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Improving COVID-19 Vaccination Uptake in the Latino Community Through Standardized Outreach

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N653: Internship - Quality Improvement Project

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Abstract

Vaccine hesitancy during the COVID-19 pandemic has been an issue in the Latino community since the approval of the emergency use of the Moderna and Pfizer vaccines. Latino patients from a community health clinic in Oakland, CA have expressed their hesitancy. Only 47% of patients 65 years and older at the community health clinic received the COVID-19 vaccine. With COVID-19 disproportionately affecting this community, focusing on prevention through the uptake of a COVID-19 vaccine is necessary. A microsystem assessment concluded the need for the improvement of patient outreach via calls. This project seeks to examine if standardizing the patient outreach process through phone calls promotes vaccine uptake in patients over four weeks. Findings from the literature review suggest that the multimodal intervention proposed in this project will increase vaccine uptake among patients. Components of the intervention include motivational interviewing, standardization of the outreach process, and documentation. The evaluated outcome will be scheduled vaccine appointments prior to the intervention compared to scheduled vaccine appointments after implementation of the intervention. It is difficult to change human behavior, therefore, the focus on improving the patient outreach process with the recommendations provided in this quality improvement project can serve as a foundation from which a health institution, such as a community clinic, can forge an intervention that better suits the needs of the population it serves.

Keywords: Vaccine Hesitancy, Vaccine, Latino, Hispanic, Outreach, Vaccine Uptake, Interventions, Evidence-based, Quality Improvement

Improving COVID-19 Vaccination Uptake in the Latino Community Through Standardized Outreach

March 2020 marked the beginning of an unexpected pandemic in the United States of America. The COVID-19 virus has taken the lives of hundreds of thousands of people with treatment and prevention being an obstacle. Particularly, the Latino community, or people of Latin American origin or descent, has been impacted with the Centers for Disease Control and Prevention (CDC) reporting that "Latino people are hospitalized because of the virus four times the rate of White Americans" (CDC, 2020, para 3). Additionally, according to the National Center for Health Statistics (2020), Latinos are 2.3 times as likely to die from COVID-19 compared to white Americans. This can be due to a combination of many factors that have resulted in overexposure of the virus and susceptibility. Some of the factors that have contributed to the incidence rate and impact of COVID-19 among the Latino population include employment, health insurance, socioeconomic status, sick leave/paid leave or employee benefits, family size, household size, comorbidities, cultural/traditional beliefs and values, and mistrust.

The mistrust in the government is a rhetoric that has been created as a result of the Latino people being painted in a negative light during President Trump's presidency, which contributed to an anti-immigrant sentiment, discrimination, and dehumanization (King & Lopez-Cevallo, 2020). Historically, there has been structural racism and medical malpractice towards communities of color in the United States. For example, the "sterilization of Puerto Rican women and Mexican men and women" still remains as inhumane events in American history (Sanchez & Pena, 2021, para 2). Additionally, the maltreatment of Latinos in the immigrant detention centers has left many wounds for this community. The fear and exclusion felt by this community has

resulted in distrust. When there is mistrust in the government and affiliated organizations, such as the CDC, it makes it much harder to combat a pandemic.

In order to reduce the spread and transmission of the deadly COVID-19 virus, prevention is vital. However, many Latinos rely on information from media sources such as television and radio as well as informal sources such as family members and social support networks (Castaneda & Diaz., 2017; Torres et al., 2016). Misinformation and the media have contributed to the distrust of communities and their leading bodies to the point that some have even questioned the severity of the virus. Now that there is a leading option for COVID-19 prevention, which is vaccination, the Latino community, especially those aged 65 years or older, are hesitant. In the United States, the CDC assessed the intent of COVID-19 vaccination among groups prioritized for early vaccination and found that only 36.4% of the Hispanic/Latino ethnic group had the intent to vaccinate (Nguyen et al., 2021). Vaccinating high risk groups, especially the ethnic groups that have been largely affected, such as the Latino community, is a priority to reduce the mortality and morbidity rates. Ultimately, vaccination is the solution for eradicating this pandemic. However, trust has to be regained and education has to be provided by health care clinics, primary providers, and healthcare professionals to encourage vaccine uptake. Additionally, the processes and procedures for vaccination should be patient-centered, coordinated, and evidence-based to optimize effectiveness.

Due to the health insurance disparity between Latinos and non-Latino White Americans, many Latinos seek medical care from community clinics or community hospitals (Castaneda & Diaz, 2017). The COVID-19 pandemic has affected community health clinics in particular because community health clinics have had to adjust to a new way of providing healthcare services with the use of telemedicine. While for some medical practices and facilities

telemedicine is seen as a solution, telemedicine is a barrier for patient populations served by community health clinics due to technology literacy levels being low among these communities and the inaccessibility to devices that enable telemedicine visits. This could exacerbate health disparities among already vulnerable populations.

In the United States, barriers to telemedicine are more frequently found in "rural populations, older adults, racial/ethnic minority populations, and those with low socioeconomic status, limited health literacy, and limited English proficiency" (Nouri et al., 2020, para 1). After exploring potential disparities because of the transition to telemedicine primary care visits during the COVID-19 pandemic, Nouri et al. (2020) found the proportion of visits with populations at risk for limited technology literacy/access have decreased significantly. Specifically, patient visits decreased significantly among the patient groups > 65 years old, non-English language preference, and insured by Medicare or Medicaid (Nouri et al., 2020). A decrease in patient visits has contributed to a loss of revenue among clinics. Community health clinics in California are operating based on the Department of Public Health's recommendations and policies. In order to return to normality and increase patient census, patients need to be vaccinated to ensure the safety of staff and other people in the clinic.

Problem Description

A community health clinic in Oakland, California serves primarily the Latino community. The clinic is equipped with Spanish speaking staff to enable the provision of culturally competent and patient centered care. In the Family Medicine Unit, many of the patients have chronic conditions and comorbidities. This puts this patient population at higher risk for complications if these patients become infected with COVID-19. Providers have been recommending the Moderna and Pfizer vaccines after they were approved by the FDA for emergency use to patients based on

their eligibility tier. However, data from informational interviews with staff from the community health clinic indicated that there is vaccine hesitancy stemming from fear and misinformation surrounding the vaccines. According to the clinic manager of the community health clinic, only 47% of patients ages 65 years and older at the clinic have decided to get the vaccine. This leaves 53% of patients in this age group who refused and did not get the vaccine. Community members, patients, and their loved ones continue to be at risk for the virus.

To address the issue of vaccine hesitancy, a microsystem assessment was completed to gain a better understanding of the issue. Originally, there were issues in the operational process of the vaccine clinic because patients needed to complete all documentation on paper. Based on site observations, this resulted in long wait times for patients and an inefficient process. In order to address this issue, a cloud-based platform called Primary.Health, was implemented to streamline the registration process. After implementation of Primary.Health, the wait times have decreased, and the overall efficiency of the registration process has improved, based on site-specific observations. Another area of improvement that was identified through the microsystem assessment was patient outreach and education. Informational interviews with staff suggest that the current patient outreach process being utilized by the clinic is fragmented and uncoordinated. Patient calls are lacking standardized education about the vaccines and so misinformation and myths are not able to be corrected. Some patients have been called on three separate occasions and patients have not tolerated the calls, which has been demonstrated by patient complaints about the calls and resistance to speak about the vaccine. Due to patients being unsatisfied with the patient calls, the clinic decided to discontinue patient outreach calls regarding COVID-19 vaccination. This is an important opportunity to better understand the reasons for hesitancy in order to properly tailor evidence-based interventions that would promote vaccine uptake.

Available Knowledge

PICOT Question

After completing the microsystem assessment, conducting informational interviews with clinic staff and leadership, and identifying areas for improvement to aid in the vaccine uptake of the Latino patients of the community health clinic, a PICOT question was established. A PICOT question is a formulated question that encompasses the population, intervention, comparison, outcome, and timeline. For this project, the PICOT question posed is: In patients who are receiving a phone call to schedule a COVID-19 vaccine appointment, will educating the staff on a multimodal, standardized outreach intervention compared to the current outreach process improve COVID-19 vaccine uptake in 4 weeks?

Literature Search

Two databases were utilized to explore the effectiveness of multimodal interventions in addressing vaccine hesitancy in February 2021. The databases used in the search were PubMed and CINAHL Complete. The search terms or keywords used for searching the databases were: vaccine hesitancy, vaccine, Latinx, Latino, Hispanic, outreach, vaccine uptake, interventions, education, evidence-based, quality improvement. There were a limited number of articles that pertained to the Latinx or Latino community, specifically. Additionally, many of the articles focused on the Human Papilloma Virus (HPV) and the Influenza or flu vaccines. Due to COVID-19 being a relatively new virus, psychosocial studies that pertain to COVID-19 vaccine uptake and hesitancy are very limited. Only peer-reviewed articles published no earlier than 2016 were reviewed. Additionally, the focus of the search was on articles that contained evidence-based interventions to encourage vaccine uptake and reduce vaccine hesitancy. These articles were used for the review.

Literature Synthesis

The literature search provided recommendations for reducing vaccine hesitancy by using a multimodal intervention approach as there are many factors that affect vaccine hesitancy and uptake (Falcone et al., 2020; Reno et al., 2018; Tan, 2018). For example, some factors that affect vaccine hesitancy and uptake are political ideology, perceived risk of infection, educational level/attainment, age, and socioeconomic status (Baumegaertner et al., 2020). A study conducted by Sevin et al. (2016) in a clinic that serves an urban, underserved, and multicultural community in Ohio found that the top five influencers in vaccine uptake among patients were: "doctor's recommendation, knowing why they should get a vaccine, knowing which vaccines they need, cost, and concern about getting sick if they get a vaccine" (p. 1). Thus, these findings support the implementation of interventions that improve provider-patient communication as well as highlights the importance of the primary provider's role in providing patient education regarding vaccines (Reno et al., 2018). Furthermore, patients will be more receptive to vaccination if the benefits and indications for the vaccine were promoted, which is beneficial information for patients with chronic conditions (Sevin et al., 2016).

Patient education and effective communication are two components that are necessary when introducing something new to a patient. Patient education needs to be individualized and strategic. For example, educating the patient about the vaccine preventable disease is important to include in the conversation (Guzman-Holst et al., 2020). Additionally, motivational interviewing is an evidence-based intervention that has been effective in increasing vaccination uptake (Reno et al., 2018; Wallace-Brodeur et al., 2020). Having staff trainings to improve workflow patterns and on how to effectively recommend vaccines to patients with the use of motivational interviewing techniques can aid in reducing vaccine hesitancy (Falcone et al., 2020; Wallace-

Brodeur et al., 2020). Changes in decision support and documentation, such as recording patient refusal, were associated with an increase in influenza vaccination uptake in a primary care clinic in Illinois (Persell et al., 2020). Apart from staff training on motivational interviewing and communication techniques with vaccine hesitant patients, Kappa et al. (2020) recommends utilizing a call-center as a cost-effective and efficient way to increase patient satisfaction and organizational performance.

Understanding that communities have differences in regard to vaccination behavior and beliefs are extremely important to consider when implementing an intervention for a specific community. With the knowledge we have about the Family Medicine Unit patient population at the community health clinic and its vaccination process, recommendations from the literature can be appropriately integrated into this project.

Rationale

Change Theory

To guide this quality improvement project, Kurt Lewin's Change Theory will be used. This change theory encompasses three major concepts: driving forces, restraining forces, and equilibrium (Petiprin, 2020). The driving forces push for change to occur, whereas restraining forces are considered the barriers to change. The concept of equilibrium is when the driving forces and restraining forces equal each other and therefore, change is unable to occur (Petiprin, 2020). In order to stimulate change, Kurt Lewin's Change Theory incorporates three phases to push the driving forces to overcome the restraining forces.

The three phases are unfreezing, change, and refreezing. In the unfreezing phase, the need for change is proposed and the restraining forces or barriers to change are addressed and mitigated. The current patient outreach process that was observed in the community health clinic

is unstandardized and fragmented. This contributes to the issue of vaccine hesitancy in patients. Therefore, demonstrating the ineffectiveness of the current process is key to stimulate change. Showing the benefits of having a standardized and coordinated outreach process may also help staff consider the proposed changes. In this phase, group behaviors that divert to a new direction will be increased (Hussain et al., 2018). Once the driving forces, such as staff buy-in, are greater than the restraining forces, the change phase will occur, whether it be change in thoughts, perspective, or behavior. When the change is implemented, it is desired for the new patient outreach process to be adopted as a new habit and thus the refreezing phase occurs. The refreezing phase allows for the change or new process to be reinforced to prevent any increase in restraining forces or people reverting back to the old behavior.

Model for Improvement

Another framework that is recommended by the Institute for Healthcare Improvement to be utilized for accelerating improvement is called the Model for Improvement. According to Langley et al. (2009), this framework is an integrated approach to process improvement that can be applied to diverse settings. This model has two parts. The first part entails addressing three fundamental questions, which aid in setting aims, establishing measures, and selecting changes (Langley et al., 2009). The second part is the Plan Do Study Act (PDSA) cycle to test changes in the setting. Multiple PDSA cycles may be required to test a change until the desired improvement is achieved. The community health clinic's lack of organized process improvement contributed to patient vaccine hesitancy. As explained by the clinic manager, patients received multiple calls from the clinic from different staff regarding the COVID-19 vaccine without being provided individualized education and patients became upset and more resistant to getting vaccinated. This example demonstrates the importance of having a coordinated outreach effort that is person-

centered. By using the Model for Improvement framework, intentional steps for improvement can be taken such as planning the change and intervention, implementing the change, studying the change's effectiveness, and acting upon the findings from the evaluation to determine if the change needs to be revised to complete another PDSA cycle or if the PDSA cycle is terminated because the desired outcomes were met.

Project Aim

With this project, we aim to improve COVID-19 vaccine uptake among Latino patients at a community health clinic in Oakland, California. By working on the patient outreach process, we expect increased nurse efficacy, improved nurse-patient communication, increased knowledge about COVID-19 and the vaccine among patients, a decrease in stigma or misinformation surrounding vaccinations, a decrease in COVID-19 infection, and increased vaccine uptake. It is important to work on this now because we are in the middle of a COVID-19 pandemic and the COVID-19 vaccines are crucial in preventing COVID-19 infection and transmission, especially among communities that have been disproportionately affected by COVID-19.

Methods

Context

The Clinical Nurse Leader works within the microsystem to provide direct patient care as well as works to support, guide, and educate nurses in the improvement of processes and procedures with the utilization of evidence-based practices (Harris et al., 2018). The process of improvement begins by conducting a microsystem assessment. A microsystem assessment is a unit needs assessment that identifies unit strengths and weaknesses as well as enables the Clinical Nurse Leader to objectively identify areas for improvement. Valuable information was obtained from the microsystem assessment and site observations conducted in the Family Medicine Unit.

Further data and information were obtained from informational interviews with the community health clinic's staff and leadership.

PDSA Cycles

The 5P framework that incorporates the unit specific assessment of purpose, patients, professionals, processes, and patterns is used to guide the microsystem assessment. The microsystem assessment indicated areas of improvement for both the vaccination clinic's operational process and the patient outreach process. The community health clinic had completed a few PDSA cycles without evaluating the change implemented and so new PDSA cycles were implemented that lacked evidence-based practices and coordination. In the vaccination clinic's operational process, the registration portion was an area identified as needing improvement. The community health clinic implemented the use of a cloud-based software called Primary.Health to shift all patient documentation and registration from paper to a digital format. Patients are now completing their registration forms via Primary.Health on their phones or other technological device that has access to internet. This has reduced patient wait times, reduced paperwork, and has improved the overall efficiency of the vaccination process. With the improvements made in the vaccination process, our direction shifted to focus on the patient outreach and education process.

For the patient outreach process, medical assistants and nurses began calling eligible patients for vaccine appointment scheduling. They were met with resistance as these patients were not interested in getting the COVID-19 vaccine. Providers in the clinic were then encouraged to call the same patients to give their recommendation of the vaccine. Providers were also met with resistance. Patients received multiple calls from clinic staff regarding vaccination. There are various reasons for the hesitancy, many of which stem from fear and

misinformation. The healthcare professionals calling the patients did not use motivational interviewing techniques and did not provide individualized education about the vaccine during the calls. The uncoordinated effort to call patients for vaccine promotion left patients frustrated with the staff, which resulted in increased refusal of the vaccine as well as the clinic's decision to abandon patient outreach via phone calls. This is an area that needs improvement.

Prior to patient outreach via phone calls being abandoned, a patient survey was created with the hopes that it would be implemented during patient outreach calls to better understand the reasons for vaccine hesitancy as well as to understand the sources of information that the patients refer to for information regarding COVID-19 and the vaccine. This survey can be found in Appendix A. By implementing this survey, educational efforts as well as overall outreach efforts could be better tailored to the community's specific needs. Additionally, due to lack of individualized and standardized education being provided to patients regarding the vaccine, an educational resource was created to support staff in answering common questions about the vaccine. This resource, which can be found in Appendix B, can also be used to dispel vaccine myths and misinformation.

Patient frustration and hesitancy increased as clinical staff continued to call regarding a COVID-19 vaccination appointment. Thus, phone calls to patients for this reason were discontinued. The community health clinic was not using this opportunity with their patients effectively, thus the need for standardizing and coordinating patient outreach efforts became apparent. With this project being completed primarily in a remote setting due to clinic COVID-19 policies and the inability to implement the desired intervention through patient phone calls, the quality improvement project direction shifted to a hypothetical project. With the review of

literature and evidence-based practices, a multimodal intervention to address vaccine hesitancy to promote vaccine uptake is proposed in this hypothetical project.

SWOT

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, found in Appendix C, was used to assess what has been working well in the community health clinic and what needs work in order to effectively implement change to improve the patient outreach process. Strengths of the organization that were identified were having skilled and knowledgeable staff, having existing educational materials, having a well-known community health clinic with multiple departments that can be used as a resource such as Behavioral Health and Health Coaching, and having access to county and CDC information and guidance. Organizational weaknesses that were identified consisted of financial limitations due to a budget that has been negatively affected by this pandemic, loss of revenue due to limited in-person operations, and weekly changes to the vaccination and phone call process to address the evolving COVID-19 situation. Examples of some opportunities that were identified are support from local community-based clinics in the county as well as outreach in local churches, grocery stores, schools, and senior centers to raise awareness, combat misinformation, and provide education to community members. Threats to improving this process consist of constant evolvement of processes due to new data and information being disseminated, changing vaccine eligibility tiers, fluctuating vaccine supply, media misinformation, and patients refusing education about the vaccine.

Cost-Benefit Analysis

Healthcare facilities, especially community health clinics, were deeply affected financially by this pandemic. Specifically, this Oakland community health clinic, which serves 90,000 people a year, suffered huge revenue losses when the pandemic prompted them to stop patient visits to

mitigate the spread of COVID-19 (Katoni & Sparling, 2020). Katoni and Sparling (2020) further explain that the community health clinic lost over $3,000,000 monthly in revenue during 2020. With the transition to telehealth medical visits, the underserved communities served by this community health clinic may not benefit from these types of visits because of inaccessibility to technology or low technology literacy levels. Many of the patients of this community health clinic benefit from the support and interaction received during in-person visits as many patients need health education and assistance with monitoring their blood pressure, blood sugar, or medications. By promoting COVID-19 vaccination among these communities, it is expected to have a decrease in COVID-19 infection to ultimately deem it safe for the community health clinic to open its doors again to in-person visits. In-person visits are something that the patients as well as the clinic desperately needs. By having a Clinical Nurse Leader develop the educational materials and training for the nursing staff to improve the patient outreach process for COVID-19 vaccine appointments, the community health clinic can take a step forward towards seeing patients in person. The total costs for a Clinical Nurse Leader to develop and conduct staff trainings to ten registered nurses is $1149.39, as demonstrated in Appendix D. This cost is minimal compared to the $3,000,000 in monthly revenue loss. By having patients vaccinated, the safety of the clinic can be evaluated for in-person visits to reduce losses and increase revenue.

Intervention

The literature suggests using a multimodal intervention to increase vaccine uptake because vaccine hesitancy is a complex issue. Thus, our intervention includes implementation of a script for nurses to use during patient calls aimed at scheduling vaccine appointments. The script incorporates the use of motivational interviewing techniques, which are shown in Appendix G, to guide the person-centered, individualized education that would be provided

during the call. Information about the benefits of the vaccine as well as the risks and consequences of the COVID-19 virus should also be shared with patients during this call. The staff would refer to the educational resource in Appendix B for information the patients may inquire about or to dispel misinformation. For patients that are vaccine hesitant, implementing a vaccine-hesitancy survey, such as in Appendix A, will help determine the reasons for vaccine hesitancy as well as the sources of information the patients refer to. Lastly, standardized documentation of the telephone encounter with the patient into EPIC is a key component to facilitate with identifying patterns or trends. Essentially, with our multimodal intervention we are improving workflow, nurse efficacy in the topic, communication between patient and healthcare professional, and are obtaining data on vaccine hesitancy for the next PDSA cycle. With the data from the vaccine hesitancy survey, evident in Appendix A, we can revise the educational script as well as use the collected information to revise outreach efforts to better meet the needs of the community. Our desired outcome is to have this multimodal intervention result into a scheduled COVID-19 vaccination appointment. We will measure vaccine uptake rates for patients that partook in our intervention to determine our intervention's effectiveness. The Gantt chart in Appendix E shows the timeline of the project with the components that are hypothetical.

Measures

To study the effectiveness of this multimodal intervention, the PDSA cycles will be used. The PDSA cycles are rapid cycles that test for change with a phase of evaluation and revision. Thus, the intervention can be adjusted or changed if necessary. A measure to also determine the effectiveness of the proposed intervention is to compare the number of scheduled appointments for COVID-19 vaccination before and after implementation of the intervention. A

patient feedback survey will also be mailed out, texted, or emailed to the patient after their phone call with the healthcare professional to be completed at a later time. This survey can be referred to in Appendix F. By including the patient perspective, the intervention can be modified, if needed, for a new PDSA cycle. Audits in the electronic health record that is used by the community health clinic called EPIC will give the Clinical Nurse Leader the opportunity to identify any patterns or trends related to vaccine hesitancy and vaccine uptake. These audits will be conducted by the Clinical Nurse Leader to determine proper documentation of patient calls and adherence to the intervention.

Results

The inability to implement the proposed intervention and the shift to a hypothetical project led to the reliance of results obtained from the literature. Reno et al. (2018) implemented an intervention that included motivational interviewing and a fact sheet, which resulted in a reported high parental Human Papilloma Virus vaccine acceptance of 75% compared to 46% of acceptance among the control group. These two components of the intervention were reported by providers as the most useful and easiest to implement. Sevin et al. (2016) recommends including information about the benefits and indications for vaccines in conversations between healthcare professionals and patients after their study showed that patients respond more positively toward vaccines when this type of information is included. Streamlined documentation combined with other evidence-based interventions to improve workflow and communication led to a 57% increase in influenza uptake in a clinic for the uninsured (Falcone et al., 2020). Furthermore, staff training on how to effectively recommend the HPV vaccine has been a major contributor to vaccine uptake (Wallace-Brodeur et al., 2020).

Ethical Considerations

This project was fulfilled at an Oakland, California community health clinic as an evidence-based change project and was approved as a quality improvement project by University of San Francisco faculty using quality improvement review guidelines. The completed Statement of Non-Research Determination Form, which can be referred to in Appendix H, contains more information about this project being an evidence-based project. Therefore, this project does not require IRB approval.

Ethical considerations were utilized for this project. Two ethical principles that are addressed are autonomy and the right to self-determination. With autonomy, the health care professional has to respect and support the patient's decision for what will be done with their own person. According to the American Nurses Association (2015), the right to self-determination is the patient's moral and legal right to determine what will be done to their own person and to be given the complete and accurate information to facilitate an informed decision. With the proposed intervention, healthcare professionals will have the training and resources to be prepared to inform patients about the benefits, side effects, indications, and contraindications for the vaccine as well as educate patients about the consequences and risks of COVID-19. The educational resource will also help healthcare professionals dispel misinformation or myths that patients may share during the conversation or may be affected by. Misinformation spread by the media and by word of mouth have largely contributed to vaccine hesitancy, as mentioned by the clinic's leadership during an informational interview. Thus, ensuring that the patient is fully informed about the vaccine as well as the virus are essential. The healthcare professional has to respect and support the patient's decision on vaccination regardless of the healthcare professional's wishes for the patient. However, the healthcare professional should do their due diligence by ensuring the patient is fully informed to make their decision.

Discussion

Implications for Practice

This project can serve as a resource and example of how to approach patients when discussing something new, such as a vaccine. The importance of staff buy-in when implementing a change and having a coordinated process is demonstrated. With COVID-19 being prevalent with new variants and herd immunity being something to work towards, COVID-19 will not be eliminated anytime soon. Thus, this project can be used as a resource for future COVID-19 prevention and eradication projects.

Barriers

Some barriers could be contributed to the remote nature of this project. This project was completed remotely apart from the initial phase, which was the microsystem assessment, in order to respect the COVID-19 regulations in the community health clinic that were advised by the public health department. The community health clinic's priorities were to their patients and staff during this unprecedented time of the COVID-19 pandemic, which is understandable. Resources were put towards fighting this pandemic through the operation of the vaccination clinic. This resulted in the clinic being short staffed, and current staff being pulled from their regular roles to assist with vaccination efforts. With so much on the staff's plates and the remote nature of this project, communication between the clinic leadership and the members of this project was ineffective. For example, students participating in this project were not fully informed of clinical changes that were occurring at a rapid pace and this led to project delays and unexpected changes. This created difficulties for this project to be completed efficiently and effectively. Another barrier was the inability to implement the proposed intervention due to clinic's decision to discontinue patient outreach via phone calls. Therefore, the effectiveness of the proposed

intervention for this particular community and patient population could not be evaluated. The limited time period for this project also served as a barrier because only 3-4 months could be dedicated to the entirety of the project.

Recommendations

It is recommended that this project be implemented and completed onsite when the eligibility tier is consistent such as when everyone, who is not contraindicated, is eligible for vaccination. A project with this scope and type of intervention should also be implemented in person or onsite rather than remotely to effectively evaluate all portions of the project. Additionally, it is important to assess the site of implementation's readiness for change to determine staff buy-in and support before continuing with project.

Limitations

There were several limitations to this project. One limitation of the project was the changing eligibility tiers for vaccination. For example, vaccine hesitancy can vary among age groups; thus, it would be difficult to measure the effectiveness of our intervention with eligibility tiers allowing younger demographics to become vaccinated. There is also lack of historical evidence of COVID-19 and vaccines due to new viral discovery and vaccine development. Additionally, the data used to propel this project was obtained from onsite observations and was based on the perspective of four staff members with different responsibilities and perspectives in the community health clinic.

Conclusion

The COVID-19 pandemic has disproportionately affected the Latino community and in order to combat this pandemic, vaccination is highly encouraged. However, the community health clinic in Oakland, California had an uncoordinated and unstandardized outreach process that resulted in increased patient frustration that contributed further to the already existing vaccine hesitancy among these patients. This led to patient outreach being discontinued, which is unfortunate and not recommended. By improving the patient outreach process through standardization and coordination of a multimodal, evidence-based intervention, vaccine uptake among the Latino community is strongly expected to increase. Although this project was unable to be fully implemented at the site, based on the literature review findings, it is expected that the proposed intervention in this project would be successful. It is recommended to implement the intervention and continue to evaluate the intervention through the completion of PDSA cycles. By increasing vaccine uptake among this community, risk of transmission can be reduced, and the clinic can move forward with in-person patient visits that greatly benefit both the patients and the community health clinic.

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Appendix A

Patient Vaccine Hesitancy Survey

1. Where do you get your information about COVID-19 from? De donde obtiene su información sobre el COVID-19?

2. What do you know about COVID-19? ¿Qué sabe acerca del COVID-19?

3. Have you tested positive for COVID-19? ¿Ha dado positivo en la prueba de COVID-19?

4. Where do you get your information about the COVID-19 vaccine from? De donde obtiene su información sobre la vacuna para el COVID-19?

5. What do you know about the COVID-19 vaccine? ¿Qué sabe acerca de la vacuna?

6. Do you have any concerns about the COVID-19 vaccine? Tiene preguntas o preocupaciones acerca de la vacuna del COVID-19?

7. Are you aware of your eligibility for the COVID-19 vaccine? Usted sabe si es elegible para la vacuna contra el COVID-19?

    Yes: How did you know about your eligibility? ¿Cómo supo de su elegibilidad?
    No: Do you know how to find information about your eligibility? ¿Sabe cómo encontrar información sobre su elegibilidad?

8. Do you receive other recommended vaccines like the flu vaccine? ¿Recibe otras vacunas recomendadas como la vacuna contra la gripe?

9. Have you been recommended to get the COVID-19 vaccine? Le han recomendado recibir la vacuna contra el COVID-19?

    Yes: By who? Por quien?

Appendix B

Patient Education Resource

Patient Responses/Statements	Health Professional Response
How do we know that these vaccines are safe when they are so new? Couldn't they cause problems that we don't know about yet? What about long-term problems?	COVID-19 vaccines are being tested in large clinical trials to assess their safety. However, it does take time, and more people getting vaccinated before we learn about very rare or long-term side effects. That is why safety monitoring will continue. CDC has an independent group of experts that reviews all the safety data as it comes in and provides regular safety updates. If a safety issue is detected, immediate action will take place to determine if the issue is related to the COVID-19 vaccine and determine the best course of action.
Can COVID-19 vaccine make me sick with COVID-19?	No. None of the authorized and recommended vaccines contain the live virus that causes COVID-10. This means the vaccine cannot make you sick with COVID-19. There are several different types of vaccines in development. All of them teach our immune systems how to recognize and fight the virus that causes COVID-19. Sometimes this process can cause symptoms. These symptoms are normal and a sign that the body is building protection against the virus that causes COVID-19.
Will a COVID-19 vaccine alter my DNA?	No. MRNA vaccines do not change or interact with your DNA in any way. mRNA vaccines teach our cells how to make a protein that triggers an immune response. COVID-19 mRNA vaccines work with the body's natural defenses to safely develop immunity to disease.
Is there a microchip in the vaccine?	No, there is no microchip in the vaccine. These claims are baseless and false. The vaccine vials have a list of ingredients made clear so consumers can read them. These are also accessible via the internet.
How much will the shot hurt?	Your arm may be sore, red, or warm to the touch. These symptoms usually go away on their own within a week.

After getting a COVID-19 vaccine, will I test positive for COVID-19 on a viral test	No. Neither the recently authorized and recommended vaccines nor the other COVID-19 vaccines currently in clinical trials in the United States can cause you to test positive on viral tests, which are used to see if you have a current infection
The COVID-19 vaccine was rushed to the market or the science was rushed.	The COVID-19 vaccines from Pfizer/BioNTech and Moderna were created with a method that has been in development for years, so the companies could start the vaccine development process early in the pandemic China isolated and shared genetic information about COVID-19 promptly, so scientists could start working on vaccines. The vaccine developers didn't skip any testing steps, but conducted some of the steps on an overlapping schedule to gather data faster. Vaccine projects had plenty of resources, as governments invested in research and/or paid for vaccines in advance. Some types of COVID-19 vaccines were created using messenger RNA (mRNA), which allows a faster approach than the traditional way that vaccines are made. Social media helped companies find and engage study volunteers, and many were willing to help with COVID-19 vaccine research. Because COVID-19 is so contagious and widespread, it did not take long to see if the vaccine worked for the study volunteers who were vaccinated.
The vaccine affects fertility in women.	Confusion arose when a false report surfaced on social media, saying that the spike protein on this coronavirus was the same as another spike protein called syncitin-1 that is involved in the growth and attachment of the placenta during pregnancy. The two spike proteins are completely different and distinct, and getting the COVID-19 vaccine will not affect the fertility of women who are seeking to become pregnant, including through in vitro fertilization methods. During the Pfizer vaccine tests, 23 women volunteers involved in the study became pregnant, and the only one who suffered a pregnancy loss had not received the actual vaccine, but a placebo.

I've already had COVID-19, so I don't need to get the vaccine.	People who have gotten sick with COVID-19 may still benefit from getting vaccinated. Due to the severe health risks associated with COVID-19 and the fact that re-infection with COVID-19 is possible, people may be advised to get a COVID-19 vaccine even if they have been sick with COVID-19 before. Yes, you should be vaccinated regardless of whether you already had COVID-19. That's because experts do not yet know how long you are protected from getting sick again after recovering from COVID-19.
The side effects of COVID-19 vaccine are dangerous.	The COVID-19 vaccine can have side effects, but the vast majority are very short term —not serious or dangerous. The vaccine developers report that some people experience pain where they were injected; body aches; headaches or fever, lasting for a day or two. These are signs that the vaccine is working to stimulate your immune system.
I won't need to wear a mask after I get the vaccine	-It may take time for everyone who wants a COVID-19 vaccination to get one -While the vaccine may prevent you from getting sick, it is unknown at this time if you can still carry and transmit the virus to others. Until more is understood about how well the vaccine works, continuing with precautions such as mask-wearing and physical distancing will be important.
You can delay routine vaccinations until after the pandemic is over	No, you should keep up to date with any important adult vaccinations and ensure children are kept up to date as well. There are ways to ensure decreased risk of exposure and still allow you to get necessary vaccines.
I heard the vaccine can alter the results of my mammogram. I am concerned - does this mean the vaccine will give me breast cancer?	No, the vaccine will not give you breast cancer. The reports regarding mammogram results being influenced by the COVID vaccine are based on the potential side effect of swollen lymph nodes. There are lymph nodes located in the breasts, and the vaccine may cause them to swell. This is not uncommon, and it is a normal response to the vaccine. If you plan on having a mammogram soon after receiving the vaccine, please contact your provider to let them know about your appointment.

The COVID-19 vaccine was developed with or contains controversial substances	The first two COVID-19 vaccines to be authorized by the FDA contain mRNA and other, normal vaccine ingredients, such as fats (which protect the mRNA), salts, as well as a small amount of sugar. These COVID-19 vaccines were not developed using fetal tissue, and they do not contain any material, such as implants, microchips or tracking devices.
Will it interfere with any medications?	The vaccine should not interfere with most common medications like blood pressure medications, diabetes medications, and thyroid medications. If you are on immunosuppressant medications (chemotherapy, high dose steroids), it is important to ask your doctor about specific medications.
Will it be safe for people with low or high blood pressure? High cholesterol?	Yes, this vaccine is safe in people with medical conditions like high blood pressure, DM, and high cholesterol. Patients with all of these conditions were included in the vaccine trials.
Is it safe for older people?	Yes, the vaccine is safe in people of all ages >18yo for Moderna. More than 20% of the patients in each of the trials were older than 65% years. It is especially important to get vaccinated if you are older given how dangerous the virus can be in the elderly/
If you are allergic to egg (flu vaccine) can you still get the COVID vaccine?	Yes, there are no egg products in the vaccine so you can still get the vaccine

Appendix C

SWOT Analysis

Strengths	Weaknesses
• Established, well-known community-based clinic • Skilled and knowledgeable staff • Existing educational materials • Access to county and CDC information	• Financial limitations due to budget • Loss of revenue due to continued limit of in-person operations • Weekly changes to vaccination and phone call process to address evolving COVID-19 situation
Opportunities	**Threats**
• Support from other community-based clinics in the county • Media coverage of vaccination site • Outreach in local churches, grocery stores, senior centers to raise awareness	• Short supply of vaccines may lead to site closures • Patients not accepting education and therefore, not setting up vaccine appointment • Vaccine hesitancy which is fear-based • Media misinformation

Appendix D

Cost-Benefit Analysis

Costs	Calculations	Totals
COVID-19 Related Revenue Loss		
Decrease in revenue for the clinic during COVID-19 pandemic	$3,000,000 loss of monthly revenue	($3,000,000)
Implementation Costs		
CNL work to create educational materials, training materials, and development of a script to be read during calls over four hours	$60/hour x 4 hours = **$240**	($240)
Paper for training materials	1 ream of 500 sheets= **$5**	($5)
Employee Training for 10 registered nurses over two hours	$35/hour x 2 hours = $70 x 10 employees = **$700**	($700)
Training conducted by CNL over two hours	$60/hour x 2 hours = **$120**	($120)
Printer Color/Black Ink	$80.39 x 1 cartridge = **$80.39**	($80.39)
Total Costs		($1145.39)
Total Revenue and Costs		($3,001,145.39)
Total Increase in Revenue After Implementation of Proposal	Return of patients who have not attended La Clínica in person due to COVID-19	$3,000,000

Appendix E

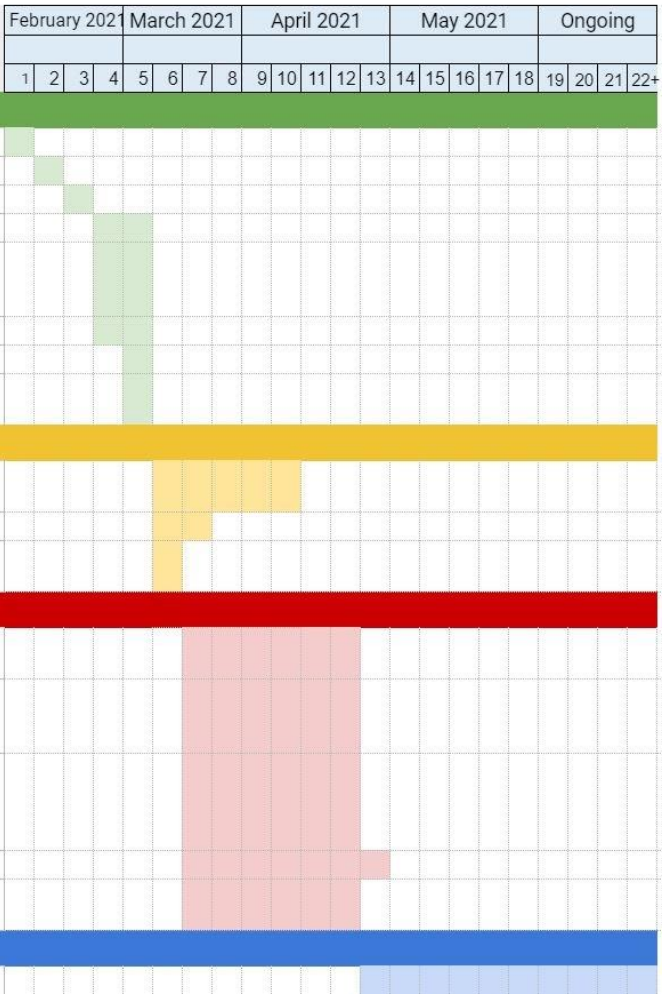
GANTT CHART

TIMELINE: CREATION & IMPLEMENTATION OF STANDARDIZED OUTREACH PROCESSES

Begins: Feb 2021 **Ends: May 2021**

Total: 18 weeks

TASK TITLE	START	END	DURATION (weeks)
PLAN			
Define the project	Week 1	Week 1	1
Develop AIM	Week 2	Week 2	1
Microsystem assessment	Week 3	Week 3	1
Develop interventions	Week 4	Week 5	2
Create measurements, outcomes, processes, and balancing	Week 4	Week 5	2
Review literature	Week 4	Week 5	2
Identify changes to test	Week 5	Week 5	1
Development of staff training material	Week 5	Week 5	1
DO (hypothetical)			
Implementation of revised process and procedure	Week 6	Week 10	4
Staff training/inservice	Week 6	Week 7	2
Establish co-signer for patient charting/documentation	Week 6	Week 6	1
STUDY (hypothetical)			
Evaluation and ongoing performance improvement	Week 7	Week 12	5
Evaluate call center: rate of answered phone calls/phone calls made	Week 7	Week 12	5
Compare number of patients who scheduled an appointment compared to number of calls made before intervention	Week 7	Week 12	5
Patient expereince survey	Week 7	Week 13	6
Weekly evaluation of documentation adherence	Week 7	Week 12	5
ACT (hypothetical)			
Adopt, adapt or abandon cycle	Week 13	Week 18+	5+



Appendix F

Patient Experience Survey

Hello,

Thank you for participating in our phone appointment service. We appreciate your time and value your feedback. Please complete this survey. It is anonymous and confidential. This will not affect your care. The information will be used to adjust our services to better meet the needs of the community.

1. How helpful was the person you spoke with?
    - Very poor
    - Poor
    - Fair
    - Good
    - Very Good
2. How easy was it to schedule the appointment?
    - Very Poor
    - Poor
    - Fair
    - Good
    - Very Good
3. Did the staff member provide sufficient instructions and information on the vaccine appointment?
    - Very Poor
    - Poor
    - Fair
    - Good
    - Very Good
4. Was the staff member caring and courteous?
    - Very Poor
    - Poor
    - Fair
    - Good
    - Very Good
5. Overall, how would you rate your phone call experience?
    - Very Poor
    - Poor
    - Fair
    - Good
    - Very Good

Thank you for taking the time to complete the survey. We appreciate your feedback.

Appendix G

Motivational Interviewing Techniques

When beginning a motivational interviewing session, many healthcare organizations, including both Harvard Pilgrim and the American Academy of Family Physicians (AAFP), advocate for the use of the OARS acronym:

- Open-ended questions
- Affirmations (expressing empathy and celebrating even small successes)
- Reflective listening (repeating words back to patients)
- Summarizing

The AAFP advocates the following principles during motivational interviewing:

- Motivation to change is elicited from the patient, not imposed from outside
- It is the patient's task, not the healthcare professional's, to resolve their ambivalence
- Direct persuasion is not an effective method for resolving ambivalence
- The counseling style is a quiet one, with a focus on eliciting the patient's thoughts
- The healthcare professional is directive in helping the patient examine and resolve ambivalence
- Readiness to change is not a patient trait but a fluctuating product of interpersonal interaction
- The therapeutic relationship is more like a partnership or companionship; expert/recipient roles can impede the process
- Elicit pros and cons of change
- Inquire about the importance and confidence of making a change

Note. From Heath, S. (2017, September 20). *What is Motivational Interviewing in Patient Care Management?* PatientEngagementHIT. https://patientengagementhit.com/news/what-is-motivational-interviewing-in-patient-care-management

10 Strategies for Motivational Interviewing

Strategy #1: Ask a question that will prompt change to talk as an answer. For example, "What are some things you can do to make sure you are keeping yourself and your family safe during this pandemic?"

Strategy #2: Ask for the pros and cons of both changing and staying the same. For example, "How will getting the vaccine lower your risk of infection and hospitalization? How will having a sick family member impact you?"

Strategy #3: Ask about the positives and negatives of the target behavior. For example, "How will getting the vaccine improve your wellbeing? What are the negative impacts of getting the vaccine (e.g., cost, side effects)?"

Strategy #4: When the patient expresses change-talk, ask for more details. For example, "In what ways? Tell me more? When was the last time that happened?"

Strategy #5: Ask what may happen if the patient makes the changes according to their care management plan. For example, "If you follow all of the CDC guidelines and recommendations, what will be different? How do you see your health five years from now?"

Strategy #6: Ask about extreme outcomes. For example, "What are the worst things that might happen if you don't get the vaccine? What are the best things that might happen if you get the vaccine?"

Strategy #7: Offer ways to clearly measure the impact of vaccination. For example, "On a scale from one to 10 (where one is not at all important and a 10 is extremely important), how important is it to improve your health? What do you think you can do to get closer to a 10?"

Strategy #8: Ask about the patient's main health goals. For example, "Do you want to be healthy enough to travel to this summer? What upcoming family events do you want to attend?"

Strategy #9: Think like the patient and reframe any barriers into a positive strategy. For example, "Getting to the vaccination site seems to be like a hassle. How about we organize an Uber to transport you to and from the vaccination site instead?"

Strategy #10: Optional versus announcement recommendation: Instead of "have you thought about what shots you'd like to schedule today?" say, "We have some shots to do today". This implies shot is important and most people get it.

Note. From Marder, K. (2018, March 8). *Motivational Interviewing in Healthcare: 10 Strategies*. Health Catalyst. https://www.healthcatalyst.com/insights/motivational-interviewing-healthcare-10-strategies

Motivational Interviewing Example

HCP: “Today, we have the COVID-19 vaccine available for you. The specific vaccine we have is …”

Patient: “I don’t want the COVID-19 vaccine.”

Step 1: Ask patient to share concerns

HCP: “So you seem to have questions about the COVID-19 vaccine. I want to make sure I answer all your questions, so let’s talk about it. Would you mind sharing what your particular concerns are?”

Patient: “Well I heard it’s not safe and I’m worried about the side effects. I also heard I will get coronavirus through the vaccine.”

Step 2: Ask permission to share information. The provider reflects back what the parent is saying to be sure he/she understands (empathy), summarizes, and asks permission to share their own perspective.

HCP: “So I hear that you’re concerned about the COVID-19 vaccine’s side effects and that you will get the coronavirus through the vaccine. I have also heard some stories about this vaccine, and I follow vaccine safety closely. Is it okay if I go over what I know about this vaccine?

Step 3: Provide information to change the patient's perspective. Avoid arguing and focus on disease prevention.

“Side effects are a possible risk with any pharmaceutical you introduce to your body, such as medications and vaccines. It is not guaranteed that you will experience side effects. The side effects for the COVID-19 vaccine usually last about 1-3 days after they start. However, having the side effects shows that your body is working hard to develop immunity to the virus. The side effects for this vaccine are flu-like symptoms such as fever, headache, body aches, chills, and fatigue. If you are experiencing side effects, you can take over the counter medication to help with your symptoms, such as Tylenol or Advil.

There have also been many stories about the vaccine. One of them being that we are injecting the virus into you. I have been following the safety of this vaccine as well as have studied how it’s made. This vaccine does not have the virus in it. It uses an MRNA technology that helps your body create antibodies that will also be able to respond to the coronavirus if you are exposed. I have treated many patients who got very sick from diseases we can prevent with vaccines. There are many complications with COVID-19. Can you tell me about some of the complications you’ve heard about?

Step 4: Make a personalized recommendation to schedule a vaccination appointment.

"I strongly believe in this important vaccine, which is why I got vaccinated and I recommend it to all my patients. I think you should schedule an appointment to receive it today. Having said that, this is a decision that only you can make. What do you think?

Tips for declination or delay:

1. Let the patient know you will offer it again at a later time.
2. Offer reading material or educational resources
3. Relax- you've done your best

Most people may be interested in getting vaccinated but may have questions.
A strong and confident vaccine recommendation works.
Try motivational interviewing techniques for vaccine hesitant patients.

Note. From Oliver, K. (2018). *Techniques and Talking Points to Address Vaccine Hesitancy*. https://www.health.ny.gov/commissioner/grand_rounds/vaccine_hesitancy/docs/oliver.pdf

Appendix H

Project: Statement of Determination and Non-Research Determination Form

Student Name: Bianca De La Piedra

Title of Project: Reducing Vaccine Hesitancy Among the Latinx Patients in La Clinica de la Raza

Brief Description of Project: Integrating education and outreach to increase vaccination rates among patients at La Clinica de la Raza

Data that Shows the Need for the Project
Only a 47% vaccination rate was achieved by La Clinica patients in the age group 65 years old and older. After speaking with stakeholders in the organization, education is lacking during patient calls to schedule COVID-19 vaccination appointments. As the eligibility tiers to get the COVID-19 vaccine begin to change, outreach efforts and education need to be adjusted to more effectively target the current eligible groups.

Aim Statement
We aim to improve the process of outreach and education at La Clinica de la Raza Transit Village in order to increase COVID-19 vaccination rates amongst eligible groups.
The process begins with assessment of the 5 Ps. The process ends with increased patient vaccination rates. By working on the process, we expect to determine motivational factors for receiving or denying the vaccine at the La Clinica site, implement patient education to be provided by staff during patient calls to schedule vaccination appointments, and normalize the vaccine with improving outreach efforts. It is important
to work on this now because La Clinica de la Raza has a patient population that is largely Latinx, undocumented, individuals with chronic illnesses, and low-income
who are also disproportionately affected by the virus. We want to encourage patients
to receive the vaccine as soon as possible to prevent the spread of COVID-19.

Description of Intervention(s) Improve patient education during patient calls by generating a script or workflow for staff and normalize vaccine with outreach efforts appropriate for the clinic population

Desired Change in Practice Enable staff to answer patient questions about the vaccine and to dispel myths about the vaccine to encourage vaccine uptake; improve communication between vaccine hesitant patients and staff through implementation of motivational interviewing techniques during patient outreach calls; standardized and coordinated outreach process with proper documentation.

Outcome measurement(s) Vaccination rates before and after intervention will be compared.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.hhs.gov/ohrp/categories/1569)

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	x	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	x	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	x	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	x	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	x	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	x	

The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	x	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	x	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: "*This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	x	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print):

Bianca De La Piedra

Signature of Student: Bianca De La Piedra **DATE** 2/25/2021

SUPERVISING FACULTY MEMBER NAME (Please print): Vanessa Chicas

Signature of Supervising Faculty Member

_____DATE_____