordable housing)
Explains how community health assessments use information about health status, factors influencing health, and assets and resources
Describes how evidence (e.g., data, findings reported in peer-reviewed literature) is used in decision making
Domain #2: Policy Development/Program Planning Skills
Contributes to state/Tribal/community health improvement planning (e.g., providing data to supplement community health assessments, communicating observations from work in the field)
Contributes to development of program goals and objectives
Describes organizational strategic plan (e.g., includes measurable objectives and targets; relationship to community health improvement plan, workforce development plan, quality improvement plan, and other plans)
Contributes to implementation of organizational strategic plan
Identifies current trends (e.g., health, fiscal, social, political, environmental) affecting the health of a community
Gathers information that can inform options for policies, programs, and services (e.g., secondhand smoking policies, data use policies, HR policies, immunization programs, food safety programs)
Describes implications of policies, programs, and services
Implements policies programs, and services
Explains the importance of evaluations for improving policies, programs, and services
Gathers information for evaluating policies, programs, and services (e.g., outputs, outcomes, processes, procedures, return on investment)
Applies strategies for continuous quality improvement
Describes how public health informatics is used in developing, implementing, evaluating, and improving policies, programs, and services (e.g., integrated data systems, electronic reporting, knowledge management systems, geographic information systems)
Domain #3: Communication Skills
Identifies the literacy of populations served (e.g., ability to obtain, interpret, and use health and other information; social media literacy)
Communicates in writing and orally with linguistic and cultural proficiency (e.g., using age-appropriate materials, incorporating images)
Solicits input from individuals and organizations (e.g., chambers of commerce, religious organizations, schools, social service organizations, hospitals, government, community-based organizations, various populations served) for improving the health of a community
Suggests approaches for disseminating public health data and information (e.g., social media, newspapers, newsletters, journals, town hall meetings, libraries, neighborhood gatherings)
Conveys data and information to professionals and the public using a variety of approaches (e.g., reports, presentations, email, letters)

Domain #3: Communication Skills (continued)
Communicates information to influence behavior and improve health (e.g., uses social marketing methods, considers behavioral theories such as the Health Belief Model or Stages of Change Model)
Facilitates communication among individuals, groups, and organizations
Describes the roles of governmental public health, health care, and other partners in improving the health of a community
Domain #4: Cultural Competency Skills
Describes the concept of diversity as it applies to individuals and populations (e.g., language, culture, values, socioeconomic status, geography, education, race, gender, age, ethnicity, sexual orientation, profession, religious affiliation, mental and physical abilities, historical experiences)
Describes the diversity of individuals and populations in a community
Describes the ways diversity may influence policies, programs, services, and the health of a community
Recognizes the contribution of diverse perspectives in developing, implementing, and evaluating policies, programs, and services that affect the health of a community
Addresses the diversity of individuals and populations when implementing policies, programs, and services that affect the health of a community
Describes the effects of policies, programs, and services on different populations in a community
Describes the value of a diverse public health workforce
Domain #5: Community Dimensions of Practice Skills
Describes the programs and services provided by governmental and non-governmental organizations to improve the health of a community
Recognizes relationships that are affecting health in a community (e.g., relationships among health departments, hospitals, community health centers, primary care providers, schools, community-based organizations, and other types of organizations)
Suggests relationships that may be needed to improve health in a community
Supports relationships that improve health in a community
Collaborates with community partners to improve health in a community (e.g., participates in committees, shares data and information, connects people to resources)
Engages community members (e.g., focus groups, talking circles, formal meetings, key informant interviews) to improve health in a community
Provides input for developing, implementing, evaluating, and improving policies, programs, and services
Uses assets and resources (e.g., Boys & Girls Clubs, public libraries, hospitals, faith-based organizations, academic institutions, federal grants, fellowship programs) to improve health in a community
Informs the public about policies, programs, and resources that improve health in a community
Describes the importance of community-based participatory research
Domain #6: Public Health Sciences Skills
Identifies prominent events in the history of public health (e.g., smallpox eradication, development of vaccinations, infectious disease control, safe drinking water, emphasis on hygiene and hand washing, access to health care for people with disabilities)
Describes how public health sciences (e.g., biostatistics, epidemiology, environmental health sciences, health services administration, social and behavioral sciences, and public health informatics) are used in the delivery of the 10 Essential Public Health Services
Retrieves evidence (e.g., research findings, case reports, community surveys) from print and electronic sources (e.g., PubMed, Journal of Public Health Management and Practice, Morbidity and Mortality Weekly Report, The World Health Report) to support decision making
Recognizes limitations of evidence (e.g., validity, reliability, sample size, bias, generalizability)
Describes evidence used in developing, implementing, evaluating, and improving policies, programs, and services
Contributes to the public health evidence base (e.g., participating in Public Health Practice-Based Research Networks, community-based participatory research, and academic health departments; authoring articles; making data available to researchers)
Suggests partnerships that may increase use of evidence in public health practice (e.g., between practice and academic organizations, with health sciences libraries)
Domain #7: Financial Planning and Management Skills
Describes government agencies with authority to impact the health of a community
Adheres to organizational policies and procedures
Describes public health funding mechanisms (e.g., categorical grants, fees, third-party reimbursement, tobacco taxes)
Contributes to development of program budgets
Provides information for proposals for funding (e.g., foundations, government agencies, corporations)

Domain #7: Financial Planning and Management Skills (continued)
Operates programs within budget
Describes how teams help achieve program and organizational goals (e.g., the value of different disciplines, sectors, skills, experiences, and perspectives; scope of work and timeline)
Motivates colleagues for the purpose of achieving program and organizational goals (e.g., participating in teams, encouraging sharing of ideas, respecting different points of view)
Uses evaluation results to improve program and organizational performance
Describes program performance standards and measures
Uses performance management systems for program and organizational improvement (e.g., achieving performance objectives and targets, increasing efficiency, refining processes, meeting Healthy People objectives, sustaining accreditation)
Domain #8: Leadership and Systems Thinking Skills
Incorporates ethical standards of practice (e.g., Public Health Code of Ethics) into all interactions with individuals, organizations, and communities
Describes public health as part of a larger inter-related system of organizations that influence the health of populations at local, national, and global levels
Describes the ways public health, health care, and other organizations can work together or individually to impact the health of a community
Contributes to development of a vision for a healthy community (e.g., emphasis on prevention, health equity for all, excellence and innovation)
Identifies internal and external facilitators and barriers that may affect the delivery of the 10 Essential Public Health Services (e.g., using root cause analysis and other quality improvement methods and tools, problem solving)
Describes needs for professional development (e.g., training, mentoring, peer advising, coaching)
Participates in professional development opportunities
Describes the impact of changes (e.g., social, political, economic, scientific) on organizational practices
Describes ways to improve individual and program performance

Concentration Specific Competencies Checklist

Public Health Management
Have a knowledge of strategy and management principles related to public health and health care settings
Be capable of applying communication and group dynamic strategies to individual and group interaction
Know effective communication strategies used by health service organizations
Have an understanding of organizational theory and how it can be utilized to enhance organizational effectiveness
Have a knowledge of leadership principles
Know change management principles
Have a knowledge of successful program implementation principles
Have a knowledge of strategies used for monitoring, evaluating, and continuously improving program performance
Be capable of applying decision-making processes
Have a knowledge of systems thinking principles
Have an awareness of strategies for working with stakeholders to determine common and key values to achieve organizational and community goals
Have a knowledge of human resource principles to enhance organizational management, motivate personnel and resolve conflict
Know strategies for promoting teamwork for enhanced efficiency
Have an understanding of effective mentoring methods
Be able to assess and resolve internal and external organizational conflicts
Be able to use negotiation techniques
Be able to determine how public health challenges can be addressed by applying strategic principles and management-based solutions
A knowledge of the finance and accounting skills needed for operational management, performance assessment, and forecasting
The ability to develop a departmental budget

Public Health Management (continued)
An understanding of marketing principles and strategies
A knowledge of ethical principles relative to data collection, usage, and reporting results
An awareness of ethical standards related to management
A knowledge of ethical standards for program development