

Reduction of Vaping Incidence in the Military

Maj Sussan Goldsworthy and Capt Jeremy Cooper

Uniformed Services University of Health Sciences

Graduate School of Nursing

Dr. Regina Owen, Dr. Joseph G. Kelly

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Distribution A: Public Release.

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Sussan L. Goldsworthy, Doctor of Nurse Practice, RN, Maj, USAF
Psychiatric Mental Health Nurse Practitioner Program
Daniel K. Inouye Graduate School of Nursing
Uniformed Services University of the Health Sciences
09 April 2023

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Jeremy M. Cooper, Doctor of Nurse Practice, RN, Capt, USAF
Psychiatric Mental Health Nurse Practitioner Program
Daniel K. Inouye Graduate School of Nursing
Uniformed Services University of the Health Sciences
09 April 2023

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There is no financial relationship that exists between the speakers and *This is Quitting* or the Truth Campaign.

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Abstract

Project Title: Reduction of Vaping Incidence in the Military

Authors: Goldsworthy, S. L., & Cooper, J. M.

Background or Problem/Issue: The use of electronic cigarettes (e-cigarettes) among youth and young adults is currently a growing global health concern. In 2015, the Defense Health Agency and Department of Defense surveyed active-duty personnel and results showed 35.7% increase in e-cigarette use, which is a nearly eight-fold increase from 2011 data (Meadows et al, 2018). The adverse effects of vaping are of particular concern due to required readiness health standards.

Clinical Question: Does use of a text message-based vaping-reduction program for a period of three weeks reduce the amount of vaping use among active-duty service members?

Project design: This project evaluated the evidence-based *This is Quitting* program's ability to reduce vaping use among active-duty members receiving care in the outpatient behavioral health clinic. The RE-AIM organizational framework was used for planning and evaluation. Pre and post-intervention evaluations were used to measure the efficacy over a three-week period.

Analysis of the Results: The results of this study show a clinically significant decrease in the amount of vaping use among participants after a three-week interventional period.

Organizational Impact/Implications for Practice: An opportunity exists to increase mission readiness, improve service members' health, and decrease costs through using the *This is Quitting* intervention. *This is Quitting* is a safe, non-pharmaceutical intervention that can be accessed from anywhere and protects each user's anonymity, increasing accessibility. These goals align with the Military Health System quadruple aims of better readiness, better health, better care, and lower cost.

Reduction of Vaping Incidence in the Military

Introduction

Vaping is the use of a device such as an electronic cigarette to inhale substances such as nicotine, flavored liquids other than tobacco, or cannabis. Although the adverse health effects of vaping vary by the type of substance vaped, inhalation of harmful chemicals can cause irreversible lung damage, including cancer. The exhalation of these toxic vapors also affects the health of non-users through secondhand exposure (Sleiman et al., 2016).

This project focused on implementing an intervention to reduce the incidence of vaping/inclination to vape in military service members by promoting the use of a text-message-based program identified by the Substance Abuse and Mental Health Services Administration (SAMHSA) as helpful in reducing vaping/inclination to vape (Substance Abuse and Mental Health Services Administration, 2020).

Problem Synthesis

The increased use of electronic cigarettes in adolescents and young adults has become a significant concern for health agencies in recent years. According to the National Center for Chronic Diseases Health Promotion Office, between 2011 and 2015, the use of these devices increased by 900% among high school students (U.S. Department of Health and Human Services, 2016), and the military population is not an exception. In 2015, the Defense Health Agency (DHA) coordinated with the Department of Defense and surveyed active-duty personnel of all branches. The survey focused on several domains, including substance use. The results were released in 2018, showing an alarming 35.7 percent increase in electronic cigarette use compared to data obtained in 2011, which illustrates a nearly eight-fold increase (Meadows et al., 2018).

The adverse effects of vaping are a particular concern in the military population, considering that all military personnel are expected to be fit to fight as a readiness requirement in their job description. A study that investigated the effects of vaping on soldiers' performance in the Army Physical Fitness Test found that the soldiers who self-reported vaping had a 27-second increase in the two-mile run, a 4.56 decreased number of push-ups, and -2.01 fewer sit-ups compared to the self-reported non-smoker soldiers (Dinkeloo et al., 2020).

Addressing vaping in the active-duty population is imperative to prevent this generation of military members from suffering adverse health effects similar to older veteran populations. According to the Center for Disease Control and Prevention (CDC) Morbidity and Mortality Weekly Report (MMWR) published in January 2018, the incidence of tobacco use in veterans is substantially elevated compared to the civilian population, and the detrimental consequences related to chronic use of tobacco products creates a considerable financial impact (Odani et al., 2018).

A study looking at healthcare costs within the Veterans Health Administration (VHA) found that, in 2010, the VHA spent approximately \$2.7 billion on smoking-related hospitalizations, medications, and the care of patients. Data in the study also revealed that 56.8% of tobacco users in the VHA system are 18-25 years of age, 48.2% suffer from severe psychological distress, and 53.7% live in poverty (Barnett et al., 2015). These findings illustrate an alarming health disparity among young veterans with the lowest pay grades, who may be using tobacco to deal with the stress of adjusting to a challenging lifestyle away from their homes and families.

Relevance to Military Nursing

The intervention implemented in this study offered tools to support nurse-led and nurse-driven initiatives to decrease vaping among active-duty service members. By implementing this evidence-based solution, the expected outcome was an observable improvement in active-duty members' overall health, improved fitness test performance, and reduced healthcare costs. These beneficial outcomes contribute to the military health system's quadruple aims of better quality of care, improved health, reduced costs, and increased military readiness.

Clinical Question

Does using a text message-based vaping-reduction program for three weeks reduce the amount of vaping use among active-duty service members?

Search Strategy and Results

The following databases were used for the literature search PubMed, and CINAHL databases using the key terms vaping, e-cigarette*, smoking, addiction, cessation, reduction, military, therapy, text message*, and young adult*. In addition to vaping, literature on smoking was included in the search criteria because vaping has only recently been identified as a public health concern. Based on earlier literature searches, it was determined that a majority of interventions for vaping were similar to regular smoking.

Using Boolean functions OR/AND, we combined: vaping OR e-cigarette* AND addiction AND cessation OR therapy OR reduction; vaping OR e-cigarette* OR smoking AND cessation OR reduction AND text message*. Our exclusion criteria included: vaping complications, pregnancy, teenagers/adolescent samples, and publication date older than the year 2010. Our inclusion criteria included: military, young adults, vaping, cessation, reduction, texting, education, full-text and English language availability, and peer-reviewed articles only. (See appendix A).

We also used SAMHSA and FDA websites to obtain information regarding the resources available about the *Truth campaign* and the *This is Quitting* program to use during our project implementation.

Solution Synthesis

Our project proposed implementing an evidence-based text message program found to reduce vaping use in active-duty service members ages 12-24. Our project targeted active-duty service members at Travis Air Force Base, after obtaining all necessary approvals from local stakeholders and the Institutional Review Board (IRB). We coordinated with local stakeholders to ensure appropriate implementation site selection and the widest reach at those sites for this health promotion intervention.

Based on research findings, our proposed project aimed to provide information on the Truth Initiative's *This is Quitting* program, a free and anonymous text-based messaging system empirically shown to be effective in young adults.

The Truth Initiative's *This is Quitting* program is a free and anonymous text-based vaping reduction messaging system that targets individuals ages 12-24 and has been found to be effective in vaping reduction. The Truth Initiative's *This is Quitting* program reduced vaping use by 61% of respondents at two weeks follow-ups and 7-day abstinence and 30-day abstinence in 25.7% and 15.5% of the study sample, respectively, at the three months follow-up (Graham, 2019). Another randomized controlled trial study was conducted to evaluate abstinence using the same program. In this study, a total of 269 participants were divided into two groups using questionnaires to measure the intervention outcomes. The results revealed that 24/148 (16%) participants reported 30-day abstinence after being exposed to the *This is Quitting* program

compared to 10/121 (8.3%) participants from the control group, which indicates the efficacy of the program (Graham et al., 2020).

Similarly, other text-based vaping reduction messaging systems have been shown to be effective in several studies conducted in multiple countries. For example, a randomized control trial in China looking at the efficacy of a text-based intervention for smoking cessation showed that the quit rate was 26% in the intervention group compared to 12% in the control group (Liao et al., 2018). Another study recommending the use of text-based interventions also states that such interventions increase adherence because they can provide interventions during crucial moments between in-person interventions, and they provide anonymity for individuals that prefer not to come into an office (Mason et al., 2015).

Thus, based on empirical evidence, our project used the RE-AIM model to implement and evaluate an evidence-based vaping-reduction text-based messaging system. We evaluated our project outcomes at Travis AFB through monitoring our reach to the target population and vaping use before and after implementation. Participants' motivation to quit vaping was measured at baseline, and their motivation to continue abstinence at one month and six months was measured post-intervention. Participants' use, interaction frequency, and satisfaction with the program were also measured, as well as their patterns of vaping usage. Our project goal was to implement evidence-based solutions in alignment with the Defense Health Agency's quadruple-aim performance plan to increase readiness, improve health, and decrease cost by preventing comorbidities through improved healthcare in American service members.

Focus Areas

The focus of our project was to reduce vaping use by promoting the use of the *Truth* campaign's *This is Quitting* program. Reduction of vaping incidence aligns with the goals of the

quadruple aims of the Military Health System, which are improved quality of care, improved health, reduced cost, and increased military readiness.

Business Case Analysis

An opportunity existed to increase mission readiness, improve the health of active-duty service members, and decrease costs in the Air Force by using evidence-based education and a text-message-based cessation strategy to reduce the use of vaping by active-duty personnel. Our project aimed to mitigate the vaping incidence and promote using a text-message-based method to accomplish this objective. Our project goals align with the Military Health System (MHS) quadruple aim of readiness, better health, better care, and lower cost. Alternative strategies were costlier and more time-consuming than our proposed strategy. These included achieving the same objectives through primary care manager appointments, pharmacological interventions, and cognitive behavioral therapy. These alternatives come at higher risk, higher cost, and increased difficulty to the individual wishing to quit vaping. Our alternative could be safer, anonymous, more accessible to a broader range of personnel, and much more cost-effective than these alternatives. The total cost of our project was less than \$8,000. It included the cost of training two providers on motivational interviewing strategies in order to improve the quality of care offered by each provider. We expected the outcome of this project would be the successful, safe, and cost-effective achievement of the objective. (See Appendix E)

Organizing Framework

We used the Research Effectiveness Adoption Implementation Maintenance (RE-AIM) model to guide our project's execution. This model was conceptualized over 20 years ago to address the well-documented failures and delays in translating scientific evidence into practice and policy. It has been one of the most used planning and evaluation frameworks across the

fields of public health, behavioral science, and the implementation of evidence-based projects (Kessler et al., 2013). The evidence strongly supported our intervention focusing on decreasing the incidence of vaping in the military. After obtaining stakeholder approval, we implemented our project at Travis Air Force Base Mental Health Clinic.

The RE-AIM model contained detailed stages of the project implementation. The end-users that would benefit from the project were identified, which in this case were the military members who self-identified as vaping users and were interested in reducing their use or quitting. Using this model allowed us to make necessary modifications and adaptations during implementation. (See Appendix B).

Project Design

General Approach

Our project involved an evaluation of vaping incidence and active-duty service members' motivation to reduce/quit vaping after using an evidence-based vaping reduction text messaging program and their motivation to continue sobriety one month and six months after the implementation period.

Setting and Population

Our project was conducted at Travis Air Force Base (AFB) in the David Grant USAF Medical Center. Our target population consisted of active-duty service members presenting to the Behavioral Health Clinic at this facility who self-reported as e-cigarette users. We coordinated with local stakeholders, including the Mental Health Clinic flight commander, 60th Medical Group commander, Health Promotion Department Officer in Charge, the 60th Medical Group Nurse Scientist to ensure appropriate implementation, site selection, and broadest reach at this site for this health promotion intervention. We planned the implementation period of this

project after we obtained all necessary approvals from local stakeholders and the Institutional Review Board (IRB).

The David Grant USAF Medical Center is the Air Force's largest medical treatment center in the United States. They have a staff of over 2,600 personnel and provide medical services to more than 500,000 Department of Defense and Department of Veterans Affairs members. They provide a full range of medical services including emergency, surgical, and intensive care services. Mental health services include addiction care, alcohol and drug rehabilitation, non-24hr behavioral health for adults, children, and adolescents, and 24hr acute care/crisis stabilization for adults.

Procedural Steps

Upon arrival at Travis AFB, we submitted our evidence-based initiative proposal to the institutional review board (IRB) for approval. The first phase of our framework was "Reach," It focused on identifying our population and arranging unit access details and authorization through local stakeholders. Our target population was active-duty service members enrolled in the mental health clinic who self-reported as regular vaping device users. Participation in our project was voluntary. This step focused on evaluating the percentage of individuals we could reach during project implementation by analyzing the statistics provided by Travis Air Force Base Health Promotions and performing chart reviews.

The second phase of our selected EBP framework was "Effectiveness" We administered pre-and-post-assessments to collect data to assess the effectiveness, adherence, motivation to decrease or quit, and participants' satisfaction with the intervention. All data were de-identified, and no data was associated with any participants once disseminated. Names and contact information of attendees were kept under double lock in the P2SD's office and were only

accessible to the project team members. We promoted the use of the Truth Initiative's evidence-based vaping reduction text messaging system, *This is Quitting*. The use of the text-based messaging system was based on studies that evaluated the above national campaign and are detailed in our Data Analysis Plan document. (See Appendix D).

The third phase of our framework was "Adoption" and focused on evaluating how we can reach our targeted population to recruit and implement our intervention.

"Implementation" was the fourth phase of the organizing framework. We evaluated the implementation by keeping track of the percentage of perfect deliveries completed out of the total number of times the intervention was delivered, time costs for implementation, and lessons learned from implementation.

The fifth phase of our framework was "maintenance." In this phase, we tracked attrition rates by calculating the adherence percentage from the pre-assessment and post-assessment phases. Finally, we ensured our project results and lessons learned were available to facility staff for reference.

Timeline

(See Appendix C).

Data Analysis Plan

REACH: Was evaluated by calculating the percentage of service members reached, the units where they belong, and AFSCs immediately after the intervention phase.

EFFECTIVENESS: This was consistent with the studies that evaluated the FDA's The Real Cost campaign and the Truth Initiative's truth® campaign, the two very successful, evidence-based national campaigns. We considered evaluations at two-time points: pre-intervention and, three weeks later, a post-intervention questionnaire was sent to the participants.

The pre-intervention questionnaire was divided into two sections; the first section contained six demographics questions, and section two consisted of three questions; in the first question, we evaluated each participant's length of vaping use by five answer choices ranging from "less than one year" to "more than six years" (less than one year, 1-2 years, 3-4 years, 5-6 years, and more than 6 years). In the second question, we evaluated the daily use of vaping using five answer choices ranging from 1-4 times a day to more than 20 times a day (1-4 times a day, 5-9 times a day, 10-14 times a day, 15-19 times a day, more than 20 times a day). Lastly, in the third question, we assessed the participants' motivation to quit vaping using a 1-5 scale where one represented very little motivated and five very highly motivated (1=very little motivated, 2=a little motivated, 3=moderately motivated, 4= highly motivated, 5=Very highly motivated). The post-intervention questionnaire was also divided into two sections; the first section contained the same six demographic questions from the pre=intervention questionnaire, and section two consisted of eight questions; in the first question, we reevaluated the daily use of vaping utilizing five answer choices ranging from zero times a day to more than twenty times a day (0 times a day, 1-4 times a day, 5-9 times a day, 10-14 times a day, 15-19 times a day, more than 20 times a day). The second question evaluated the participants' motivation to continue abstinence for one month and six months using a 1-5 scale where one was very little motivated, and five was very highly motivated (1=very little motivated, 2=a little motivated, 3=moderately motivated, 4= highly motivated, 5=Very highly motivated). In the third question, we evaluated the participants' adherence to the three weeks of the program by using binary (yes, no) options. The fourth question assessed the participants' daily interaction with the program using a five-option answer ranging from once a day to five or more times a day (once a day, twice a day, three times a day, four times a day, five or more times a day). The fifth question assessed the participant's

satisfaction with the program using a four-option answer where one represented very satisfied and four very unsatisfied (1=very satisfied, 2=somewhat satisfied, 3=somewhat unsatisfied, 4=very unsatisfied). In an effort to ensure the benefit of the program decreasing vaping use, in the sixth question, we asked the participants if they used other vaping cessation methods while participating in our project by using binary (yes, no) options, and question seven was a follow up to the other methods they used from a five-option answer (n/a, nicotine replacement, medication, counseling, health promotion resources). The two data sets were compared using Wilcoxon's signed rank test to determine if our interventions produced statistically significant results.

ADOPTION: Was evaluated by calculating the percentage of units reached out of the total number of units available during our 3-week project implementation.

IMPLEMENTATION: Was measured by calculating the percentage of perfect deliveries completed out of the total number of times that our intervention was delivered, determining the need for adaptation, and calculating cost.

MAINTENANCE: Was evaluated by calculating the percentage of attrition of individuals and units between the first and second encounters. See Appendix D.

Potential Barriers

Barriers we encountered during this project included restricting face-to-face encounters due to COVID-19 pandemic policies. We counteracted this barrier by working with the 60th medical group (MDG) command and representative from the independent review board to obtain permission to conduct psychiatric evaluations using the MTF-approved telehealth approach based on pandemic restrictions and providing our pre-and-post questionnaires electronically.

This is Quitting is a text-based program, which also helped overcome this barrier. Another barrier we faced was a small number of individuals choosing to volunteer to take part in the

project. Since participation was voluntary, only a small number of potential participants decided to partake, and our sample size was twenty participants. Proper education on the risks and impact of vaping and assuring individuals that the anonymous project participation helped motivate individuals to participate. Another potential barrier we feared was a lack of adherence to the project. The project was carried out over a three-week time frame. Individuals during this time could choose to stop participating, which would impact the results of our project. Educating participants on the importance of the project and the benefits of reducing vape usage and explaining that adherence to the project for the entire duration was vital to its success helped motivate participants to adhere for the entire duration of the project. Finally, a potential barrier was the inability to prevent participants from using other vape reduction strategies during the project period, which could make it challenging to ascertain if the successful reduction of vape usage was due to the project interventions offered or other methods. Given that this project aimed to determine the efficacy of a single evidence-based intervention rather than a comparison study of two or more interventions, we considered this factor a potential limitation.

Dissemination Plan

Our results were disseminated by preparing and presenting to local leadership and stakeholders at Travis and at USU the results of our project implementation and the lessons learned. Prior to submitting our project for approval we collaborated with the 60th MDG health promotions department. We chose to collaborate with health promotions because they are charged with providing educational resources for individuals seeking help to quit using nicotine products. The health promotions team helped us to disseminate the results and all the information during different Commanders' calls at wing level. We informed the commanders that our study resulted in higher motivation to quit vaping and reduced incidence of vaping among active-duty

members. Presenting our results to these commanders increased their awareness so they can inform a wider audience of active-duty members to contact health promotions if they want help to quit vaping. We also designed a continuity binder that summarizes findings and lessons learned and was provided to local leadership at Travis. We helped identify champions to continue the implementation and ensure sustainability. Finally, pursuing publication and presenting the project findings in advanced practice conferences will ensure the project's long-term success.

HIPAA Concerns

We ensured compliance with HIPAA by not linking any protected health information PHI or PII to project results. To protect project participants, we de-identified vaping use pre- and post-questionnaires throughout our project's evaluation phase that only list project-issued codes. Project team members only used a list that connected project-related codes to project participants' initials and contact information to communicate with them at the three weeks mark for the post-intervention vaping use questionnaire. This list was kept under double lock in the P2SD office and was only accessible to project team members on a need-to-know basis throughout project implementation. This list was destroyed upon project completion. All project data was analyzed in aggregates on a common access card (CAC) enabled government computer, and all project data files were password protected.

Project Results

During the one-month enrollment period (16 Sep 2022 to 16 Oct 2022), twenty participants who presented to the Travis AFB Mental Health Clinic and self-reported as vape users enrolled in the project. All twenty participants completed the project with no attrition. Contact was made by email prior to implementation in order to provide participants with the

QRS codes used to access the pre-and-post assessment surveys. Participants then accessed the surveys autonomously at the start of implementation to complete the pre-assessment survey and after three weeks to complete the post-assessment survey. This project consisted of two data sets obtained three weeks apart through pre and post-intervention questionnaires. Each data set was analyzed using IBM SPSS statistics 27 for Windows. Wilcoxon Signed Ranks test was performed to examine change across time (pre vs. post-intervention) and significance. Due to the small sample size, the results of this project are limited in their generalizability. However, this project's results offer important clinical insights.

Analysis of the Results

Demographics

Twenty participants enrolled voluntarily in the project. Participants ranged in age from 19 to 41 years old, and the average age was 28 (SD = 6.31). 70% were male, and 30% were female. 40% were caucasian, 25% African American, 25% Hispanic or Latino, and 10% Asian American. 40% of the participants' rank was E4, 40% belonged to the 60th Maintenance squadron, and 35% of the participants' AFSC was 2A. Table 1 contains sample characteristics.

Table 1

Sample Characteristics

How Old Are You?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19	1	5.0	5.0	5.0
	21	2	10.0	10.0	15.0
	23	1	5.0	5.0	20.0
	24	2	10.0	10.0	30.0
	25	3	15.0	15.0	45.0
	26	2	10.0	10.0	55.0
	27	1	5.0	5.0	60.0
	28	1	5.0	5.0	65.0
	29	1	5.0	5.0	70.0
	32	2	10.0	10.0	80.0
	35	1	5.0	5.0	85.0
	36	1	5.0	5.0	90.0
	41	2	10.0	10.0	100.0
	Total		20	100.0	100.0

N	Valid	20
	Missing	0
Mean		28.00
Std. Error of Mean		1.410
Median		26.00
Mode		25
Std. Deviation		6.308
Variance		39.789
Skewness		.842
Std. Error of Skewness		.512
Kurtosis		-.030
Std. Error of Kurtosis		.992
Range		22
Minimum		19
Maximum		41
Sum		560

What is your ethnicity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	African-American	5	25.0	25.0	25.0
	Asian-American	2	10.0	10.0	35.0
	Caucasian	8	40.0	40.0	75.0
	Hispanic or Latino	5	25.0	25.0	100.0
	Total		20	100.0	100.0

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	6	30.0	30.0	30.0
	Male	14	70.0	70.0	100.0
	Total		20	100.0	100.0

What is your rank?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	E2	1	5.0	5.0	5.0
	E3	4	20.0	20.0	25.0
	E4	8	40.0	40.0	65.0
	E5	4	20.0	20.0	85.0
	E7	1	5.0	5.0	90.0
	E8	1	5.0	5.0	95.0
	O2	1	5.0	5.0	100.0
	Total		20	100.0	100.0

AFSC What is your AFSC?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2A	7	35.0	35.0	35.0
	2G	1	5.0	5.0	40.0
	2R	1	5.0	5.0	45.0
	2T	2	10.0	10.0	55.0
	3D Cyber systems operator	1	5.0	5.0	60.0
	3E	1	5.0	5.0	65.0
	3F	2	10.0	10.0	75.0
	3P	2	10.0	10.0	85.0
	46N	1	5.0	5.0	90.0
	4A biomed equip	1	5.0	5.0	95.0
	SF 3P	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

unit_rec What is your unit?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00 60th AMS	1	5.0	5.0	5.0
	2.00 60th APS	1	5.0	5.0	10.0
	3.00 60th CES	1	5.0	5.0	15.0
	4.00 60th FSS	1	5.0	5.0	20.0
	5.00 60th IPTS	1	5.0	5.0	25.0
	6.00 60th LRS	1	5.0	5.0	30.0
	7.00 60th med group	1	5.0	5.0	35.0
	8.00 60th MXS	8	40.0	40.0	75.0
	9.00 60th SFS	3	15.0	15.0	90.0
	10.00 660th AMXS	1	5.0	5.0	95.0
	11.00 821 CRS DOP	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Comparison of Pre and Post-intervention

Daily Vaping (e-cigarette) Use

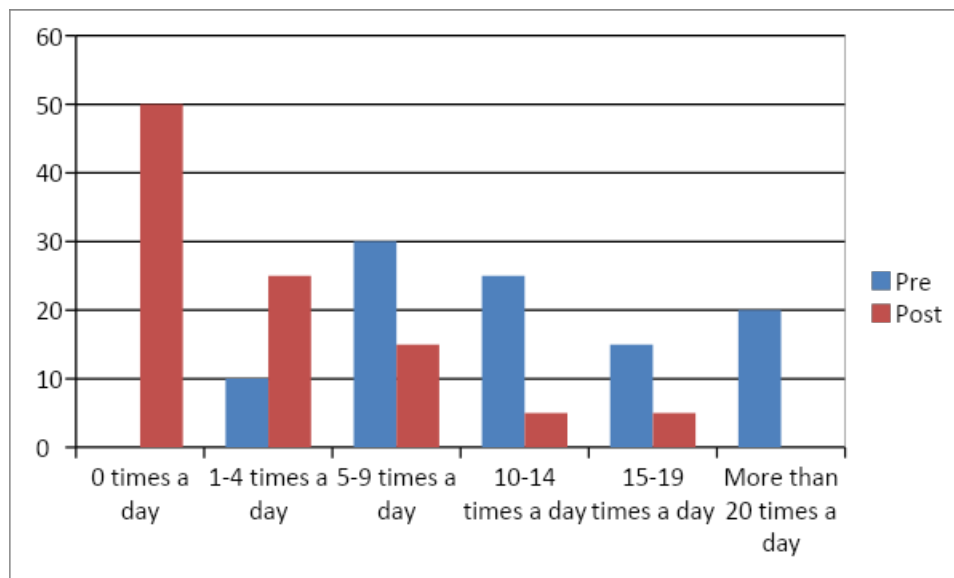
The first area assessed was the daily frequency of vaping use, for the pre-intervention (n = 20), 10% of the participants used e-cigarettes 1-4 times a day, 30% used 5-9 times a day, 25% used 10-14 times a day, 15% used 15-19 times a day followed by 20% of participants used more than 20 times a day. (see table below). In comparison, 50% in the post-intervention used no e-cigarettes, 25% used 1-4 times a day, 15% used 5-9 times a day, followed by 5% (one participant) used 15-19 times a day. Though significance testing was not a priority for this project, given the ordinal nature of the items, the nonparametric test: Wilcoxon Signed Ranks test, was performed to examine change across time (pre vs. post-intervention), and significance ($\alpha = .05$) was obtained: $Z = -2.35$, $p < .001$ indicating there was a statistically significant change across time in the usage of e-cigarettes. Table 2 illustrates the pre and post-intervention results

Table 2

Time per day use of e-cigarettes pre and post-intervention

	Pre	Post
0 times a day		50
1-4 times a day	10	25
5-9 times a day	30	15
10-14 times a day	25	5
15-19 times a day	15	5
More than 20 times a day	20	

Note: values are percentages



Wilcoxon Signed Ranks test

		N	Mean Rank	Sum of Ranks
times_day_use_cig_Postint_rec How many times per day do you currently use your e-cigarette? (Post-intervention) -	Negative Ranks	15 ^a	8.73	131.00
	Positive Ranks	1 ^b	5.00	5.00
times_day_use_cig_PreInt_rec How many times per day do you usually use your e-cigarette? (Pre-intervention)	Ties	4 ^c		
	Total	20		

- a. times_day_use_cig_Postint_rec How many times per day do you currently use your e-cigarette? (Post-intervention) < times_day_use_cig_PreInt_rec How many times per day do you usually use your e-cigarette? (Pre-intervention)
- b. times_day_use_cig_Postint_rec How many times per day do you currently use your e-cigarette? (Post-intervention) > times_day_use_cig_PreInt_rec How many times per day do you usually use your e-cigarette? (Pre-intervention)
- c. times_day_use_cig_Postint_rec How many times per day do you currently use your e-cigarette? (Post-intervention) = times_day_use_cig_PreInt_rec How many times per day do you usually use your e-cigarette? (Pre-intervention)

Test Statistics^a

times_day_us
 e_cig_Postint_
 rec How many
 times per day
 do you
 currently use
 your e-
 cigarette?
 (Post-
 intervention) -
 times_day_us
 e_cig_PreInt_r
 ec How many
 times per day
 do you usually
 use your e-
 cigarette? (Pre-
 intervention)

Z	-3.345 ^b
Asymp. Sig. (2-tailed)	<.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Motivation to Quit and to Continue Abstinence for One Month

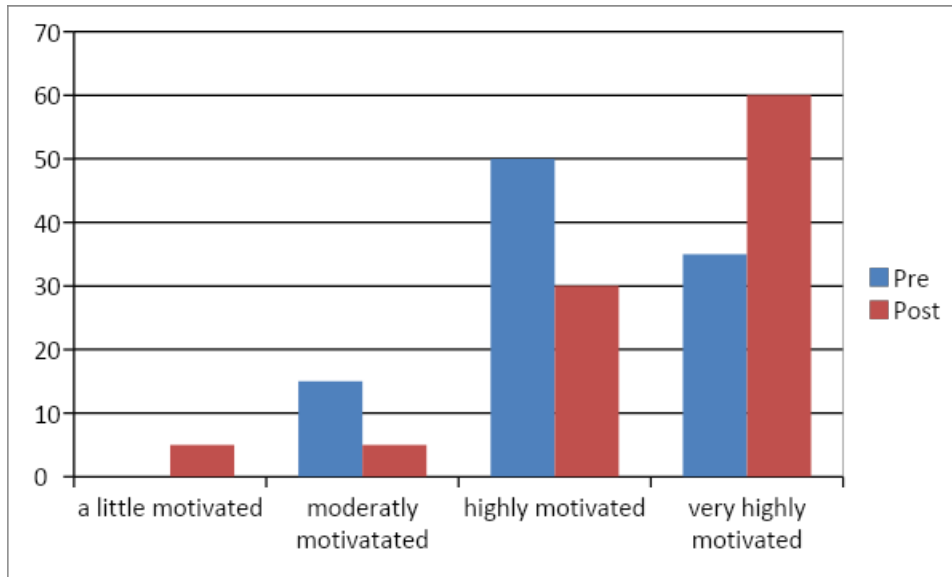
The second parameter assessed was the initial motivation to quit vaping and maintain abstinence for one month, for the pre-intervention (n = 20), 15% of the participants were moderately motivated, 50% indicated they were highly motivated, followed by 35% indicating they were very highly motivated to quit vaping at the beginning of the project. In comparison, 5% of the participants indicated they were a little motivated to continue abstinence, 5% were moderately motivated, 30% were highly motivated, and 60% indicated they were very highly motivated to continue abstinence for one-month post-intervention. Though significance testing was not a priority for this project given the ordinal nature of the items, the nonparametric test: Wilcoxon Signed Ranks test was performed to examine change across time (pre vs. post-intervention), and significance ($\alpha = .05$) was not obtained: $Z = -1.23$, $p = .218$ indicating there was not a statistically significant change across time in motivation to quit vaping now vs. intent to continue abstinence for 1 month. Table 3 illustrates the motivation to quit and to continue abstinence for one-month post-intervention.

Table 3

Motivation to quit vaping (pre and post [for 1 mth])

	Pre	Post
a little motivated		5
moderately motivated	15	5
highly motivated	50	30
very highly motivated	35	60

Note: values are percentages



Wilcoxon Signed Ranks test

Ranks

		N	Mean Rank	Sum of Ranks
Mot_abstinence_1mth How motivated are you to continue abstinence for one month? - Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?	Negative Ranks	4 ^a	5.00	20.00
	Positive Ranks	7 ^b	6.57	46.00
	Ties	9 ^c		
	Total	20		

- a. Mot_abstinence_1mth How motivated are you to continue abstinence for one month? < Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?
- b. Mot_abstinence_1mth How motivated are you to continue abstinence for one month? > Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?
- c. Mot_abstinence_1mth How motivated are you to continue abstinence for one month? = Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?

Test Statistics^a

	Mot_abstinenc e_1mth How motivated are you to continue abstinence for one month? - Mot_Quit_Vapi ng_Now How motivated are you right now to quit vaping?
Z	-1.232 ^b
Asymp. Sig. (2-tailed)	.218

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Motivation to Quit and to Continue Abstinence for Six Months

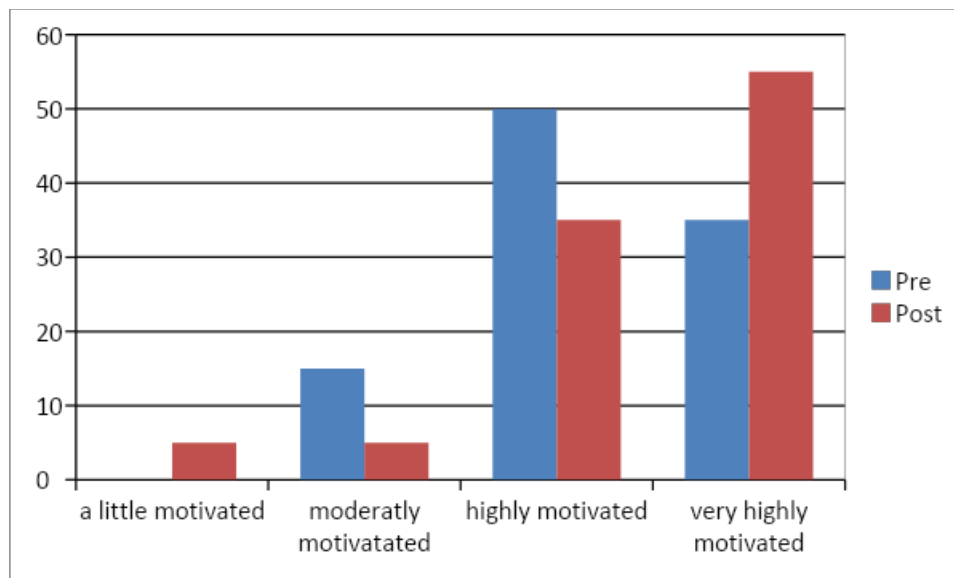
The last parameter assessed was the motivation to continue abstinence six months after the intervention. Again, for the pre-intervention ($n = 20$), 15% of the participants were moderately motivated, 50% indicated they were highly motivated, followed by 35% indicating they were very highly motivated to quit vaping at the beginning of the project. In comparison, 5% of participants indicated they were a little motivated to continue abstinence, 5% were moderately motivated, 35% were highly motivated, followed by 55% in the post-intervention indicated they were very highly motivated to continue abstinence for six months. Though significance testing was not a priority for this project, given the ordinal nature of the items, the nonparametric test: Wilcoxon Signed Ranks test, was performed to examine change across time (pre vs. post-intervention), and significance ($\alpha = .05$) was not obtained: $Z = -1.03$, $p = .305$ indicating there was not a statistically significant change across time in motivation to quit vaping now vs. intent to continue abstinence for 6 months. Table 4 illustrates the motivation to quit and to continue abstinence for one-month post-intervention.

Table 3

Motivation to quit vaping (pre and post [for 6 mth])

	Pre	Post
a little motivated		5
moderately motivated	15	5
highly motivated	50	35
very highly motivated	35	55

Note: values are percentages



Wilcoxon Signed Ranks test

Ranks

		N	Mean Rank	Sum of Ranks
Mot_abstinence_6mth How motivated are you to continue abstinence for six months? - Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?	Negative Ranks	4 ^a	4.50	18.00
	Positive Ranks	6 ^b	6.17	37.00
	Ties	10 ^c		
	Total	20		

- a. Mot_abstinence_6mth How motivated are you to continue abstinence for six months? < Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?
- b. Mot_abstinence_6mth How motivated are you to continue abstinence for six months? > Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?
- c. Mot_abstinence_6mth How motivated are you to continue abstinence for six months? = Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?

Test Statistics^a

Mot_abstinence_6mth How motivated are you to continue abstinence for six months? - Mot_Quit_Vaping_Now How motivated are you right now to quit vaping?	
Z	-1.027 ^b
Asymp. Sig. (2-tailed)	.305

- a. Wilcoxon Signed Ranks Test
- b. Based on negative ranks.

Organizational Impact/Implications to Practice & Policy

The data from this project indicate that an opportunity exists to increase mission readiness, improve health, and decrease costs in the Air Force by using the intervention implemented in this study. The project results indicate there was a statistically significant change across time in the usage of e-cigarettes. As there was an overall positive response from participants, this evidence-based intervention has the potential to reduce vaping incidence in the active-duty population, increase mission readiness, improve health, and reduce costs associated with potential comorbidities related to chronic vaping. Furthermore, this intervention enhances the Military Health System Quadruple Aim goal of readiness and population health to ensure all the military forces are deployable anywhere, anytime in support of military operations. Alternative strategies such as primary care management, pharmacological interventions, and cognitive behavioral therapy are costlier, time-consuming, and come with increased risk and difficulty for individuals who wish to quit vaping. Our intervention reduces risk of side effects from medication, provides anonymity, increases accessibility, and is much more cost-effective than the alternatives.

Future Directions for Research and Practice

As a result of the project, several recommendations can be made at this point. A replication of the project using a larger sample size in several other clinics and even other military healthcare facilities may be necessary to validate the findings of this project. Even though the result of the project in decreasing the vaping incidence was significant, further research is needed to increase service members' motivation to continue abstinence for a longer period of time. A study to examine individual providers' approach to nicotine cessation, such as the attitude that nurse practitioners present as opposed to the process of physician assistants or

physicians. It is possible that one type of provider intervenes more readily than others regarding nicotine cessation. Adequate assessment, documentation, and follow-up for all self-identified vaping product users are significantly essential to recommend and start promptly the intervention suggested in this project to help them decrease or, even better, quit and maintain abstinence. Implementation of these strategies will translate into efficient and cost-effective delivery of vaping cessation services.

Conclusion

In conclusion, our project showed that the *This Is Quitting* program was well-received and effectively reduced the incidence of vaping use in the military population. The significant increase in motivation to quit after a three-week utilization period is profound. This program must be offered more widely and added as a resource to vaping cessation materials already offered to active-duty military members. As the incidence of vaping or also called e-cigarettes use in the military, continues to grow, compromising not only their physical performance and overall health but also considering the comorbidities associated with the prolonged use of nicotine products and the cost associated with treating them is necessary to urgently implement interventions to decrease this numbers and prevent further damage. In addition to effectiveness, the results also showed vast acceptance in a military population.

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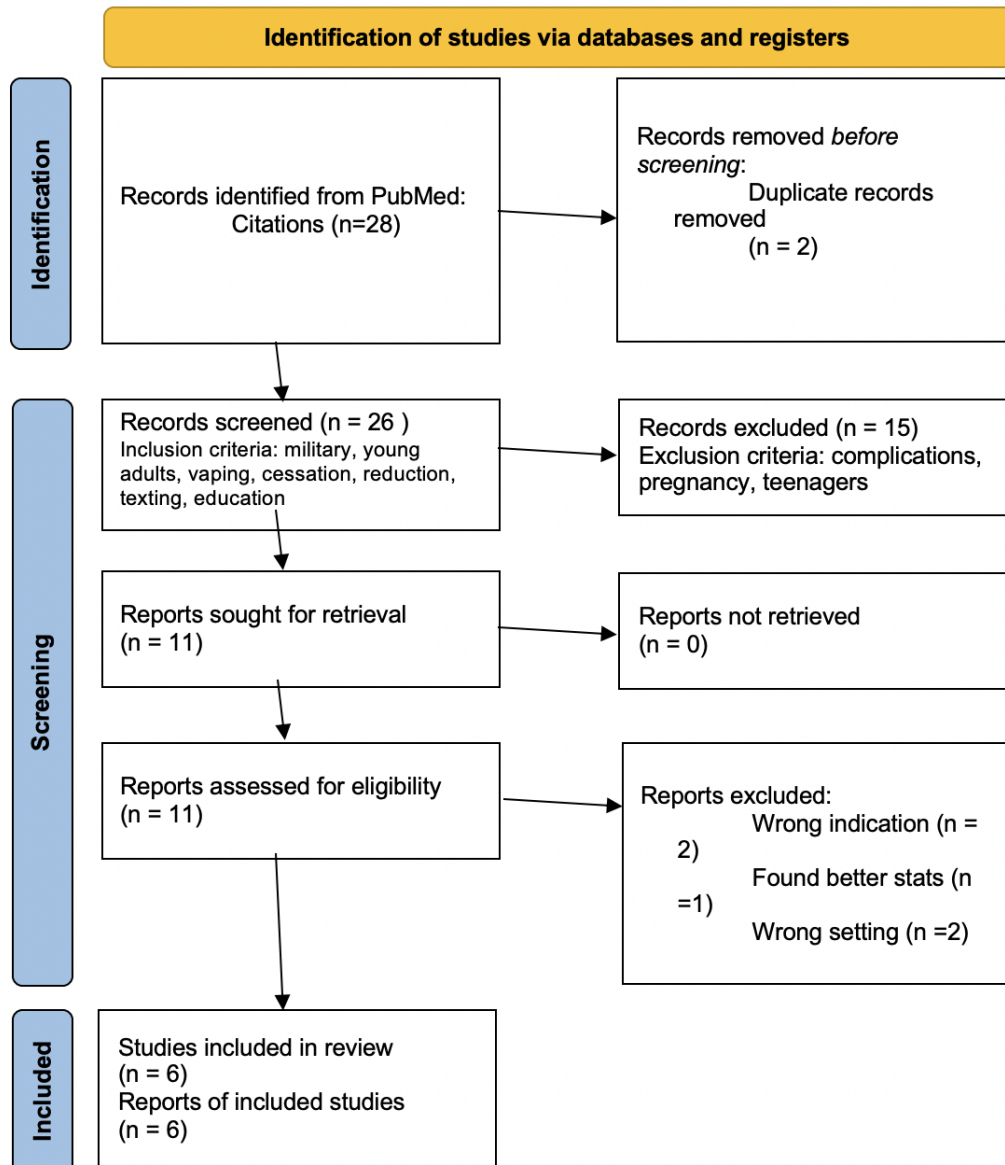
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Appendix A
PRISMA 2020 flow diagram for new systematic reviews, which included searches of databases and registers only



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71
 For more information, visit: <http://www.prisma-statement.org/>

Appendix B
RE-AIM Model Framework



Appendix D Data Analysis Plan

	Variable Name	Variable Description and type of measure	Data Source	Possible Range of Values	Level of Measurement	Time Frame for Collection	Statistical Test	Decision Rule
E V E N T	IV	Vaping reduction, prevention, and text messaging program recommendation training Description: Military personnel received an educational intervention on the topic in June 2022. Type: process measure	Knowledge check	Frequency: (days of the week) 0-7 Quantity: (vaping use) 0=no change 1=increased 2=decreased Use of text message program: 0=no 1=yes	Nominal	June 2022 (before training) July 2022 (2-3 weeks after training)	None	NA
	DV	% application of skills learned and use of text messaging program Description: REACH: <ul style="list-style-type: none"> • % of service members reached per unit EFFECTIVENESS Mean % scores on knowledge checks (%) <ul style="list-style-type: none"> • Confidence/Awareness of vaping risks: calculated by counting # of days/total days of the week per participant and then calculating the mean for all participants before, and at the 2-3 week post-educational intervention (Dinkeloo et al., 2020), (Vallone et al., 2018) (Farrelly et al., 2017) • Frequency of vaping use calculated by counting # of days/total days of the week per participant and then calculating the mean for all participants before and at the 2-3 week post-educational intervention (Graham et al., 2019) (Graham et al., 2020). • Quantity of vaping use calculated by counting occurrences value (0,1,2)/3 (# of options) and then calculating the mean for all participants before and at the 2-3 week post-educational intervention (Graham et al., 2019). • Use of text message program calculated by counting values (0,1)/2 (# of options) and then calculating the mean for all participants before training, and at the 2-3 week post-educational intervention ADOPTION <ul style="list-style-type: none"> • % of units reached/ out of total number of units available IMPLEMENTATION <ul style="list-style-type: none"> • % of perfect deliveries completed/ out of total number of times program was delivered • Any needed adaptations? • Cost? MAINTENANCE <ul style="list-style-type: none"> • % attrition of individuals between first encounter and second • % attrition of units between first encounter and second Type: Outcome measure	Assessment pre-post training	0-100%	Interval	June 2022 (before training) July 2022 (2-3 weeks after training)	Paired T-test Or Wilcoxon's signed rank test	Based on literature, our desired outcome is 75% adherence and utilization of the skills taught. (Reference?)

**Appendix E
Business Case Analysis**

BUSINESS CASE WITH VALUE BASED CARE ASSESSMENT	
Proposed Title for Project/Initiative/Opportunity to Improve	
Reduction of vaping incidence in the military.	
Opportunity Statement	
Recent studies have shown that the use of e-cigarettes continues to increase dramatically among active-duty military members, with health service costs estimated to be billions of dollars. It is imperative that we find cost-effective means to reduce the impact vaping has on mission readiness, as well as the financial impact it has on the military medical system. Our solution is to educate service members on the dangers of vaping, its impact on military readiness and implement a bundle of evidence-based training and text-message-based interventions to prevent vaping initiation and decrease the incidence.	
Business Opportunity/Objectives	
Macro (Linked to quadruple aims)	
<ol style="list-style-type: none"> 1. Increase readiness by reducing performance problems caused by vaping. 2. Improve health by decreasing vaping incidence and preventing initiation. 3. Decrease cost by preventing comorbidities related to vaping addiction. 	
Micro (Linked to Focus area goals)	
<ol style="list-style-type: none"> 1. Reduce the frequency and quantity of vaping by providing training on vaping reduction strategies and recommending the use of a text-message-based program. 2. Increase utilization of a text-message-based tool to reduce the amount and frequency of vaping. 	
Potential Impact of the Initiative/Project	
Metrics	
<ol style="list-style-type: none"> 1. Measure the number of participants that decreased vaping after participating in the program. <ol style="list-style-type: none"> a. Pre and post-assessment questionnaires will be utilized to measure this outcome. 2. Measure motivation to quit/decrease vaping habits before starting the implementation and motivation to continue abstinence at one month and three months after implementation. <ol style="list-style-type: none"> a. Pre and post-assessment questionnaires will be utilized to measure this outcome. 3. Measure the acceptance and interaction with the program. <ol style="list-style-type: none"> a. Pre and post-assessment questionnaires will be utilized to measure this outcome. These align with the MHS quadruple aims. 	
Alignment	
MHS Quadruple Aims:	
<ol style="list-style-type: none"> 1. Better health: reducing the generators of illness by decreasing vaping incidence. 2. Increased readiness: Ensuring that the total military force is medically ready to deploy by avoiding decreased or impaired performance due to problems caused by vaping. 3. Lower cost: considering the total cost of care over time by preventing comorbidities associated to chronic vaping addiction. 4. Better care: providing compassionate, equitable, safe, and always the highest quality care by implementing an evidence-based intervention identified by the Substance Abuse and Mental Health Services Administration (SAMHSA) as helpful in reducing vaping. 	
Alternatives (courses of action) chosen for Analysis	
<ol style="list-style-type: none"> 1. Implementation of an evidence-based intervention to reduce the incidence of vaping in military service members by: <ol style="list-style-type: none"> a. Recommending the use of a text-message-based program. 2. Combination therapy involving pharmacotherapy and cognitive behavioral therapy (CBT) is an option that has been shown to help with nicotine addiction. Access to care can be delayed due to undermanned clinics, and referral to outside providers may be necessary. 	

<p>3. <i>“Status Quo”</i>: Bupropion, and nicotine replacement therapy (NRT) are currently the most commonly used interventions for nicotine addiction in the Department of Defense (DoD) health.</p>	
<p>Analysis of Alternatives</p>	
<p>Alternative 1:</p>	<p>Implementation of an evidence-based intervention:</p> <ol style="list-style-type: none"> 1. Enrollment in a text-message-based interventional program.
<p>Pros</p>	<p>Cons</p>
<ol style="list-style-type: none"> 1. Free 2. 24-hour accessibility 3. Anonymous 4. No risk of interaction if the patient is taking medications 5. No pregnancy risk associated 6. Evidence- base efficacy 7. Does not require access to a medical treatment facility 	<ol style="list-style-type: none"> 1. Access to a cellular phone or another device with texting capabilities
<p>Alternative 2:</p>	<p>Combination therapy involving Bupropion and cognitive behavioral therapy (CBT)</p>
<p>Pros</p>	<p>Cons</p>
<ol style="list-style-type: none"> 1. Combination of CBT and pharmacotherapy is proved successful (Schmitz, J. et Al, 2007) 	<ol style="list-style-type: none"> 1. Referral to civilian providers is expensive, and they are not familiar with military regulations and which can jeopardize military member's 2. CBT therapy session estimated cost between \$150 to \$300 3. The complete treatment requires between 4-8 sessions/90-300 minutes total. 4. Tricare does not cover 100% of prescription costs outside of military treatment facilities.
<p>Alternative 3:</p>	<p><i>“Status Quo”</i>: Combination therapy using Bupropion and NRT</p>
<p>Pros</p>	<p>Cons</p>
<ol style="list-style-type: none"> 1. A quit rate of up to 29.9% has been shown with Bupropion/NRT combination therapy. 	<ol style="list-style-type: none"> 1. Risk of adverse effects: seizures, nausea, headaches, dry mouth, rhinitis, flatulence, skin irritation, diarrhea, constipation, agitation, depression, and suicidal ideation. 2. Requires individuals to schedule PCM appointments to receive a medical assessment, prescription for use, and follow-up evaluations. 3. Combination pharmacotherapy is an expensive treatment option.
<p>Assumptions</p>	
<ol style="list-style-type: none"> 1. The use of e-cigarettes among active duty members is increasing, with recent numbers estimating a 35.7% increase across all military branches (Meadows et al., 2018). 2. The use of e-cigarettes is negatively impacting active duty personnel's ability to meet fitness and readiness standards due to adverse health effects associated with tobacco use. Members who report regular use of tobacco and vape devices have lower average fitness test scores than users who do not use tobacco products (Dinkeloo et al., 2020). 3. The adverse effects of tobacco use are associated with increased healthcare costs within the Veterans Health Administration of up to \$2.7 billion (Barnett et al., 2015). 	

4. A health disparity exists among active duty members age 18-25 who use tobacco products which shows higher rates of poverty and psychological distress among this population, which may contribute to the higher rates of tobacco use (Barnett et al., 2015).

Recommendation and Rationale

Recommendation

Implementation of an evidence-based intervention: enrollment in a text-message-based interventional program.

Rationale

Text-based interventions have been shown to be effective in several studies conducted in multiple countries. For example, a randomized control trial in China looking at the efficacy of a text-based intervention for smoking cessation showed that the quit rate doubled for individuals in the intervention group (26%) compared to the control group (12%) (Liao et al., 2018). Another study recommending the use of text-based interventions also states that such interventions increase adherence because they can provide interventions during crucial moments between in-person interventions, and they provide anonymity for individuals that prefer not to come into an office (Mason et al., 2015).

The research shows that the *truth*® campaign has prevented between 60-80% of young adults from smoking (Vallone et al., 2018). *This is Quitting*, a text-message-based program developed by the Truth Initiative, which has shown a decrease of 25.7% of 7-day abstinence and 15.5% in 30-day abstinence (Graham, 2019).

Value-Based Care - Investment Required by the Organization and the Associated "VALUE" or \$ GAINED.

<i>Costs of nicotine use</i>		<i>Costs of our solution</i>	
<i>National cost of Current smokers</i>	<i>1.7 Billion dollars/year</i>	<i>EDUCATIONAL MATERIALS</i>	<i>\$0.10</i>
<i>National cost of former smokers</i>	<i>983 million/year</i>	<i>JOURNALS</i>	<i>\$10/EA</i>
<i>Cost for each individual smoker</i>	<i>1,133/yr</i>	<i>FLYERS</i>	<i>\$0.90/EA</i>
<i>Cost for each former smoker</i>	<i>266/yr</i>	<i>POPULATION</i>	<i>200</i>
<i>Total Cost</i>	<i>2.7 Billion dollars/year</i>	<i>TOTAL</i>	<i>\$2,200</i>

Risks and Mitigation Plan

Risks	Plan
1. Withdrawal symptoms related to the cessation of nicotine use are Irritability, increased appetite, depressed moods, insomnia, frustration, anger, restlessness, and difficulty concentrating.	1. We would ensure to educate patients to watch for these symptoms and report them to their primary care doctor, or seek

	treatment in an emergency room, if necessary.	
2. Non-compliance	2. We will use education about the risks associated with vaping in order to try to motivate participants to complete the entire program in order to avoid complications from vaping.	
3. HIPAA and ethical considerations	3. We will avoid collecting protected health information about program participants, and all data collected will be kept on a secure computer and deleted upon completion of the project.	
Implementation Plan		
Phase 1:	REACH	
Milestone Description:	Reps: Phase 2 EBP Coordinator, IRB, Unit leadership. Population: Patients seen in the BH clinic at the David Grant USAF Medical Center identified as users of e-cigarettes. Population estimate: 20. Voluntary enrollment.	
Deliverables	Due Date	Accountable Person
1. USUHS project submission and approval 2. Phase 2 Site IRB submission <ul style="list-style-type: none"> a. C23 EBP Initiative Proposal b. Educate Airman c. Provide Educational Resources 	Jan 2022 to June 2022	Capt Sussan Goldsworthy Capt Jeremy Cooper
Resources Needed		
1. Access to medical center staff to schedule a 45-minute training session to present our project, provide education and disseminate pamphlets. 2. Mitigate risk by collaborating with phase 2 site director at Travis AFB (senior mentor) and GSN faculty to ensure presentation quality and accuracy.		
Expected Level of Benefit		
Decrease the incidence of vaping, thus increasing readiness and decreasing comorbidities associated with vaping addiction.		
Phase 2:	Effectiveness	
Milestone Description:	The effectiveness of our proposed intervention will be evaluated by measuring the use of the resources presented to decrease vaping incidence by using pre-intervention and three weeks post-intervention knowledge checks. Due to time constraints, the forecast for maintenance of the interventions will be assessed at the three-week mark.	
Deliverables	Due Dates	Accountable Person
1. Pre-intervention knowledge check: will be obtained to establish a baseline for the participants. 2. Post-intervention knowledge check: will be obtained three weeks after implementation of our EBP interventions	November 2022 December 2022	Capt Sussan Goldsworthy Capt Jeremy Cooper

Resources Needed		
<ol style="list-style-type: none"> Utilization of Travis AFB tech school squadron facilities to educate trainees. Pre/post-intervention knowledge checks printed, distributed, and collected back. 		
Expected Level of Benefit		
<ol style="list-style-type: none"> Adherence to the text-message-based program Motivation to quit/decrease vaping and maintain abstinence at one and three months. Decreased vaping usage. 		
Phase 3:	Adoption	
Milestone Description:	After reviewing data and completing the statistical analysis, we will complete our final draft to brief USUHS faculty and Travis AFB leadership.	
Deliverables	Due Dates	Accountable Person
<ol style="list-style-type: none"> Compile and review data points following project data analysis plan Run statistical analysis 	December 2022	Capt Sussan Goldsworthy Capt Jeremy Cooper
Resources Needed		
<ol style="list-style-type: none"> Data collected from the implementation of the project. Statistician/statistical analysis software. 		
Expected Level of Benefit		
Information obtained after statistical analysis will show significant benefits to support the adoption of our EBP project at a larger scale.		
Phase 4:	Implementation	
Milestone Description:	Presentation of the implementation, results, and significance of our EBP project to Travis AFB leadership and USUHS faculty.	
Deliverables	Due Dates	Accountable Person
<ol style="list-style-type: none"> Deliver/disseminate findings to leadership at Travis AFB Presentation of the finalized project to USUHS faculty 	February 2023 to Apr 2023	Capt Sussan Goldsworthy Capt Jeremy Cooper
Resources Needed		
<ol style="list-style-type: none"> Schedule a meeting with Travis AFB leadership Printed copies of EBP project showing results and significance, attached copies of the resources used during the implementation phase. 		
Expected Level of Benefit		
Evidence on the efficacy of EBP interventions applied in the United States military population.		
Phase 5:	Maintenance	
Milestone Description:	<ol style="list-style-type: none"> To ensure the sustainability of our project, Travis AFB mental health and Health Promotion Department will receive the resources used to assist patients in decreasing vaping. Publication. 	
Deliverables	Due Dates	Accountable Person

<ol style="list-style-type: none"> 1. Disseminate findings to Travis AFB MH/SUDS clinic providers 2. Pursue TSNRP/publication 3. Deliver/disseminate project findings at JONAS philanthropies conference. 	<p>Nov 2022 to Apr 2023</p> <p>Nov 2022 to Apr 2023</p> <p>Sept 2023</p>	<p>Capt Sussan Goldsworthy Capt Jeremy Cooper</p>
<p>Resources Needed</p>		
<ol style="list-style-type: none"> 1. Access to Travis AFB MH/SUDS providers. 2. Educational Resources. 3. Information regarding required documentation and publication process. 4. Printing support for poster completion. 		
<p>Expected Level of Benefit</p>		
<ol style="list-style-type: none"> 1. Increase knowledge among MH/SUDS providers regarding EBP interventions to decrease vaping incidence. 2. Evidence of efficacy of EBP interventions in the military population. 3. Dissemination of findings in APRN civilian and military conferences. 		

Appendix F
Forms Used in Data Collection

Pre-Intervention Questionnaire

4/26/23, 7:51 AM PRE-INTERVENTION QUESTIONNAIRE

PRE-INTERVENTION QUESTIONNAIRE

Demographics

* Indicates required question

1. How Old Are You? *

2. What is your gender? *

Check all that apply.

Male
 Female
 Other: _____

3. What is your ethnicity? *

Check all that apply.

Caucasian
 African-American
 Asian-American
 Hispanic or Latino
 Indian-American
 Native-American
 Middle Eastern
 Pacific Islander
 Other: _____

https://docs.google.com/forms/d/1975481M4L3OCkmmV_3R6f4E-BaJ-PSA0FW91Qeds 1/4

4/26/23, 7:51 AM PRE-INTERVENTION QUESTIONNAIRE

4. What is your rank? *

Check all that apply.

E1
 E2
 E3
 E4
 E5
 E6
 E7
 E8
 E9
 O1
 O2
 O3
 O4
 O5
 O6
 O7
 O8
 O9

5. What is your unit? *

6. What is your AFSC? *

Questionnaire

https://docs.google.com/forms/d/1975481M4L3OCkmmV_3R6f4E-BaJ-PSA0FW91Qeds 2/4

4/26/23, 7:51 AM PRE-INTERVENTION QUESTIONNAIRE

7. How long have you used e-cigarettes? *

Check all that apply.

Less than one year
 1-2 years
 3-4 years
 5-6 years
 more than 6 years

8. How many times per day do you usually use your e-cigarette? (Pre-intervention) *

Check all that apply.

1-4 times a day
 5-9 times a day
 10-14 times a day
 15-19 times a day
 more than 20 times a day

https://docs.google.com/forms/d/1975481M4L3OCkmmV_3R6f4E-BaJ-PSA0FW91Qeds 3/4

4/26/23, 7:51 AM PRE-INTERVENTION QUESTIONNAIRE

9. How motivated are you right now to quit vaping? *

(1=very little motivated, 2= a little motivated, 3=moderately motivated, 4= highly motivated, 5=Very highly motivated)

Mark only one oval.

1

2

3

4

5

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Google Forms

https://docs.google.com/forms/d/1975481M4L3OCkmmV_3R6f4E-BaJ-PSA0FW91Qeds 4/4

Post-Intervention Questionnaire

4/28/23, 7:53 AM POST-INTERVENTION QUESTIONNAIRE

POST-INTERVENTION QUESTIONNAIRE

* Indicates required question

1. How old are you? *

2. What is your gender? *

Check all that apply.

Male
 Female
 Other: _____

3. What is your ethnicity? *

Check all that apply.

Caucasian
 African-American
 Asian-American
 Hispanic or Latino
 Indian-American
 Native-American
 Middle Eastern
 Pacific Islander
 Other: _____

<https://docs.google.com/forms/d/15tW46baAe9RQjXN0reathYnNEDRRKUGWOCaDnNQ/edit> 1/6

4/28/23, 7:53 AM POST-INTERVENTION QUESTIONNAIRE

4. What is your rank? *

Check all that apply.

E1
 E2
 E3
 E4
 E5
 E6
 E7
 E8
 E9
 O1
 O2
 O3
 O4
 O5
 O6
 O7
 O8
 O9

5. What is your unit? *

6. What is your AFSC? *

Questionnaire

<https://docs.google.com/forms/d/15tW46baAe9RQjXN0reathYnNEDRRKUGWOCaDnNQ/edit> 2/6

4/28/23, 7:53 AM POST-INTERVENTION QUESTIONNAIRE

7. Did you use the program for the whole three weeks? *

Check all that apply.

Yes
 No

8. How many times a day did you interact with the program? *

Check all that apply.

Once a day
 Twice a day
 Three times a day
 Four times a day
 Five or more times a day

9. How satisfied were you with the program? *

(1=very satisfied, 2=somewhat satisfied, 3=somewhat unsatisfied, 4=very unsatisfied)

Mark only one oval.

Very satisfied

1

2

3

4

Very unsatisfied

<https://docs.google.com/forms/d/15tW46baAe9RQjXN0reathYnNEDRRKUGWOCaDnNQ/edit> 3/6

4/28/23, 7:53 AM POST-INTERVENTION QUESTIONNAIRE

10. Did you use other vaping cessation methods while participating in this study? *

Check all that apply.

No
 Yes

11. What other methods did you use? *

Select all that apply

Mark only one oval.

N/A
 Nicotine replacement
 Medication
 Counseling
 Health promotions resources

12. How many times per day do you currently use your e-cigarette? (Post-intervention) *

Check all that apply.

0 times a day
 1-4 times a day
 5-9 times a day
 10-14 times a day
 15-19 times a day
 more than 20 times a day

<https://docs.google.com/forms/d/15tW46baAe9RQjXN0reathYnNEDRRKUGWOCaDnNQ/edit> 4/6

4/28/23, 7:53 AM

POST-INTERVENTION QUESTIONNAIRE

13. How motivated are you to continue reduction/abstinence for one month? *
(1=very little motivated, 2=a little motivated, 3=moderately motivated, 4= highly motivated, 5=Very highly motivated)

Mark only one oval.

Very little motivated

1

2

3

4

5

Very highly motivated

4/28/23, 7:53 AM

POST-INTERVENTION QUESTIONNAIRE

14. How motivated are you to reduction/continue abstinence for six months? *
(1=very little motivated, 2=a little motivated, 3=moderately motivated, 4= highly motivated, 5=Very highly motivated)

Mark only one oval.

Very little motivated

1

2

3

4

5

Very highly motivated

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Google Forms

Appendix G
Team Mentor Agreement Form



Appendix G: Daniel K. Inouye Graduate School of Nursing
DNP Project Team Mentor (Committee Membership) Agreement Form

DOCTOR OF NURSING PRACTICE PROJECT
DNP Project Clinical Question and Team Mentor (Committee Membership) Agreement Form

Graduation Year: 2023

Name(s) of DNP Project Student Team:

- 1. Goldsworthy, Sussan L. Phase II Site: Travis AFB AGCNS [] FNP [] PMHNP [x] RNA [] WHNP []
2. Cooper, Jeremy M. Phase II Site: Travis AFB AGCNS [] FNP [] PMHNP [x] RNA [] WHNP []
3. _____ Phase II Site: AGCNS [] FNP [] PMHNP [] RNA [] WHNP []
4. _____ Phase II Site: AGCNS [] FNP [] PMHNP [] RNA [] WHNP []
5. _____ Phase II Site: AGCNS [] FNP [] PMHNP [] RNA [] WHNP []
6. _____ Phase II Site: AGCNS [] FNP [] PMHNP [] RNA [] WHNP []

The tentative title of the DNP Project Proposal for this student group is:

Reduction of Vaping Incidence in the Military

Committee Approved DNP Project Clinical Question:

Does use of a text message-based vaping-reduction program for a period of one month reduce the amount of vaping use among active-duty service members?

Names of DNP Project Team Mentors (type the name and obtain signatures):

I agree to serve as a member of the DNP Project Team (Team Mentors) for the above DNP Student Project Team. As a Project Team Mentor, I agree to the duties and responsibilities outlined within the DNP Project Manual which include but are not limited to the provision of consultation and guidance supporting the entire DNP project journey and to ensure the DNP project is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation.



Appendix G: Daniel K. Inouye Graduate School of Nursing
DNP Project Team Mentor (Committee Membership) Agreement Form

NOTE: You may have 3-4 DNP Team Mentors [committee members including your DNP Senior Mentor (Chair)]. The Phase II Site Director may also be a member of the group, as well as other USUHS faculty or others who may serve as content experts. All non-USUHS faculty selected as a Team Mentor must be approved by the DNP Project Director.

Senior Mentor (Chair):

Lt Col Regina Owen

Signature: _____



Date: 11.25.2022

Team Mentor (Committee):

Lt Col Joseph Kelly

Signature: _____

Date: _____

Appendix H CITI Certificates



Completion Date 06-Apr-2021
Expiration Date 05-Apr-2024
Record ID 41986627

This is to certify that:

Sussan Goldsworthy

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Social and Behavioral Investigators and Research Study Team
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)



Verify at www.citiprogram.org/verify/?w95ecb4eb-2256-461d-b4a5-f31159fcc126-41986627



Completion Date 14-Apr-2021
Expiration Date 13-Apr-2024
Record ID 42074500

This is to certify that:

Jeremy Cooper

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Social and Behavioral Investigators and Research Study Team
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)



Verify at www.citiprogram.org/verify/?wd48f12bb-8f07-46f9-a0ae-53271f45e50a-42074500

**Appendix I
USUHS Form 3202N**

**USUHS FORM 3202N
DANIEL K. INOUE GRADUATE SCHOOL OF NURSING
EVIDENCE-BASED PRACTICE/PERFORMANCE IMPROVEMENT PROPOSAL**

VPR Date Stamp

Project Number: _____ (VPR will assign)

Project Title: **Reduction and Prevention of Vaping Incidence in the Military**

SECTION A: STUDENT POC INFORMATION	
1. Name (Last, First, MI): Goldsworthy, Sussan L.	Student E-mail: sussan.goldsworthy@usuhs.edu
2. Home Address: _____	Cell Number: _____
SECTION B: COMMITTEE CHAIR / SENIOR MENTOR INFORMATION	
3. Name (Last, First, MI): Owen, Regina D.	
4. Telephone: _____ Fax: _____	E-mail: regina.owen@usuhs.edu
5. USUHS Building/ Room No.: E1019	
SECTION C: PROJECT INFORMATION	
6. Attach the Abstract for the proposal, including the following sections: Site Location of the Project, Title, Authors, Background or Problem/Issue, Clinical Question/Purpose, Project Design, Anticipated Organizational Impact/Implications for Practice and also include the Proposed Timeline. Single space the abstract and use Times New Roman font, size 12.	
7. Is this proposal related to an active research project of the Chair/Senior Mentor identified in Section B? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, complete below; if no, proceed to Part 8. Project Number: _____ Project Title: _____ Project Start Date: _____ Project End Date: _____	
8. Anticipated period of performance: Project Start Date: 9/5/2022 Project End Date: 10/10/2022	
9. Performance Site(s): Travis AFB. David Grant Medical Center/Mental Health outpatient clinic	
10. Does this project involve any classified information? (Contact the USUHS Security Office for guidance) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
11. Do you have a funding source for this project? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA If yes, specify the funding agency and the amount provided: Jonas philanthropies \$15000.	
SECTION D: SIGNATURES	
The following signatures attest to the validity of the above information:	
GOLDSWORTHY.SUSSAN.LEE.1512619025 Student (Project Point of Contact for the Group) (Signature and Date) Digitally signed by GOLDSWORTHY.SUSSAN.LEE.1512619025 Date: 2022.08.27 13:13:01 -0700'	OWEN.REGINA.D.1253117423 Chair/Senior Mentor (Signature and Date) Digitally signed by OWEN.REGINA.D.1253117423 Date: 2022.08.29 12:37:18 -0400'
KELLY.JOSEPH.G.1265193150 Chair/Program Director (Signature and Date) Digitally signed by KELLY.JOSEPH.G.1265193150 Date: 2022.08.30 10:01:03 -0700'	OWEN.REGINA.D.1253117423 Chair/Program Director (Signature and Date) Digitally signed by OWEN.REGINA.D.1253117423 Date: 2022.08.29 12:37:36 -0400'
_____ DNP Project Director or PhD Director (Signature and Date)	SEIBERT.DIANE.C.1084932279 Associate Dean for Academic Affairs, GSN (Signature and Date) Digitally signed by SEIBERT.DIANE.C.1084932279 Date: 2022.12.01 16:17:38 -0500'
SIMMONS.ANGELA.MARIE.1143313375 Associate Dean for Research, GSN (Signature and Date) Digitally signed by SIMMONS.ANGELA.MARIE.1143313375 Date: 2022.12.01 20:42:07 -0500'	ROMANO.CAROL.A.1032050294 Dean, DKU Graduate School of Nursing (Signature and Date) Digitally signed by ROMANO.CAROL.A.1032050294 Date: 2022.12.01 21:23:48 -0500'
In light of the above signatures, the project is approved.	
WOODBERRY.MITCHELL.WAYNE.1060957114 USUHS Vice President for Research (Signature and Date) Digitally signed by WOODBERRY.MITCHELL.WAYNE.1060957114 Date: 2023.01.11 11:55:00 -0500'	_____ Date

Appendix J
MTF IRB/PI Letter of Determination



DEPARTMENT OF THE AIR FORCE
60TH MEDICAL GROUP (AMC)

16 September 2022

FINAL IRB DETERMINATION – NON-HUMAN RESEARCH

Determination Date: 16 September 2022

PROJECT LEAD: Capt Jeremy Cooper, USAF, NC

IRB BIRDS Number: FDG20220090P

EIRB Reference Number: 953595

PROJECT TITLE: "Reduction and Prevention of Vaping Incidence in the Military"

1. You may begin your project, as you would any other clinical or operational activity, with the approval and sponsorship of your leadership.

Your project was determined on 16 September 2022 to be considered **not human research** as defined by DoD regulation 32 CFR 219 and FDA regulation 21 CFR 56. Continued IRB oversight for this activity is not required. The proposed project does not include non-routine intervention or interaction with a living individual for the primary purpose of obtaining data regarding the effect of the intervention or interaction, nor do the researchers obtain private, identifiable information about living individuals.

Since the IRB does not have regulatory oversight for your study, it is the investigator's responsibility to validate the study's scientific merit and research design and to ensure the conduct of the study is upheld by the highest ethical standards, as required by the Wing. Should you require assistance in reviewing the scientific merit and research design of your study, please contact the Protocol Office. Protection of subjects' rights safety and welfare and responsibility for protecting PHI/PII and research data now fall on the investigator and their commander.

In accord with DoDI 6000.08 any intramural funding of this study as research or as a clinical investigation may continue to be received or sought regardless of this IRB determination.

2. Your project has received a one-time research determination. If the goals and/or activities of the project change during the course of the project, or if new activities are proposed that would constitute human subjects research, re-contact the Protocol Office, so that a regulatory expert may determine whether or not the revised plan involves human subject research activities.

3. This project does not require an institutional update submission to the 60 MDG EDO. Your project will be administratively removed after 3 years from the original

determination date, without any further action. Contact the 60 MDG Protocol Office if you wish to extend this determination following the 3 years.

4. Contact the 60 MDG Protocol Office for review prior to submitting any work from this project for publication/ presentation. There is a specific 60 AMW PA form that is required in such instances. It may take 60 AMW PA two weeks to review and approve your work.

5. IAW DASD (HRPO) Operating Instructions 2019.10.03 this research will be documented and made available to the Defense Health Agency Office of Research Protections (DHA ORP) upon request. If DHA ORP disagrees with the Designated Reviewer's determination, the research study may be temporarily suspended until resolution.

6. If you have any questions, please contact the 60 MDG Protocol Office at (707) 423-7268 or by email at usaf.travis.60-mdg.mbx.60mdg-cifprotocoloffice@mail.mil. Please include your project title and IRB BIRDS number in all correspondence or inquiries.

WILLIAMS.BRA
DLEY.R.124721
4611

Digitally signed by
WILLIAMS.BRADLEY.R.124
7214611
Date: 2022.09.16 14:43:52
-07'00'


BRADLEY R. WILLIAMS, MD GS-13
60 MDG Exemption Determination Official

Appendix K PAO Clearance


PAO Clearance /Level of Dissemination Classific:

The PAO Clearance that is included in the fina state that the report can be archived in the "USU Archives." Prior to the USU/GSN presentation and submission of the fi students are required to seek out formal written approval fro Public Affairs Office (PAO of their clinical site) to authorize results in the following venues.


1. Abstract that is to be submitted for USU Resea
2. Poster that will be presented during USU Rese
3. Oral podium presentation of a summary of the
4. Approval to upload final report to the "USU A


<  Approvals  


Approval complete 
on Apr 13, 2023

 Start a new approval


3 Approvers

 Seibert, Diane
Approved

 Taylor, Laura
Approved

 USU Pub Clearance
Approved

Approval activity

Leave a comment... 

 USU Pub Clearance approved
4:01AM



TRAVIS AIR FORCE BASE
Security and Policy Review Program



SECURITY AND POLICY REVIEW WORKSHEET	
AUTHOR'S NAME: Maj Sussan Goldsworthy/Capt Jeremy Cooper	CASE NUMBER: 23-68
DOCUMENT TITLE: Reduction of Vaping Incidence in the Military	DATE SUBMITTED: 28 April 2023
OFFICE SYMBOL: SGXW	PHONE: [REDACTED]
DOCUMENT TYPE (CHECK ALL THAT APPLY)	
<input type="checkbox"/> ABSTRACT	<input type="checkbox"/> TECHNICAL REPORT
<input type="checkbox"/> THESIS	<input type="checkbox"/> WORKSHOP PAPER
<input type="checkbox"/> DISSERTATION	<input type="checkbox"/> BRIEFING CHARTS
<input type="checkbox"/> CONFERENCE PAPER	<input type="checkbox"/> PHOTO W/CAPTIONS
<input type="checkbox"/> SPEECH	<input type="checkbox"/> COURSE DESCRIPTION
<input type="checkbox"/> JOURNAL ARTICLE	<input type="checkbox"/> BROCHURE
<input type="checkbox"/> WEB PAGE	<input checked="" type="checkbox"/> DISPLAY/EXHIBIT
<input type="checkbox"/> SOCIAL MEDIA (Facebook page, Twitter account, etc.)	<input checked="" type="checkbox"/> OTHER: (Explain) <u>powerpoint presentation</u>
<input checked="" type="checkbox"/> TECHNICAL PAPER	
EVENT LOCATION: Uniformed Services University, Bethesda, Md	DATE NEEDED: 28 April 2023
Please list any comments or recommendations you may have in reference to the document you are submitting for review. Note any coordination has been performed in your organization. Also, include the POC and telephone number for the document.	
We are submitting an Evidence-based practice paper, poster, and powerpoint presentation. We are psychiatric Doctor of Nursing Practice students that completed an EBP project at Travis AFB. We are submitting our manuscript, poster, and powerpoint presentation for PAO approval. We got approval from the University PAO office, but also need Travis PAO approval. Thank you.	
FOR OFFICIAL PUBLIC AFFAIRS USE:	
DOCUMENT CLASSIFICATIONS: (CHECK ALL THAT APPLY)	
<input checked="" type="checkbox"/> UNCLASSIFIED, NOT SENSITIVE, TIMELY, ACCURATE, AND CURRENT	
<input type="checkbox"/> CONTAINS TECHNICAL, SCIENTIFIC, RESEARCH AND DEVELOPMENT INFO RESTRICTED IN AFI 61-204	
<input type="checkbox"/> SUBJECT TO PRIVACY ACT RESTRICTIONS	Suggested Mitigation: (if any)
<input type="checkbox"/> CONTAINS EXPORT CONTROLLED DATA (ITAR 120.10)	
<input type="checkbox"/> AGGREGATE INFO COMPROMISES CURRENT MIL OPS	
<input type="checkbox"/> CONTAINS PROPRIETARY INFO	
<input type="checkbox"/> CONTAINS COPYRIGHTED INFORMATION W/OUT PERMISSION OR/AND CONTAINS LOGOS AND TRADEMARKS THAT IMPLY GOVERNMENT ENDORSEMENT	
<input type="checkbox"/> INFORMATION CONTRARY TO OFFICIAL AF/DOD/or GOVERNMENT POLICY	
<input type="checkbox"/> OTHER CLASSIFICATION (Explain): _____	
ORIGINATOR SIGNATURE: COOPER.JEREMY.MICHAEL.1 187182065	DATE: 28 April, 2023
*TECHNICAL REVIEW SIGNATURE: (IF NEEDED) HUFFMAN.SARAH.L.10526 93795	DATE: 28 April 2013
*ADDITIONAL REVIEW SIGNATURE: (IF NEEDED)	DATE: _____
PUBLIC AFFAIRS OFFICER SIGNATURE: RACASNER.TONYA.A.12316771 31	DATE: 2 May 2023
<i>*60 AMW Public Affairs determines if additional signatures will be required for final clearance. Typical additional signatures can include OPSEC monitors, unit commanders, Higher Headquarters, or other federal agencies that have proprietary interest in submitted information.</i>	

Appendix L
DNP Project Completion Verification Form



Appendix G: Daniel K. Inouye Graduate School of Nursing
DNP Project Completion Verification Form

DOCTOR OF NURSING PRACTICE PROJECT
Completion Verification Form

The DNP Project titled:

Reduction of Vaping Incidence in the Military

was completed at:

by the following student(s):

Table with 3 columns: (type student name), (signature), (date). Rows include Maj Sussan Goldsworthy and Capt Jeremy Cooper with digital signatures and dates.

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation of DNP project to the leadership/stakeholders at the Phase II Site,
• Abstract/Impact Statement (Appendix F), and
• DNP Project written report.

Verified by:

Table with 3 columns: (type name), (signature), (date). Rows include Senior Mentor Lt Col Regina Owen, Team Mentors, and Phase II Site Director Lt Col Joseph Kelly with digital signatures and dates.

For RNA Students only - add the following additional signature for final verification of project completion:

RNA Project Director (type name), (Signature), (Date)