DOES PROVIDING COVID-19 EDUCATION TO JAIL STAFF AND INMATES INCREASE
KNOWLEDGE AND WILLINGNESS TO VACCINATE?

A Doctor of Nursing Practice Project Report

by

SHANNON ELIZABETH BOYD

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MS, Hardin-Simmons University, 2013

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This Doctor of Nursing Practice Project Report meets the standards for scope and quality of
Texas A&M University-Corpus Christi and is hereby approved.

Tammy McGarity, DNP, RN, NEA-BC
Chair

Cathy White, MSN, JD
Committee Member

Robin Carstensen, PhD
Graduate Faculty Representative

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ABSTRACT

Jail inmates and staff have a higher incidence of COVID-19 infection and related complications, including death, yet are less likely to vaccinate against COVID-19, as recommended by The Centers for Disease Control and Prevention. The purpose of this quality improvement project was to determine if providing an educational activity on COVID-19 and vaccine safety and efficacy in a local county jail could increase COVID-19 vaccine knowledge and willingness to vaccinate in local jail inmates and staff. A pre-test and post-test design was used to assess effectiveness of the educational activity. A paired sample t-test revealed an increase in vaccine knowledge among inmates of $M = 2.95$, $SD = 1.29$ to $M = 3.89$, $SD = 0.73$ and staff from $M = 3.51$, $SD = 0.73$ to $M = 3.87$, $SD = 0.64$. Survey responses revealed an increase in COVID-19 knowledge of 24.69% among inmates, and staff 9.26%. There was also an increase in vaccine willingness among inmates based on $M=1.87$, SD 1.46 to $M=1.93$, SD 1.49 and staff from $M=1.42$, SD 0.67 to $M=1.67$, SD 1.30. Survey responses revealed an increase of 8.33% in COVID-19 willingness to vaccinate among staff, however, failed to show an increase among jail inmates. The educational activity was viewed 41 times among inmates and staff. This provides insight that educational activities can be beneficial to promote health and that underserved populations are willing to learn more if given the opportunity. This project also has the potential to extend education beyond COVID-19 vaccines to include preventative care to prevent infectious diseases and manage acute and chronic conditions based on evidence-based practices that can increase adherence to treatment in the underserved populations.

DEDICATION

I dedicate this accomplishment to my husband, Billy, whose unwavering love, support, and encouragement got me here! And to my parents, Dave and Audrey, and my grandma, Elaine, who stood by me during the difficult days and cheered me on, I applaud you all. We did it!

ACKNOWLEDGEMENTS

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1. INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) infection incidence rate remains consistently higher in the prison population (30,780/100,000) compared to the United States (U.S.) population (9,350/100,00) as does the mortality rate (199/100,000 and 80/100,000 respectively) (Marquez et al., 2021). Inmates are also 4-5 times more likely to be infected and three times as likely to die from COVID-19 (Strodel et al., 2021). With the weekly turnover rate at 50% among Texas jails (Minton & Zeng, 2021) the risk of exposure increases within the jail and extends into the community. Additionally, inmates in a jail setting have a higher likelihood of at least one chronic condition than the general population (Bureau of Justice Statistics, 2016) and chronic conditions are theorized to contribute to increased rates of COVID-19 infections and/or death (Brownson et al., 2021). The fully vaccinated rate amongst Texas state prison inmates is at 42% (Widra, 2021) compared to 64% of the Texas general population (Texas Human and Health Services, 2022) and 65% of the U.S. population (USA Facts, 2022).

The vaccination rate among Texas Department of Criminal Justice (TDCJ) staff is 47% (Jones et al., 2022), compared to 65% of the general population (USA Facts, 2022). One study among U.S. prisons showed that the mean COVID-19 infection rate among prison staff was 205 per 1000 compared to 72 per 1000 of the general population (Notwotny et al., 2021). According to TDCJ, Texas prison staff death rates related to COVID-19 are more than three times the national average for U.S. prison agencies (Jones et al., 2022). Understanding why COVID-19 vaccination rates are lower in the jail inmate and staff population, who are at a higher risk of developing COVID-19 infection and related severe disease/death, is vital to promoting vaccination and mitigating the effects of COVID-19 infection in these populations.

Background

Social determinants of inmates include lower educational attainment (Couloute, 2018), less income (Jones & Sawyer, 2019), and those with lower education and income are less likely to vaccinate against COVID-19 (Basta et al., 2021). Inmates also have poorer health outcomes (Brownson et al., 2021). Providing targeted services through education that address social determinants of inmates can promote preventative COVID-19 vaccination and decrease COVID-19 related complications.

The COVID-19 vaccines have a 94-95% efficacy rate (Butsch et al., 2021; Polack et al., 2021), are safe (Centers for Disease Control and Prevention [CDC], 2022c), and free of charge (CDC, 2022b). Unvaccinated Americans have a 2.8-3.2 times greater risk of hospitalization and a 5-14 times greater risk of death related to COVID-19 than vaccinated Americans (CDC, 2022d; CDC, 2022e). Additionally, vaccinations against COVID-19 have prevented over 10 million hospitalizations and one million deaths (Stephenson, 2021). It is estimated that U.S. hospitalizations from COVID-19 infection in unvaccinated persons have an average cost of at least $20,000 per hospitalization (Amin & Cox, 2021). This Quality Improvement (QI) project followed the CDC (2022a) and World Health Organization's (2022) recommended guidelines on COVID-19 vaccination series to persons over five years of age.

Review of Literature

To support the need to of this QI project, a literature review was conducted. A cohort study surveying 28,819 Canadian Longitudinal Study on Aging participants used a questionnaire and found that persons with lower educational attainment and household income of less than $20,000 are less willing to vaccinate against COVID-19 (Basta et al., 2021), and inmates are less likely to have a high school diploma (Couloute, 2018) and more likely to live in poverty (Jones

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& Sawyer, 2019). Furthermore, a qualitative research study included phone interviews of 25 jailed women and revealed that only 20% were willing to vaccinate with the top two refusal reasons given were 1.) vaccine development in too short of time and 2.) side effects concerns (Geana et al., 2021).

A literature review was also conducted to support the intervention of the QI project. A cohort study using an online survey found that 59% of those incarcerated did not want the COVID-19 vaccine; however, 33% were receptive to learning more about it (Khorasani et al., 2021). In one cross-sectional survey of 2,564 locally jailed inmates, the primary reasons for not vaccinating against COVID-19 were concerns about side effects (60%) and efficacy (48%), followed by the need for the vaccine (23%), and costs (4%) (Liu et al., 2022). A randomized-controlled study on COVID-19 efficacy by Polack et al. (2020) found the COVID-19 Pfizer vaccine had a 95% efficacy rate in persons over 16 years of age. Finally, to prevent COVID-19 infection or severe disease and death, the CDC (2022a) recommends COVID-19 vaccination for all persons over five years of age.

Elwy et al. (2021) conducted a qualitative project on vaccine hesitancy in the U.S. Veteran's Affairs healthcare system in semi-structured interviews of 31 employees and 27 Veterans. The study supported that differences in wording can result in more positive perceptions of the COVID-19 vaccine. Additionally, the project looked at COVID-19 hesitancy influential factors, including socioeconomic factors, vaccine development process, and knowledge of COVID-19 vaccines to recommend that communication on COVID-19 vaccines should be patient-centered by a trusted healthcare provider and focus on the benefits to the patient, family, and society (Elwy et al., 2021).

Problem Description in the Setting

The QI project's setting was a local county jail where there were no clinical practice guidelines for offering the COVID-19 vaccine. There were also no regularly scheduled vaccine events in this setting. The jail houses up to 804 inmates at any given time, many of whom remained primarily unvaccinated against COVID-19 despite being at a higher risk of developing COVID-19 and related complications. Using a retrospective chart review, data on hospitalized inmates from this jail with COVID-19 from June 2020-December 2020 found that 11 unvaccinated inmates were hospitalized with COVID-19, one succumbing to COVID-19-related complications. The costs to the county were an average of $7,279 per hospitalization.

For jail staff, the number of those vaccinated was unclear. The county jail did not offer the COVID-19 vaccine or inquire about vaccine status of jail staff. From January 1, 2021, to September 28, 2021, the number of missed workdays among 50 jail staff correctional officers was a total of 2,260 hours, equal to 282.50 days. For the 11 inmates hospitalized with COVID-19, 24-hour correctional officer coverage had to be provided, and with short staffing among correctional officers, the local county jail had to use outside resources to cover hospital shifts as well as provide extra shifts (overtime) to correctional officers. The county costs significantly increased due to missed workdays, overtime pay, and payroll for additional outsourced staff that was directly related to COVID-19 infections.

Data on COVID-19 vaccination events were gathered from the local health department and revealed that three vaccination events were scheduled by the local county jail from March 2021-August 2021. The local health department only provided the vaccination events when contacted by the local jail, for a total of three times during the pandemic. During those events,

13% of inmates, or 259 in total, received one dose of the COVID-19 vaccine when it was offered.

This QI project involved providing an educational activity to jail inmates and staff on COVID-19 and vaccine safety and efficacy to increase their COVID-19 vaccine knowledge and willingness to vaccinate. The socioeconomic factors were considered when the educational activity was developed that allowed for the feasibility of the project's success. The educational activity was developed on a 7th grade reading level, with read aloud accessibility for those with reading limitations. The educational activity was provided in both English and Spanish. To further aid in the success of the project, flyers were posted on cell walls in the general population cells for inmates. For inmates, when initiating log on for tablet access a banner popped up to remind them of the project and how to access it. Also, a verbal reminder was given on one occasion three weeks from start date to the general population cells. For jail staff, flyers were posted in break rooms and verbal reminders were given to staff sergeants who promoted the project to the jail staff at the start of the project and again three weeks later.

Project Purpose and Aims

The purpose of this project was to determine if providing an educational activity on COVID-19 and vaccine safety and efficacy in a local county jail increased vaccine knowledge and willingness to vaccinate in jail inmates and staff. The clinical question that guided this QI project was: In jail inmates and staff (P) does participation in an educational activity (I) increase COVID-19 vaccine knowledge and willingness to vaccinate (O) over twelve weeks (T)?

The first aim was to increase COVID-19 vaccine knowledge in jail inmates and staff by 20% of the baseline. The jail inmates and staff were given a pre-test survey on COVID-19 vaccine perceptions followed by an educational activity on COVID-19 and vaccine safety and

efficacy and ended with a post-test survey. The pre-test and post-test scores were compared to assess change in COVID-19 knowledge among participants.

The second aim of the project was to increase COVID-19 vaccine willingness among jail inmates and staff by 20% of the baseline. The jail inmates and staff were provided a pre-test survey on COVID-19 vaccine perceptions, followed by an educational activity on COVID-19 and vaccine safety and efficacy, and ended with a post-test survey. The pre-test and post-test scores were compared to assess change in COVID-19 vaccine willingness among participants.

This project aligned with the American Association of Colleges of Nurses (2006) Doctor of Nursing (DNP) Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health by promoting preventative vaccination through education in the jail inmate and staff population. This project also aligned with the National Organization of Nurse Practitioners Faculties (2017) quality competency Scientific Foundation Competencies by translating research into practice through offering education on COVID-19 and vaccines to increase knowledge and vaccine willingness.

Guiding Frameworks

Roger's Diffusion of Innovation Theory (DOI) is a conceptual framework that focuses on the key concept that knowledge is produced when a person is exposed to and learns about an existing innovation, followed by persuasion to form a view on the innovation based on perceived attributes, then involving the person in an activity that would result in a decision, either adoption or rejection of that innovation (Rogers, 1962). The DOI model was intertwined with the theoretical framework of Pender's Health Promotion Model (HPM), a model whose major concept is described as the individual characteristics, experiences, and prior behaviors have both direct and indirect effects on health-promoting behaviors (Pender et al., 1988). See Figure 1. The

participants were exposed to the educational activity, an element of the DOI model (Rogers, 1962). It was provided in both English and Spanish and delivered in a professional, trusting tone to motivate and persuade the participants, following both Roger's DOI model (Rogers, 1962) and Pender's HPM (Pender et al., 1988). The participants then formed a view on the educational activity, whether to adopt or reject, an element in Roger's DOI framework (Rogers, 1962). This tied in with the goals of Pender's HPM (Pender et al., 1988) health-promoting behaviors by increasing COVID-19 vaccine knowledge and willingness to vaccine.

Figure 1

Conceptual and Theoretical Frameworks

KNOWLEDGE

Roger's DOI   Pender's HPM

2. METHODS

Ethical Considerations

This project plan was reviewed by the Texas A&M University-Corpus Christi Institutional Review Board (IRB) for expedited category seven classification and received a determination of approval and permission to proceed (see Appendix A). This project did not collect Personal Health Information (PHI). The Health Insurance Portability and Accountability Act (HIPAA) confidentiality agreement from the facility is in place (see Appendix B). The chief jail administrator provided a letter of support (see Appendix C). There is no conflict of interest. There were no incentives or rewards offered for participation.

Potential inmate participants initiated their involvement by informed consent provided remotely by tablet, and tablet use did not single out the individuals that wished to participate in the study as tablets can be used for other reasons. All participants were reminded that they could skip any questions they did not wish to answer for any reason without repercussions and could quit at any time. Participation in the project was anonymous and no identifiable information was collected about those who chose to participate.

Additionally, data was collected using the University supplied Qualtrics (duo-authenticated and password-protected) account. Data was aggregated and exported for statistical analysis. All data was stored on a password-protected computer and only the study personnel had access.

Project Design

The focus of this QI project was to deliver an educational activity intervention to jail inmates and staff over aged 18 to increase COVID-19 vaccine knowledge and willingness to vaccinate following evidence-based clinical guidelines. The costs of this project were $0. The

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link for inmates to participate was provided through tablets already owned and operated by the local county jail and for staff the link was provided by work email. The staff that assisted in screening and recruitment of participants was voluntarily done on their normal shift and no additional costs were incurred. The flyers to recruit participants were posted by me and required no additional staff.

The local jail organization was supportive of the project with the prospect of empowering staff and inmates with COVID-19 vaccine knowledge to increase vaccination to promote health that can decrease costs and staffing shortages to the organization. A weakness to the project was lack of participation and to mitigate this, flyers were posted to staff break rooms and general population cells promoting the project. Additionally, verbal reminders were given to staff at the start of the project and three weeks later, and for inmates at three weeks after implementation.

Social determinants of inmates were also a weakness of this project. To mitigate this, the educational activity intervention was developed on a 7th grade reading level with read aloud accessibility and delivered in a trusting, professional tone. It was also provided in both English and Spanish. The method chosen for delivery of the educational activity intervention was a PowerPoint (PPT) video that was provided to staff by a link emailed to them and for inmates a link on tablets, see Appendix D. This method was chosen to reach a wider audience of inmates given that the jail houses up to 804 inmates at any given time and individual or group sessions were not feasible given staffing shortages.

Intervention

Prior to project development, meetings with jail administration were held to discuss the need for the project and how it would be delivered to inmates and staff. It was decided the best method of delivery to capture as many inmates and staff as possible was through a link via

tablets for inmates and email for staff. Inmates have limited internet access which necessitated the need for collaboration with the jail's Information Technology (IT) department, to discuss how to implement the project for inmates, and this was completed through phone calls and emails as the jail IT work remotely. Permission was then received to proceed with the project.

This QI project used the COVID-19 vaccine guidelines set forth by the CDC (2022a) and WHO (2022) to increase COVID-19 vaccine knowledge and willingness to vaccinate in jail inmates and staff. First was the development of a PPT COVID-19 educational video intervention on COVID-19 and vaccine safety and efficacy. This was proceeded by the development of a pre-test and post-test survey to evaluate effectiveness of the intervention. The pre-test and post-test surveys were developed in Qualtrics software using the Arizona CoVHORT survey (University of Arizona, n.d.). This was followed by an IRB application submission, and permission was granted to proceed with the project. Also, a project proposal presentation with committee members was completed and the project was granted permission for implementation.

Participants included jail inmates and staff who met the inclusion criteria. Inclusion criteria included: 1. employed or inmate at local county jail during the DNP project and 2. at least 18 years of age. Exclusion criteria included: 1. primary language other than English or Spanish and 2. impaired decision-making capacity. The sample size for the project was predicted to be 50 participants. The maximum sample size was 115 participants, 15% of approximately 600 inmates incarcerated at the time of the project's implementation, and 25% of up to 100 jail staff. There were no rewards or incentives offered for participation.

To implement the project required obtaining jail staff emails from the administrative assistant. For jail staff, the project was implemented February 1, 2023, through a link that was emailed. The link contained the pre-test survey that proceeded to the PPT educational video

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intervention on COVID-19 and vaccine safety and efficacy, followed by the post-test survey. For

inmates, implementation was delayed due to limited internet access that had to be rectified by

working with jail IT. This resulted in separating out the project into three links, the pre-test

survey, the PPT educational video intervention, and the post-test survey. The inmates were

granted access to the project via tablet access on February 16, 2023. Project timeline is presented

in Table 1.

Table 1

Project Timeline

Date	Plan	Action	Attendees
06/2022-10/2022	Evidence Collection & Assessment	Literature Review	Self
9/2022-10/2022	DNP Proposal Development	Develop Proposal	Self, Chair
10/23/2022	IRB Proposal Submission	Apply for IRB Review	Self, Chair
11/18/2022	Project Proposal	Proposal Defense	Self, Chair, content expert, GFR
11/01/2022	Organizational Assessment Data Collection	Organizational Assessment Analysis	Self, Jail Chief, Captain
02/01/2023-02/16/2023	Project Implementation	Emailed link to staff, tablets for inmates	Self
02/22/2023-03/09/2023	3 Week Data Collection	Qualtrics Data Analysis Review	Self
03/15/2023-03/30/2023	6 Week Data Collection	Qualtrics Data Analysis Review	Self
04/05/2023-04/20/2023	9 Week Data Collection	Qualtrics Data Analysis Review	Self
04/26/2023-05/11/2023	12 Week Data Collection	Qualtrics Data Analysis Review	Self

Date	Plan	Action	Attendees
05/2023-06/2023	Data Analysis	Intellectus Software Analysis	Self, Chair
07/2023	Project Evaluation	Project Defense	Self, Chair, Content Expert, GFR
08/2023	Dissemination of Results	TXDNP Conference	Attendees of conference

Data Collection

The demographics, pre-test and post-test surveys, and educational activity were

embedded into a link saved as a PDF file and transferred onto tablet devices, readily available to

the general population of inmates in the local jail setting. Demographic information on age, race,

gender, education, and income level was collected at the project's onset. The pre-test and post-

test surveys were collected after the completion of the educational activity. Jail staff used the

same application received through email. Responses were collected at the three-week, six-week,

nine-week, and twelve-week time points. The data collection tool that used for this project was

modified from the Vaccine Hesitancy Survey (Habila et al., 2022). This validated quantitative

survey was developed by the Arizona CoVHORT (University of Arizona, n.d.) and approved for

use for this project, see Appendix E.

Measurement Tools

The measurement tool consisted of a 10-question survey from the Arizona CoVHORT

survey (University of Arizona, n.d.) on COVID-19 vaccine perceptions and beliefs (Habila et al.,

2022) given before and after the educational activity. This tool was assessed for reliability and

validity using the Rasch analysis, a psychometric analytic method that analyzed responses to the

vaccine questionnaire using a rating scale, and Cronbach's alpha which was used to measure

item reliability (Habila et al., 2022). The correlation coefficient for the questions ranged from

0.25 to 0.75, above the acceptable level of 0.20 (Habila et al., 2022) and was included in this project. Two additional questions were included in this project to 1. address vaccine status and 2. address vaccine willingness. Both questions were retrieved and modified from the Arizona CoVHORT survey (University of Arizona, n.d.).

Data Analysis

The demographic data included participants' gender, race/ethnicity, age, education, and income. The data was analyzed for descriptive statistics, and variables were presented primarily as a frequency (percentage). The analysis method used for the first aim, increasing COVID-19 vaccine knowledge among jail inmates and staff by an educational activity (intervention), was a paired sample t-test to assess the change between two groups (pre/post-test design). The purpose of the pre-test and post-test design was to gain baseline COVID-19 vaccine knowledge of participants using the Arizona CoVHORT survey (University of Arizona, n.d.). Those scores were then compared to the post-intervention scores, using the Arizona CoVHORT survey. The analysis method used for aim two, increasing COVID-19 vaccine willingness by an educational activity (intervention), was a paired sample t-test to assess the change between two groups (pre/post-test design). The purpose of the pre-test and post-test design was to gain baseline COVID-19 vaccine willingness of the participants using the Arizona CoVHORT survey (University of Arizona, n.d.). Those scores were then compared to the post-intervention scores, also using the Arizona CoVHORT survey. The descriptive and inferential statistics were configured with Intellectus Software (2022).

3. RESULTS

Prior to this QI project implementation, there were no clinical practice guidelines for offering the COVID-19 vaccine in the project setting, a local county jail. Three vaccine events had been scheduled at the county jail between March-August 2021 with only 13% of inmates receiving a COVID-19 vaccine dose. In addition, the county jail did not offer the COVID-19 vaccine or inquire about vaccine status of jail staff. The project was designed to be delivered electronically given the setting. The survey was available by a link on tablets for inmates and email for jail staff. The link forwarded participants to a Qualtrics pretest survey on COVID-19 vaccine knowledge, followed by an educational video on COVID-19 and vaccine safety and efficacy, and ended with a post-test survey.

The project for jail staff was implemented on February 1, 2023, and for inmates on February 16, 2023. As the local county jail nurse practitioner my working relationship with the correctional officers allowed for a smooth project implementation. The supervising correctional officers were vital in promoting the project among staff. They invited correctional officers to participate in the project by posting flyers in break rooms and by word of mouth. The correctional officers were also instrumental in the recruitment of inmate participation by posting flyers in general population cells. To further boost participation, jail IT created a banner that invited inmates to participate in the project that appeared each time an inmate logged into a tablet.

One issue encountered during the project implementation stage was the challenge of providing the link to inmates given their limited internet access. It was anticipated that it would take a couple of weeks to implement once jail IT received the survey. After two weeks passed, it was decided to go forward with jail staff implementation while awaiting on approval for inmates

by jail IT. It took two more weeks and many calls with jail IT and working closely with the local

jail lieutenant to implement the project on the tablets for inmates. Given the internet restrictions,

the link had to be separated into three separate links. The first link was to the pre-test, the second

the educational video, and the third post-test. Each was labeled Step 1, Step 2, and Step 3

consecutively.

Another issue encountered was the slow process of participation among inmates. There

were approximately 600 inmates incarcerated at the local county jail when the project was

implemented. After low participation at week three, an in-person meeting with two sergeants and

the lieutenant resulted in promoting the project through face-to-face encounters with the inmates.

The sergeant and I went to eight general population cells to discuss the project with

approximately twenty inmates. The lieutenant promoted the project to the work crew inmates,

with whom he had a good relationship. The sergeants also helped by passing out the project's

written instructions individually to sixty inmates.

Descriptive and inferential statistics were used to compare and summarize data. The

sample size for jail inmates was 34. Of those, six chose English language, and four Spanish who

did not provide consent and were ineligible to proceed with the survey. The total response rate

was 24 (4% of the inmate population), 23 of whom chose English language, one Spanish. The

sample size for jail staff was 25, all of whom chose English language whereas two did not

provide consent and were ineligible to proceed to the survey. The total response rate was 23

participants (23% of jail staff). The most frequent answer on receiving at least one dose of the

COVID-19 vaccine was no for inmates ($n = 15$, 62.5%) and staff ($n = 12$, 52.17%), see Table 5.

See Tables 2, 3, and 4 for descriptive statistics.

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Table 2

Demographics Table Inmates

Variable	*n*	*%*
Gender		
Male	19	79.17
Female	4	16.67
Prefer not to say	1	4.17
Education		
Junior High School	3	12.50
High School Diploma	13	54.17
Bachelor's Degree	3	12.50
Prefer not to say	5	20.83
Income		
< $10,000	6	25.00
$10,000-$25,000	6	25.00
$25,000-$50,000	4	16.67
$50,000-$75,000	3	12.50
More than $75,000	2	8.33
Prefer not to say	3	12.50
Ethnicity		
White-Caucasian	12	50.00
Black-African American	2	8.33
Hispanic-Latino	7	29.17
Other	2	8.33
Prefer not to say	1	4.17
Age		
18-29	9	37.50
30-49	15	62.50

Note. Due to rounding errors, percentages may not equal 100%.

Table 3

Demographics Table Staff

Variable	*n*	*%*
Gender		
Male	15	65.22
Female	8	34.78
Education		
High School Diploma	18	78.26
Bachelor's Degree	4	17.39
Master's Degree or higher	1	4.35
Income		
$25,000-$50,000	9	39.13
$50,000-$75,000	3	13.04
More than $75,000	8	34.78
Prefer not to say	3	13.04
Ethnicity		
White-Caucasian	16	69.57
Hispanic-Latino	4	17.39
Black-African American	1	4.35
American Indian or Alaska Native	1	4.35
Prefer not to say	1	4.35
Age		
18-29	6	26.09
30-49	11	47.83
50-64	6	26.09

Note. Due to rounding errors, percentages may not equal 100%.

Table 4

COVID-19 Vaccination Status by Demographics

Variable	Vaccinated	Unvaccinated	Not Sure	Total
Staff Gender				
Male	8 (34.78%)	7 (30.43%)		15 (65.22%)
Female	3 (13.04%)	5 (21.74%)		8 (34.78%)
Total	11 (47.83%)	12 (52.17%)		23 (100.00%)
Inmate Gender				
Male	9 (37.50%)	9 (37.50%)	1 (4.17%)	19 (79.17%)
Female	0 (0.00%)	4 (16.67%)		4 (16.67%)
Prefer not to say	0 (0.00%)	1 (4.17%)		1 (4.17%)
Total	9 (37.50%)	14 (58.33%)	1 (4.17%)	24 (100.00%)
Staff Educational Level				
High School Diploma	10 (43.48%)	8 (34.78%)		18 (78.26%)
Bachelor's Degree	1 (4.35%)	3 (13.04%)		4 (17.39%)
Master's Degree or higher	0 (0.00%)	1 (4.35%)		1 (4.35%)
Total	11 (47.83%)	12 (52.17%)		23 (100.00%)
Inmate Educational Level				
Middle or Jr High School	1 (4.17%)	2 (8.33%)		3 (12.50%)
High School Diploma	5 (20.83%)	8 (33.33%)		13 (54.16%)
Bachelor's Degree	0 (0.00%)	3 (12.5%)		3 (12.5%)
Prefer not to say	3 (12.5%)	1 (4.17%)	1 (4.17%)	5 (20.84%)
Total	9 (37.50%)	14 (58.33%)	1 (4.17%)	24 (100.00%)
Staff Age				
18-29	2 (8.70%)	4 (17.39%)		6 (26.09%)
30-49	7 (30.43%)	4 (17.39%)		11 (47.83%)
50-64	2 (8.70%)	4 (17.39%)		6 (26.09%)
Missing	0 (0.00%)	0 (0.00%)		0 (0.00%)
Total	11 (47.83%)	12 (52.17%)		23 (100.00%)
Inmate Age				
18-29	5 (20.83%)	4 (16.67%)		9 (37.50%)
30-39	4 (16.67%)	10 (41.67%)	1 (4.17%)	15 (62.50%)

Variable	Vaccinated	Unvaccinated	Not Sure	Total
Total	9 (37.50%)	14 (58.33%)	1 (4.17%)	24 (100.00%)
Staff Ethnicity				
White-Caucasian	8 (34.78%)	8 (34.78%)		16 (69.57%)
Hispanic-Latino	2 (8.70%)	2 (8.70%)		4 (17.39%)
Black-African American	1 (4.35%)	0 (0.00%)		1 (4.35%)
American Indian/Native	0 (0.00%)	1 (4.35%)		1 (4.35%)
Prefer not to say	0 (0.00%)	1 (4.35%)		1 (4.35%)
Missing	0 (0.00%)	0 (0.00%)		0 (0.00%)
Total	11 (47.83%)	12 (52.17%)		23 (100.00%)
Inmate Ethnicity				
White-Caucasian	5 (20.83%)	8 (34.78%)		13 (54.16%)
Hispanic-Latino	2 (8.33%)	5 (20.83%)		7 (29.70%)
Black-African American	1 (4.17%)	0 (0.00%)	1 (4.17%)	2 (8.33%)
Other	1 (4.17%)	0 (0.00%)		1 (4.17%)
Prefer not to say	0 (0.00%)	1 (4.17%)		1 (4.17%)
Total	9 (37.50%)	14 (58.33%)	1 (4.17%)	24 (100.00%)
Staff Income Annually				
$25,000-$50,000	4 (17.39%)	5 (21.74%)		9 (39.13%)
$50,000-$75,000	1 (4.35%)	2 (8.70%)		3 (13.04%)
>$75,0000	5 (21.74%)	3 (13.04%)		8 (34.78%)
Prefer not to say	1 (4.35%)	2 (8.70%)		3 (13.04%)
Missing	0 (0.00%)	0 (0.00%)		0 (0.00%)
Total	11 (47.83%)	12 (52.17%)		23 (100.00%)
Inmate Income Annually				
<$10,000	3 (12.50%)	2 (8.33%)		
$10,000-$25,000	2 (8.33%)	2 (8.33%)		
$25,000-$50,000	2 (8.33%)	4 (16.67%)		
$50,000-$75,000	1 (4.17%)	2 (8.33%)		
>$75,000	0 (0.00%)	2 (8.33%)		
Prefer not to say	1 (4.17%)	2 (8.33%)		
Total	9 (37.50%)	14 (58.33%)		24 (100.00%)

Note. Due to rounding errors, percentages may not equal 100%.

Table 5

COVID-19 Vaccination Status of Jail Inmates and Staff

Variable	*n*	*%*
COVID-19 Vaccination Status		
Staff		
No	12	52.17
Yes	11	47.83
COVID-19 Vaccination Status		
No	14	60.87
Yes	8	34.78
Not Sure	1	4.35

Note. Due to rounding errors, percentages may not equal 100%.

Aim 1

Aim 1 was to increase COVID-19 vaccine knowledge among jail inmates and staff by 20% of the baseline. The increase in inmate vaccine knowledge from post-test to pre-test responses was 24.69%, satisfying the aim. The increase in staff vaccine knowledge from post-test to pre-test responses was 9.26%, not meeting the aim threshold. The percentages may not be accurate given that the answer choices ranged from completely disagree, somewhat disagree, neither agree nor disagree to somewhat agree, and completely agree for each survey question. Neither agree nor disagree answer choice was neutral and not used in calculating percentages.

The results of the inmate COVID-19 knowledge survey two-tailed paired samples *t*-test were significant based on an alpha value of .05, $t(14) = 2.61$, $p = .020$, indicating the null hypothesis could be rejected. This finding suggests the difference in the mean of COVID-19 vaccine knowledge post-test scores and the COVID-19 vaccine knowledge pre-test scores was significantly different from zero. The mean of COVID-19 vaccine knowledge post-test scores

20

was significantly lower ($M = 2.95$, $SD = 1.29$) than the mean of COVID-19 vaccine knowledge pre-test scores ($M = 3.89$, $SD = 0.73$). The results are presented in Table 6 and graphed in Figure 2.

The results of the staff COVID-19 knowledge survey two-tailed paired sample *t*-test were significant based on an alpha value of .05, $t(11) = 3.65$, $p = .004$, indicating the null hypothesis could be rejected. This finding suggests the difference in the mean of COVID-19 vaccine knowledge post-test scores and the mean of COVID-19 vaccine knowledge pre-test scores was significantly different from zero. The mean of COVID-19 vaccine knowledge post-test scores ($M = 3.51$, $SD = 0.73$) was significantly lower than the mean of COVID-19 vaccine knowledge pre-test scores ($M = 3.87$, $SD = 0.64$). The results are presented in Table 6 and graphed in Figure 2.

A Cronbach alpha coefficient was calculated for the inmate and staff knowledge *t*-test scale, consisting of COVID-19 vaccine knowledge pre-test scores and COVID-19 vaccine knowledge post-test scores. The Cronbach's alpha coefficient was evaluated using the guidelines suggested by George and Mallery (2018) where > .9 excellent, > .8 good, > .7 acceptable, > .6 questionable, > .5 poor, and ≤ .5 unacceptable. The items for the knowledge *t*-test had a Cronbach's alpha coefficient of 0.90 for inmates and 0.92 for staff, indicating excellent reliability.

Aim 2

Aim 2 was to increase COVID-19 vaccine willingness by 20% of the baseline after an educational activity among jail inmates and staff. The increase in vaccine willingness from pre-test to post-test responses for inmates was 0% and staff 8.33%, not meeting the aim for either population. The percentages may not be accurate given the answer choices ranged from completely disagree, somewhat disagree, neither agree nor disagree to somewhat agree, and

completely agree for each survey question. Neither agree nor disagree answer choice was neutral and not used in calculating percentages.

A paired sample t-test was conducted to compare the inmates' vaccine willingness pre-test and post-test scores ($n = 15$). The results were not significant based on an alpha value of 0.05, $t(14) = -0.18$, $p = 0.861$ for the vaccine willingness pre-test scores ($M = 1.87$, $SD = 1.46$) and post-test scores ($M = 1.93$, $SD = 1.49$). A paired sample t-test was conducted to compare the vaccine willingness pre-test and post-test scores of staff ($n = 11$). The results were not significant based on an alpha value of 0.05, $t(11) = -1.15$, $p = 0.275$ of the vaccine willingness pre-test scores ($M = 1.42$, $SD = 0.67$) and post-test scores ($M = 1.67$, $SD = 1.30$). The results are presented in Table 6 and graphed in Figure 3.

Table 6

COVID-19 Vaccine Knowledge and Willingness to Vaccinate Scores

Variable	Participants	Mean Pretest Scores	Pretest *SD*	Mean Posttest Scores	Posttest *SD*	*p*-value
COVID-19 Knowledge Survey						
Inmates	$n = 15$	3.89	0.73	2.95	1.29	0.020
Staff	$n = 11$	3.87	0.64	3.51	0.73	0.004
COVID-19 Vaccine Willingness Survey						
Inmates	$n = 15$	1.87	1.93	1.93	1.49	0.861
Staff	$n = 11$	1.42	0.67	1.67	1.30	0.275

Figure 2

Jail Inmates and Staff Vaccine Knowledge Scores

Jail Inmates and Staff Vaccine Knowledge Scores
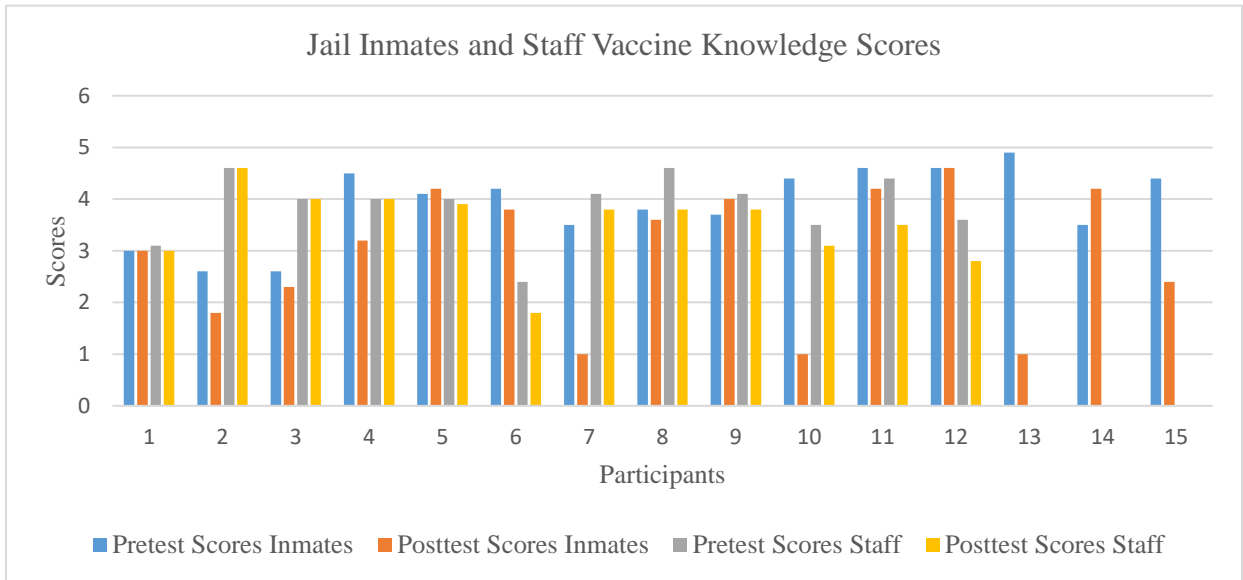
Figure 3

Jail Inmates and Staff Willingness to Vaccinate Scores

Jail Inmates and Staff Willingness to Vaccinate Scores
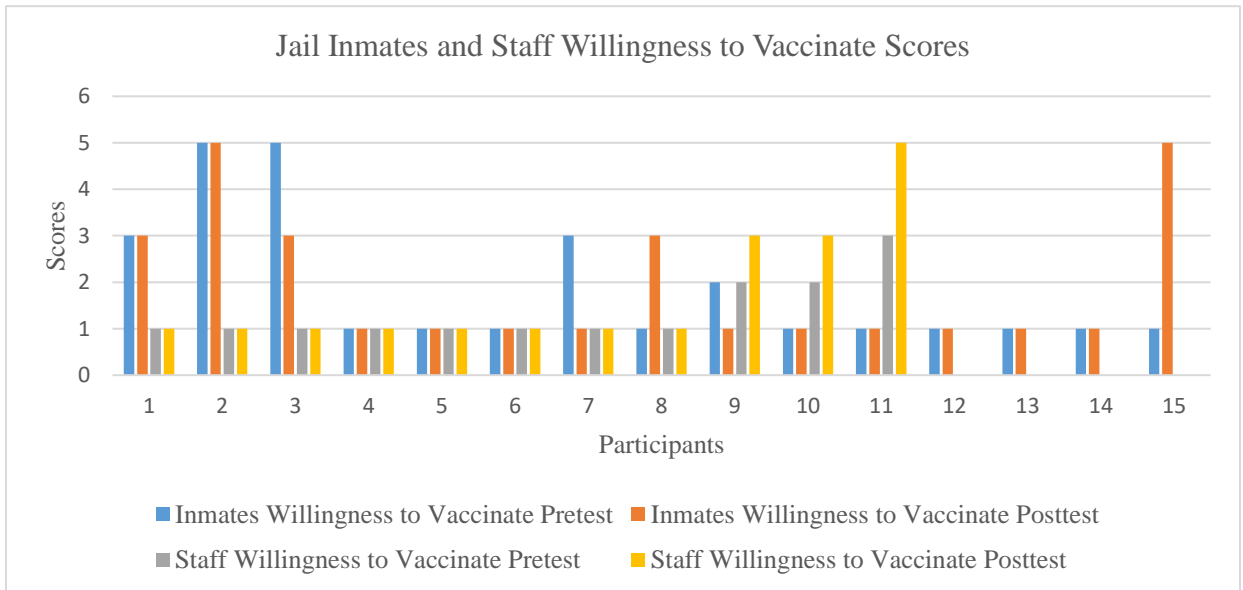
4. DISCUSSION

Limitations

The inmate population have a lower educational attainment that may have affected the accuracy of results. With the novelty of COVID-19, locating a valid and reliable survey that was for the pre-test and post-test design of this project was challenging. The reading level of the survey was on a 7th-grade level and may have been too difficult for the participants to comprehend. To mitigate this barrier, accommodations were made available to address social determinants and language barriers. Future studies should include clear answer choices and fewer options. The lack of inmate participation (4%) was also a limitation and results may be underscored. Several prompts were given to increase participation among inmates, including invitation flyers on cell walls, written instruction hand-outs, verbal invitations, and a banner prompt on tablets when logging on. Most participants among both populations were White/Caucasian and results may not be generalized to racial and ethnic minorities.

With ever-changing information regarding COVID-19 vaccines, sustainability may be difficult to achieve given inmate mistrust in the government and healthcare providers. While the jail staff supported this project, the additional time devoted to inmate recruitment may also cause sustainability difficulties. Staying up to date on evidence and recommendations on COVID-19 vaccination and relaying the newest guidelines as they become available will aid in the project's sustainability.

Interpretation

The educational activity was developed following Pender's HPM framework that addressed social determinants of lower education and income that affect the target population's behavior (Pender et al., 1988). The educational activity reflected this by be being provided on a

7th-grade level, with accommodations for read-aloud to encompass those that cannot read and provided in English and Spanish. Following Roger's DOI framework (Rogers, 1962), the participants were exposed to the educational activity that was provided in a trusting, professional tone to promote trust, a component of Pender's HPM. The results of the pre-test and post-test survey revealed that a 7th grade reading level may have been too difficult for inmate comprehension, and this should be considered for future studies. This project showed promise that jail inmates and staff could be engaged in education that can result in decisions that promote health in in an underserved population using these frameworks for guidance.

There was no financial risk to the stakeholders as costs were $0 to implement the educational activity, and subsequent vaccination may result in cost savings in the thousands of dollars by mitigating the risk of hospitalizations related to COVID-19. Cost savings from less sick days taken off by staff related to COVID-19 and less staff needs for inmates quarantined, isolated, or hospitalized with COVID-19 complications can save the county additional thousands of dollars.

Conclusion

While aim 1 for staff was not met or aim 2 for both populations, there was an overall increase in COVID-19 vaccine knowledge among both populations and willingness to vaccinate following education among inmates and staff. This highlights the need for tailored educational activities in the jail setting, to promote health among inmates and staff alike. Efforts to address social determinants that influence inmates' decisions to participate in educational activities may increase sample size for future studies. Fostering trust in healthcare may also increase the sample size for future studies. As of July 2023, the weekly COVID-19-related deaths is at 1.1% and

hospital admissions at 6,198 in the U.S. (CDC, 2023) demonstrating that ongoing education should be a priority to promote health through vaccination.

Additionally, this project highlights a need for policy change in the local jail setting to include educating jail staff and inmates to positively impact the rate of preventative vaccination to mitigate COVID-19 symptoms and hospitalizations. This can also lead to decreased healthcare costs. Furthermore, a policy for employees and their families to promote COVID-19 vaccination would support more economical sustainability by less staff sick days, less hospitalizations, and less need for additional staff for quarantines.

This project can potentially spread into other contexts, such as implementing COVID-19 programs that bridge jails and local health departments that can connect inmates to subsequent vaccine dosing upon release. Advocating for policy change at the local, county, state, and national level to include county and city health departments may facilitate more incentive and accountability to implement and enforce policies at the local jail facilities. Policies can also benefit the families and communities those incarcerated will return to through education, support, and health promotion. This project also has the potential to extend education beyond COVID-19 vaccines to include preventative care to prevent infectious diseases and manage acute and chronic conditions based on evidence-based practices that can increase adherence to treatment in the underserved populations.

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APPENDIX A

IRB APPROVAL

Date: November 21, 2022
To: Tammy McGarity
CC: Marina Martinez, Michelle Eisenman, MSc, Shannon Boyd
From: Office of Research Compliance
Subject:IRB Approval for TAMU-CC-IRB-2022-0643

Dear Tammy McGarity, DNP,

On 11/21/2022, the Texas A&M University IRB - Corpus Christi Institutional Review Board reviewed the following submission:

Type of Review:	**Review Board Pre-Review Corrections Submission form**
Title of Study:	Does Providing COVID-19 Education to Jail Inmates and Staff Increase Knowledge and Willingness to Vaccinate?
Principal Investigator:	Tammy McGarity
IRB Number:	TAMU-CC-IRB-2022-0643
Submission Outcome:	Initial Approval
Risk Level:	Not Greater than Minimal Risk under 45 CFR 46 / 21 CFR 56
Approval Date:	11/21/2022
Expiration Date:	11/21/2023

Annual Review Due Date: 09/22/2023

Texas A&M University IRB - Corpus Christi Institutional Review Board has reviewed the above-referenced submission and has determined the project is approved on 11/21/2022. This submission was approved by the review process in accordance with the policies and procedures of the Human Research Protection Program under expedited category:

Expedited Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The IRB has approved this submission from 11/21/2022 to 11/21/2023. **You may proceed with this project.**

This approval corresponds with the versions of the application and attachments in the electronic system most recently approved as of the date of this letter.

A Reminder of Investigator Responsibilities: As principal investigator, you must ensure:

1. **Informed Consent: Ensure informed consent processes are followed** and information presented enables individuals to voluntarily decide whether to participate in research.
2. **Amendments:** This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. **Any planned changes require an amendment** to be submitted to the IRB to ensure that the research continues to meet the criteria for exemption. The Amendment must be approved before being implemented.
3. **Annual Checkin:** You are required to close the study or submit an annual check-in annually.
4. **Completion Report: Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted**.
5. **Records Retention: All research related records must be retained for three (3) years** beyond the completion date of the study in a secure location. At a minimum, these documents include the research protocol, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to participants, all correspondence to or from the IRB, and any other pertinent documents.
6. **Adverse Events:** Adverse events must be reported to the IRB immediately.
7. **Post-approval monitoring:** Requested materials for post-approval monitoring must be provided by the dates requested.

If you have any questions or concerns, please contact us at irb@tamucc.edu.
Sincerely,
Cari Loeffler, MA
Office of Research Compliance

Sent From:	Rebecca Ballard
Send To:	Tammy McGarity, DNP, Shannon Boyd, Michelle Eisenman, MSc, Marina Martinez, Tammy McGarity, DNP
IRB Number:	TAMU-CC-IRB-2022-0643
IRB Expiration:	
Protocol Alias:	COVID-19 Education 2.0

Title:	Does Providing COVID-19 Education to Jail Inmates and Staff Increase Knowledge and Willingness to Vaccinate?
Project Status:	Approved
Principal Investigator:	McGarity, Tammy, DNP
Message Content:	Dear Tammy McGarity, DNP, On April 14, 2023, the IRB approved revisions to Standard Operating Procedures 1300.01, Continuing Review and 1300.02, Requirements for Studies where Continuing Review is Not Required. The IRB voted to eliminate the annual check-in requirement for studies where continuing review is not required by federal regulations and implement an annual broadcast notification to remind Principal Investigators to update or close out active studies. On May 22, 2023, the Office of Research Compliance confirmed this study is impacted by the above policy change. Your study has been updated administratively to revise the IRIS settings to no longer require an annual check-in. **No further action is required on the part of the study team** to take advantage of this burden-reducing change. If you have any questions or concerns please contact us at **irb@tamucc.edu**. Sincerely, Rebecca Ballard, JD Office of Research Compliance

HIPPAA FORM

TAYLOR COUNTY
SHERIFF'S OFFICE
Ricky Bishop, Sheriff

Adult Detention Center
910 South 27ᵗʰ, Abilene, Texas 79602-6899
Telephone: 325-691-7422 Fax: 325-691-7459

Law Enforcement Center
450 Pecan Street, Abilene, Texas 79602-1692
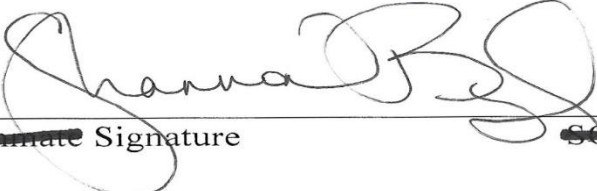Telephone: 325-674-1300 Fax: 325-672-8066

MEDICAL RELEASE FORM

~~Inmate~~ Name: __SHANNON BOYD__ ~~DOB~~: _____

By signing this form, I authorize the Taylor County Sheriff's Office to release confidential health information about me. I authorize the release of medical records, or a summary or narrative of my protected health information to the person listed below.

Release my protected health information to the following person:

Name: __SHANNON BOYD__

~~Inmate~~ Signature   ~~SO#~~   10/11/22 Date

"PRIDE IN WHO WE ARE, PROFESSIONAL IN WHAT WE DO"

APPENDIX C

LETTER OF SUPPORT

Taylor County Detention Center
910 S27th Street
Abilene, TX. 79602

September 15, 2022

Dr. Tammy McGarity
DNP Program Coordinator
College of Nursing and Health Sciences
Texas A&M University-Corpus Christi
6300 Ocean Drive Corpus Christi, TX. 78412

Dear Dr. McGarity:

The purpose of this letter is to provide Shannon Boyd, a Doctor of Nursing Practice student at Texas A&M University College of Nursing and Health Sciences, support in conducting a quality improvement project at Taylor County Detention Center. The project, Does Providing COVID19 Education to Jail Staff and Inmates Increase Knowledge and Vaccine Willingness, entails providing consenting jail staff and male inmates with an educational activity on COVID-19 and COVID-19 vaccine safety and efficacy via teleconferencing, email, and/or one-on-one face-to-face interviews. Demographic data, a pre-test, and a post-test will be obtained through a questionnaire via teleconferencing, email, and/or one-on-one face-to-face interviews.

The purpose of this project is to assess if an educational activity on COVID-19 and COVID-19 vaccine safety and efficacy increases jail staff and male inmates COVID-19 knowledge and vaccine willingness. Taylor County Detention Center was selected for this project because of its proximity to the student. Shannon Boyd is employed at this institution and has an interest in improving healthcare at this facility.

I, Tim Trawick, chief jail administrator at Taylor County Detention Center, do hereby fully support in the conduct of this quality improvement project, Does Providing COVID-19 Education to Jail Staff and Inmates Increase Knowledge and Vaccine Willingness?

Sincerely,

Tim Trawick, chief jail administrator

COVID-19 EDUCATIONAL PPT SLIDES

COVID-19 and Vaccines

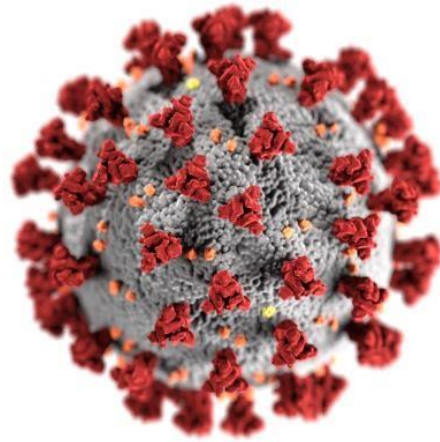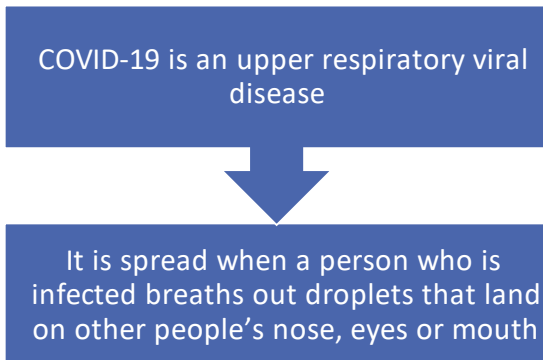Presented by Shannon Boyd, Nurse Practitioner, student at Texas A&M Corpus Christi
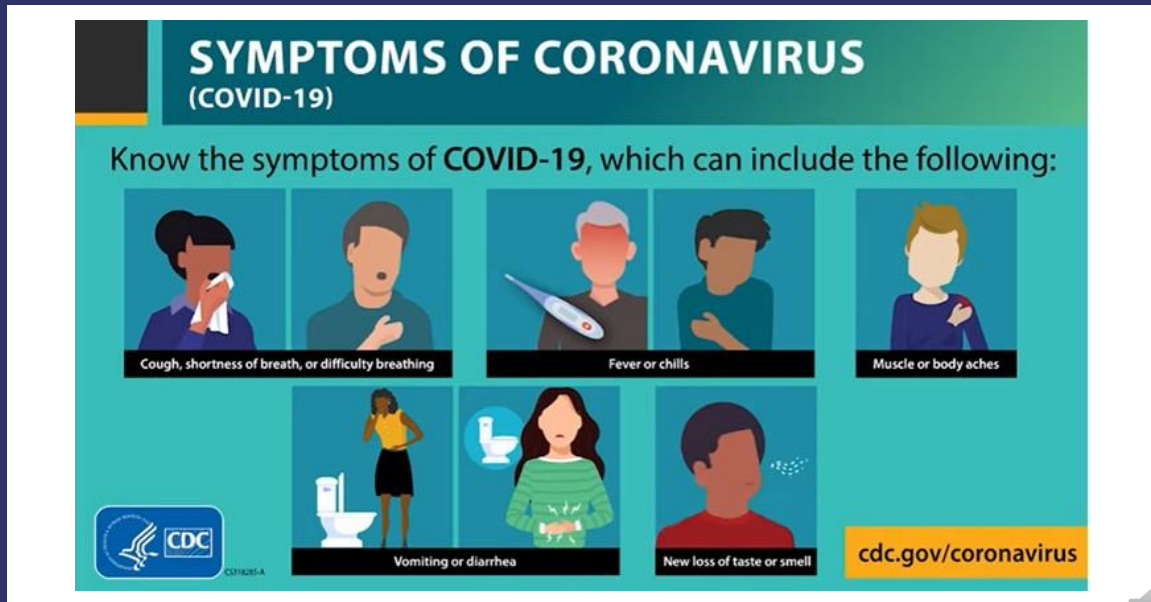
Figure 1: Coronavirus.
https://www.cdc.gov/media/subtopic/images.htm

What is COVID-19?

COVID-19 is an upper respiratory viral disease

It is spread when a person who is infected breaths out droplets that land on other people's nose, eyes or mouth

CDC, 2022g; Katella, 2022

Figure 2: Coughing.
https://www.mos.ru/city/projects/covid19/#rec179645027

Figure 3: Sneezing
https://freesvg.org/blowingnose

Why is COVID-19 a Big Deal?

- COVID-19 is a big deal because it is highly contagious

- There are more hospitalizations related to COVID-19 when compared to the Flu (CDC, 2022c)

- There is a higher death rate of COVID-19 (over 1 million deaths) compared to the Flu (CDC, 2022c)

- COVID-19 continues to mutate (change): OMICRON, DELTA, ALPHA, BETA (Katella, 2022)

- "Long COVID" COVID-19 symptoms that last months to years (Katella, 2022)

COVID-19 Guidance

Safety Precautions

Wash hands

Avoid being around sick people

Vaccinate

If you are exposed to COVID-19 monitor for symptoms and wear a mask around others for 10 days

What to Do If You have Symptoms of or Test Positive for COVID-19

Monitor for worsening symptoms
Treat symptoms
Rest

Avoid contact with other people (isolate) for at least 5 days if you are fever free for 24 hours without medication

Wear a mask when around others for 10 days from onset of symptoms

CDC, 2022g; Katella, 2022

COVID-19 Vaccines for Adults

- There are four approved or authorized COVID-19 vaccines in the United States
  - mRNA vaccines
    - Pfizer, Moderna
  - Protein subunit
    - Novavax
  - Viral vector vaccine
    - Johnson & Johnson
- Nearly all the ingredients in COVID-19 vaccines are ingredients found in many foods—fats, sugar, and salts
- There is no latex, metal, fetal tissue, or preservatives (mercury) in the vaccines

CDC, 2022b

Myth Busters

- **COVID-19 vaccines alter DNA**
  - mRNA does not enter the nucleus of our cells and cannot alter our DNA
- **The COVID-19 vaccine was developed too fast**
  - COVID-19 is a member of the coronavirus family, and has been studied for decades
- **Natural immunity (previous COVID19 infection) is better than a vaccine at preventing reinfection**
  - Safer to vaccinate and a more dependable way to boost immune system than being sick with COVID19
  - Vaccination can boost immune protection if you've had previous infection
  - 2 times more likely to get COVID19 again if not vaccinated compared to previous infection
  - COVID-19 vaccine is 5 times more effective of preventing hospitalization than previous COVID19 infection
- **COVID-19 vaccines contain a microchip**
  - Simply not true

CDC, 2022i

Pregnancy

COVID-19 Infection	COVID-19 Vaccines

• **More likely to have worse symptoms than someone who is not pregnant**
 	
• **Can cause pregnancy complications**
  • **Increased risk of premature birth**
  • **Increased risk of stillborn birth**
	• **Safe and effective**
	  • **No increased risk of miscarriage or pregnancy complications**
	  • **Decreased risk of hospitalizations**
	  • **Can help prevent stillborn births**
	• **Pass antibodies to baby, protecting them against COVID19**
	• **Recommended by medical organizations**
	  • **American College of Obstetricians and Gynecologists (ACOG)**

CDC, 2022e

Protecting the Community Through Vaccination

Germs like COVID-19 can travel quickly through a community and make a lot of people sick.

If enough people get sick, it can lead to an outbreak.

But when enough people are vaccinated, the germs can't travel as easily from person to person and the entire community is less likely to get the disease.

U.S. Department of Health and Human Services (2021)

Figure 8. Herd Immunity. https://www.who.int/newsroom/feature stories/detail/howdo-vaccines-work

mRNA COVID-19 Vaccine Schedule for Adults

Figure 9. COVID19 Vaccine Schedule.
file:///E:/covid19-immunization-schedule-ages6months-older.pdf

APPENDIX E

DATA COLLECTION FORM

COVID-19 Vaccine Survey

How much do you agree or disagree with the following statement:

1. Have you received at least one dose of the COVID-19 vaccine?
   a. Yes
   b. No
   c. Not sure

2. I am concerned about short-term side effects of the vaccine
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

3. I feel getting COVID-19 is less risky than the COVID-19 vaccines
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

4. I do not think the vaccine will last long enough to be worthwhile
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

5. My vaccination status will influence my employment or access to opportunities and resources
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

6. I believe the government information on COVID-19 vaccines is not reliable
   a. Completely disagree

b. Somewhat disagree
c. Neither agree nor disagree
d. Somewhat agree
e. Completely agree

7. I am worried the vaccines were made too fast to be safe
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

8. My social network will judge me negatively if I do not get the vaccine
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

9. I am worried about possible side effects from getting the vaccine
   a. Completely disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Completely agree

10. I am concerned about the safety of the vaccine
    a. Completely disagree
    b. Somewhat disagree
    c. Neither agree nor disagree
    d. Somewhat agree
    e. Completely agree

11. There are other things in the vaccine that will harm me
    a. Completely disagree
    b. Somewhat disagree
    c. Neither agree nor disagree
    d. Somewhat agree
    e. Completely agree

12. I am willing to receive the COVID-19 vaccine if it were offered to you?
    a. Completely disagree
    b. Somewhat disagree

c. Neither agree nor disagree
d. Somewhat agree
e. Completely agree