

Distribution Statement

Distribution A: Public Release.

The views presented here are those of the author and are not to be construed as official or reflecting the views of the Uniformed Services University of the Health Sciences, the Department of Defense or the U.S. Government.

Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care

Through Continuing Education and Training


Katrina A. Farrell & Kimberly M. Solari

Uniformed Services University of the Health Sciences


Copyright Acknowledgement Statement

"The author(s) hereby certify that the use of any original work by another author or copyrighted material used in the DNP project entitled: *"Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care Through Continuing Education and Training"* is either appropriately cited within the manuscript or used with formal written permission of copyright release by the owner of the original work."

"The views expressed in the presentation are those of the authors and do not necessarily reflect the official policy or position of the Uniformed Services University, Carl R. Darnall Army Medical Center, the Department of Defense, or the United States Government. There are no financial relationships that exist between the speakers and a commercial entity."



Katrina A. Farrell, BSN, RN, CPT, USA, FNP & WHNP Program
Daniel K. Inouye Graduate School of Nursing
Uniformed Services University
April 5, 2021



Kimberly M. Solari, BSN, RN, LTC, USA, FNP & WHNP Program
Daniel K. Inouye Graduate School of Nursing
Uniformed Services University
April 5, 2021

Table of Contents

Abstract 5

Introduction..... 6

Problem Significance 7

Relevance to Military Nursing..... 9

Clinical Question 10

Literature Review of Solutions 11

Focus Areas..... 12

Organizing Framework 12

Project Design..... 14

 General Approach..... 14

 Setting and Population 14

 Procedural Steps 15

 Potential Barriers Addressed..... 17

 Data Analysis Plan 18

 Sustainment and Dissemination Plan..... 18

HIPAA/Ethical Concerns and Safeguards 19

Results..... 20

 Analysis of Results..... 25

 Organizational Impact..... 27

 Future Directions for Research and Practice 30

Conclusion 31

References..... 33

INCREASING PRIMARY CARE LARC ACCESS	4
Appendix A: PRISMA Flow Chart.....	42
Appendix B: Organization Framework.....	43
Appendix C: Project Timeline	44
Appendix D: Provider Survey.....	45
Appendix E: CITI Certificates	47
Appendix F: USU (VPR) Form 3202N	49
Appendix G: IRB Letter of Determination	50
Appendix H: PAO Clearance.....	51
Appendix I: DNP Project Completion Verification Form	52

Abstract

Phase II Site(s): Fort Hood, TX - Carl R. Darnall Army Medical Center

Project Title: Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care Through Continuing Education and Training

Authors: Katrina A. Farrell, Kimberly M. Solari

Background: Barriers to long-acting reversible contraception exist for women in the military, especially those serving in the Army. These barriers contribute to a higher unintended pregnancy rate, causing significant health, financial, and readiness burdens on the service member and Military Health System.

Purpose: The project promoted best practices for contraception services to expand local troop clinic capability to provide a patient's chosen contraceptive at the time requested. The intervention focused on clinician barriers to contraception access within the primary care setting, specifically to increase provider competencies and comfort with comprehensive contraceptive counseling and services, including intrauterine devices and implant insertion.

Project Design: The project design was a provider-targeted educational and training module based on the 2016 US Selected Practice Recommendations for Contraceptive Use and 2016 US Medical Eligibility Criteria for Contraceptive Use. A pre-intervention and post-intervention survey assessed providers' understanding of contraception best practices and their confidence in offering all contraceptive options, including LARC.

Analysis of Results: Eight (53%) of fifteen participants did not have credentials to perform any LARC procedure. After training and education, eight participants were lost to follow up. Provider confidence, attitude, knowledge, or experience did not significantly change. However, there was a net increase in LARC procedures completed in targeted clinics and a net decrease in Women's Health Clinic referrals for contraceptive-related services.

Organizational Impact: LARC is the most effective option for preventing unintended pregnancy, yet many providers do not have the credentials to do it. Training opportunities support best practices and moves the organization closer to the gold standard of same day contraceptive access to all eligible options, including LARCs. Provider training for these services will decrease unnecessary time and costs for multiple appointments, improve military readiness, reduce unplanned pregnancies among soldiers, and optimize reproductive health for a medically ready force.

Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care
Through Continuing Education and Training

Introduction

As of 2013, up to 43% percent of pregnancies among women in the United States are considered unintended or unplanned (US Department of Health and Human Services [DHHS], Office of Disease Prevention and Health Promotion [ODPHP], 2020). An unplanned pregnancy is a pregnancy that occurs when not desired currently or within the next two years (American College of Obstetricians and Gynecologists [ACOG], Committee on Gynecologic Practice, 2015; ACOG, Committee on Practice Bulletins, 2017). Adverse effects of unplanned pregnancies include clinical impacts, such as poor maternal and newborn outcomes and increased financial costs to the individual and society (Curtis et al., 2016; Madden et al., 2018). Patient barriers to effective family planning include a knowledge deficit of contraceptive options, upfront costs, varying provider practices, and requirements for multiple appointments for receipt and continuation of contraception. These are significant obstacles for patients who specifically desire long-acting reversible contraceptives, or LARCs (Castleberry, Stark, Schulkin, & Grossman, 2019).

There are two types of LARC options: intrauterine devices (IUDs) and etonogestrel rod implants. These contraceptive devices provide the most protection from unplanned pregnancy while allowing a quick return to fertility upon discontinuation. Current Center for Disease Control (CDC) evidence-based recommendations are to provide comprehensive contraceptive counseling and services to patients who desire birth control, include offering LARC to all eligible candidates, providing same-day insertion upon request, and reducing unneeded tests that

delay IUD insertion (CDC, National Center for Chronic Disease Prevention and Health Promotion [NCCDPHP], Division of Reproductive Health, 2016; Curtis et al., 2016).

A significant barrier noted in the literature is the lack of providers knowledgeable about and trained in LARC insertion and removals (ACOG, Committee on Healthcare for Underserved Women, 2015; Ouyang, Peng, Botfield, & McGeechan, 2019). The project goal was to reduce patient barriers to access her preferred contraception, including LARCs, by ensuring primary care providers for active-duty women are confident and competent in comprehensive contraceptive services.

Problem Significance

As described previously, the number of unplanned pregnancies in the US remains high despite a variety of available contraceptive options due to incorrect usage (Buckel, Maddipati, Goodman, Peipert & Madden. 2019). The most commonly used options, combined oral contraceptives, and condoms rely on the user's consistency and proper use for its ideal protection rate. However, even with perfect use, anywhere from 6% to over 18% of users will become pregnant, depending on the contraceptive method (Buckel et al., 2019). LARCs are effective for three to ten years, with an annual pregnancy rate occurring among less than 1% of users. LARCs offer the advantage of long-term protection after insertion, removing the uncertainties of patient compliance from affecting contraceptive protection (ACOG, Committee on Gynecologic Practice, 2015).

The majority of sexually active women with male partners report using at least one contraception method. Yet, serious impediments to consistent birth control access remain (ACOG, Committee on Healthcare for Underserved Women, 2015). In the Contraceptive CHOICE project, up to 75% of women chose a LARC method when offered standardized

contraception counseling and a free method of their choice (ACOG, Committee on Practice Bulletins, 2017). The CHOICE study considered patient contraceptive choice after providers presented all options according to tiers of effectiveness, with LARCs as first-line options to all eligible patients, and removing cost barriers (Secura, Allsworth, Madden, Mullersman, & Peipert, 2010). However, any requirement to return for additional appointments is a significant barrier. An estimated 86.4% of obstetrician-gynecologist (OBGYN) providers require at least two visits before an IUD insertion for pregnancy, cervical cancer screening, or sexually transmitted infections (STIs) testing (Luchowski et al., 2014). Such delays in accessing contraception increase women's risk for unplanned pregnancy (ACOG, Committee on Healthcare for Underserved Women, 2015).

Within the Military Health System (MHS), all contraceptives, including LARCs, are offered at no cost to the patient. Despite this benefit, only a third of active-duty women use any form of effective birth control after completion of basic training (Roberts, Smalley, Weir, & Adelman, 2019). Policies that introduce contraceptive access differ across the Services, with the Navy integrating the most comprehensive contraceptive education and access program. Army recruits were the least likely to use highly effective contraceptive methods and more likely to experience a pregnancy in the first two years of their career (Roberts et al., 2019). An examination of contraceptive use among military recruits by Roberts et al. (2019) noted that soldiers did not receive comprehensive contraceptive counseling based on tiers of effectiveness, and access to LARC required a referral to specialty care.

Studies have shown that the rate of unintended pregnancy among military women is comparatively higher than the national estimates, as many as 65% of service member pregnancies. Overall, about 20% of servicewomen described difficulty obtaining contraception

before deployment (Harrington, Shaw, & Shaw, 2017). In a review of women serving from 2008-2013, 54% of those who deployed received a contraceptive prescription before deployment, and access to specific contraceptives is limited in a deployed setting (Holt, Grindlay, Taskier, & Grossman, 2011; Roberts et al., 2019; Witkop, Webber, Chu, & Clark, 2017). Allowing patients to receive their contraception choice in a single appointment removes unnecessary costs and time, benefiting service members and their units as they do not require additional time off or incur training absences (Luchowski et al., 2014; Roberts et al., 2019).

Increasing utilization of LARC would also decrease long-term costs to the MHS. A cost analysis of levonorgestrel IUD use among active-duty women projected preventing 794 unintended pregnancies and retaining over \$3 million pregnancy-related annual cost savings with just 5% use. In contrast, if a service member ends up considering an elective termination for an unplanned pregnancy, the procedure is not currently covered by Tricare and incurs personal costs to the service member (Heitmann, Mumford, Hill, & Armstrong, 2014). This procedure may incur a profile for physical limitations, including time off for recovery - though there is no standardized profile and is at the provider's discretion (US Army Public Health Command (Provisional), 2010). Other policies requiring unit command and hospital command approval for elective procedures stand as obstacles to care with civilian healthcare facilities.

Relevance to Military Nursing

Optimizing reproductive health is essential to maintaining operational function and women's medical readiness to deploy at a moment's notice. During the fiscal year 2017, females comprised 17.5% of the total military force (Department of Defense [DoD], Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy [ODASD (MC&FP)], 2017). Unplanned pregnancies can erode individual and organizational operational readiness.

During a 15-month deployment in Iraq, an Army Brigade Combat team evacuated 11% of their female soldiers due to pregnancy-related conditions (Belmont et al., 2010). Aside from the obvious pregnancy preventative purposes of LARC, some options also provide the benefit of menses suppression or reduction of bleeding. These potential benefits of LARC may interest servicewomen, especially those preparing to operate in field environments (Christopher & Miller, 2007; Holt et al., 2011).

Advanced practice registered nurses (APRNs) are among the clinicians who provide patient-centered, comprehensive care to active-duty women and other female beneficiaries within the MHS. APRNs are in an optimal position within the Army Soldier Centered Medical Home (SCMH) to bridge gaps in access to contraceptives, including IUDs and implants. APRNs can obtain the clinical skills needed to place LARCs with on-the-job training and initial supervision by other experienced providers (Kelly, Cheng, Carlson, & Witt, 2017).

Reducing provider limitations and patient barriers to same-day LARC initiation addresses the Defense Health Agency (DHA)'s Quadruple Aim goals to "Increase Readiness" by contributing to a medically ready force, as well as providing "Better Care" and access to an essential service. Working towards these aims also meets the DHA's goals, "Empower and Care for our people" and "Co-create Optimal Outcomes for Health, Well-being, and Readiness" (DHA, n.d.).

Clinical Question

After reviewing the current clinical recommendations for contraceptives, we were interested in identifying clinician barriers to providing these needed services. Previous projects were implemented at the potential project site to reduce patient-oriented barriers and knowledge deficits through patient contraceptive counseling interventions. The clinical question guiding this

project was: "In active-duty service members of childbearing age, what barriers exist that prevent same-day access to the contraception of choice in primary care?"

Literature Review of Solutions

The previously discussed review of the background literature led to our PICO question to guide a focused literature search. The PICO question was: "For primary care providers (P), does long-acting reversible contraception (LARC) training and continuing education (I) compared to current practices (C) reduce barriers to patients' choice and uptake for LARC (O)?"

PubMed, EBSCOhost, and Embase databases were used for the evidence search (Appendix A). Key MESH search terms included "long-acting reversible contraception," "intrauterine devices," "education, continuing," "primary health care," "physicians," "nurse practitioners," and "physician assistants." Searches of titles and abstracts included the following key terms: IUD, training, continuing education, providers, and clinicians (including physicians, nurse practitioners, and physician assistants), primary care. Additional search terms were added to target our outcome of interest: access, acceptance, initiat*, "quick start," uptake, or choice.

Inclusion criteria were peer-reviewed, written in English, and published in the last seven years (2012 to 2019). This timeframe was chosen to include the most up-to-date literature. "Covidence", an online software system, discarded 198 duplicates from the initial 478 results. The team reviewed titles and abstracts for relevance to the clinical question, patient-targeted interventions, studies focused on funding support, and studies that only included postpartum or post-abortion settings, which led to discarding 255 of 284 articles. Twenty-nine full-text articles were reviewed with no limits placed on study design type. This review eliminated articles that did not focus on provider training as the observed intervention. Ten full-text articles remained.

The team evaluated the final articles for review against the National Health and Medical Research Council hierarchy of evidence scale: one Level I Systematic review, four Level II randomized control trials, and five Level III quasi-experimental studies (Evans, 2003; Lobiondo-Wood & Haber, 2018). Sample sizes ranged from 30 to 576 providers or 1008 to 7331 female patients, depending on a study's focus outcomes. Four studies specifically identified LARC patient uptake as their outcome, whereas six focused on provider comfort and confidence in LARC provision.

Focus Areas

The primary goal was to increase provider knowledge, competencies, and comfort with providing comprehensive contraceptive counseling and services, including IUD and implant insertion. Secondary goals included increasing the pre-and post-intervention numbers of LARC procedures in primary care and decreasing the number of referrals to Women's Health Clinic for LARC procedures. This project's long-term purpose was to promote patient-centered care to provide the patient's contraception of choice at the time requested, including LARCs. Achieving these goals will reduce barriers to Active Duty patient access to LARC within the primary care setting.

Organizing Framework

The Clinical Practice Guideline (CPG) Implementation Model guided the development of the intervention design (DiCenso et al., 2002). This model's focus considers a guided, six-step approach to developing implementation strategies for adopting CPGs. The framework outlines the process by which this project was designed: (1) identifying a CPG, (2) engaging stakeholders, (3) assessing the organizational environment for implementation readiness, (4) addressing identified readiness gaps with evidence-based implementation strategies, (5)

planning, conducting, and evaluating the implementation, and (6) addressing resources required. Feedback loops from stakeholders and available resources also influence the other aspects of planning and project design (White, Dudley-Brown, & Terhaar, 2016).

The CPG model fit the project because the overarching goal was to facilitate clinical practice according to the most recent contraceptive guidelines, the CDC's *US Selected Practice Recommendations (SPR) for Contraceptive Use* (CDC, NCCDPHP, Division of Reproductive Health, 2016). Each step in the framework guided the implementation of the project design following the local setting.

The project team reviewed the selected CPG on contraceptive practices and identified the critical component that the intervention targeted: removing unnecessary barriers to same-day contraceptive access. Ongoing stakeholder engagement consisted of electronic and telephone communication between the project team and the site director, local staff, and previous DNP project teams who have targeted contraceptive practices at the installation. Upon arrival at the clinical site, the project team assessed the local clinic's readiness to implement the best contraceptive practices. This assessment involved conducting retrospective record reviews within the context of local clinical practices and provider-patient workflow elicited from stakeholder engagement. The next step was to conduct and evaluate the educational intervention tailored to address the previous step's readiness needs. Lastly, the post-intervention evaluation was revisited with involved stakeholders to determine any changes to required resources for project sustainment.

Project Design

General Approach

This project was a quality improvement project in support of the *CDC's US SPR for Contraceptive Use, 2016* through a tailored provider continuing education and training with pre/post- education intervention outcome measurements. The intervention consisted of a continuing education module or in-service that outlined the *2016 US Medical Eligibility Criteria (US MEC) for Contraceptive Use* and practical strategies to implement comprehensive contraceptive counseling in practice (Curtis et al., 2016). Providers were also offered hands-on or simulated training for skills competencies.

Setting and Population

This project took place at the military treatment facility (MTF) at Fort Hood, TX, between June 2020 to February 2021. Fort Hood is a military installation that houses eight brigades, three divisions, and multiple tenant units. Carl R. Darnall Army Medical Center (CRDAMC) and its 11 surrounding clinics serve the Active Duty population of over 42,000 personnel and their dependents (CRDAMC, 2020). Over 2,000 healthcare staff provide extensive medical services, including primary care, outpatient specialty clinics, emergency services, surgical capabilities, and other specialties, such as labor and delivery, pediatrics, and mental health. Laboratory, radiology, pharmacy, and various telehealth services support CRDAMC inpatient services and outpatient clinics.

This project was implemented at Monroe Health Clinic with the Thoroughbred team to optimize our reach to physicians, nurse practitioners, and physician assistants serving as primary care managers for active-duty personnel. At the time of implementation, the Monroe clinic serviced approximately 9,700 soldiers from the 1st Brigade Combat Team (BCT), Headquarters

and Headquarters Company (HHC), and 2nd BCT of the 1st Cavalry Division. During project implementation, high interest in LARC training led to extending invitations to providers from other similarly empaneled clinics within the Department of Soldier Medicine. Providers from Thomas Moore Health Clinic (Blue and Green Teams), Bennett Clinic (Stryker and Wolverine Teams), and TMC-12 (Spirit Team) attended training sessions in addition to Monroe Health Clinic providers.

Procedural Steps

Local clinical leadership, including the Phase II Clinical Site Coordinator, were engaged in gathering background information on access to long-acting contraceptives, per the clinical practice recommendations outlined in our selected CPG. After obtaining IRB non-research determination and approval from the CRDAMC Human Research Protections Office, the team met regularly with key stakeholders, clinic leaders, and persons of expertise to identify the site's strengths and weaknesses, determine tailored needs, and update planning and execution.

Key stakeholder engagement was an integral and iterative step in assessing organizational readiness for project implementation. Non-credentialed primary care providers gave feedback that identified local gaps in contraception practice. Simultaneously, the team requested a retrospective chart review in Armed Forces Health Longitudinal Technology Application (ALTHA), the military's current electronic health record. The project group solicited data from the coding office for baseline numbers of monthly in-clinic LARC procedures and referrals to the Women's Health Clinic for contraception-related reasons during the prior year.

The team coordinated tailored contraception counseling, continuing education opportunities, and hands-on LARC device training to achieve the project's goals. The didactic content addressed comprehensive contraceptive counseling in practice, which included *US SPR*

for Contraceptive Use, 2016 and *2016 US MEC for Contraceptive Use* clinical guidelines and options counseling based on tiers of effectiveness and patient priorities (Curtis et al., 2016). Initially, the team planned in-service opportunities during scheduled training days (i.e., first and third Fridays) or weekends to reach as many untrained staff as possible. Given the unpredictable operation changes during the 2020 novel coronavirus (COVID-19) pandemic, the team disseminated educational content via an online media format. The educational content included free CDC continuing medical education (CME) modules on the *2016 US MEC for Contraceptive Use* and *US SPR for Contraceptive Use, 2016*. The project team also arranged hands-on skills training through the device manufacturers and utilized video conference platform as an adjunct. Any interested providers from all SCMH clinics received an email invitation for these hands-on training sessions.

The team completed a baseline assessment of provider credentialing, knowledge, attitude, and confidence in contraceptive services before offering the educational intervention. To determine a baseline number of providers credentialed in LARC services, the team contacted the credentialing office who was unable to provide the information.

The participating providers responded to an administered five-point Likert survey to assess their knowledge, attitude, and confidence. The US SPR clinical recommendations guided the constructs of each itemized question. Providers had access to the pre-intervention survey by either a mobile QR code to the online version or a hard copy upon training check-in to maximize touchless interaction for infection control purposes. Providers were not required to provide personally-identifying information within the survey questions to maintain anonymity. The team kept a sign-in sheet with the name and emails of participants to issue training certificates. The group then gathered post-implementation data to compare changes in provider knowledge,

attitude, and skills confidence using the same survey in a strictly online format. A copy of the survey is available in Appendix D.

The team evaluated secondary outcomes by conducting post-implementation chart reviews to assess changes, if any, in the monthly number of in-clinic LARC procedures and referrals to the Women's Health Clinic. Secondary outcome data was collected over the three months following the training sessions until February 2021. The team tracked data by Medical Expense and Performance Reporting System (MEPRS) codes, contraception-related International Classification of Diseases, Tenth Edition (ICD-10) codes, and LARC-related Current Procedural Terminology (CPT) codes.

Potential Barriers Addressed

The team identified three potential barriers across three themes: priorities, time, and resource availability. The first barrier was the anticipated conflict in both military and medical training priorities. To diminish these concerns, the project team conducted meetings with essential leadership to increase buy-in by highlighting the project's importance, addressing concerns from their perspective, and discussing its short and long-term significance. However, the project's design and provider participation met with conflicting requirements for medical services and staff shifts during the COVID-19 pandemic.

Another barrier was securing adequate time for training. Collaboration with service line and clinic leadership facilitated scheduling the class in pre-established training time, provide desk-side training during scheduled training days, and ideally for long-term sustainment incorporating the activity into orientation for onboarding new providers.

The final barrier to overcome was available resources. Device manufacturers have a vested interest in training eligible clinicians to use their products, considering Tricare reimburses

these devices. Regular scheduling with the pharmaceutical or device representatives for hands-on training allowed for maximum facilitation of skills training; future correspondences can facilitate opportunities for onboarding providers. As of mid-2020, manufacturers had limited or temporarily halted in-person training due to COVID-19. Accessible training aids for desk-side training to bridge the gap between scheduled training events and practice could help alleviate the barriers.

Data Analysis Plan

The team partnered with a statistician to analyze our primary and secondary outcomes to evaluate the educational intervention's success. The team initially planned to use paired *t*-tests to assess for significant changes in pre-test and post-test scores for providers' knowledge, attitudes, experience, and confidence with providing LARC services. Wilcoxon tests were the planned alternative if the data was not normally distributed.

Evaluation of secondary outcomes involved measuring the clinic's encounters for IUD and implant insertions. The plan was to use paired *t*-tests to evaluate the differences between pre-intervention and post-intervention numbers of in-clinic LARC provisions and the number of referrals to Women's Health for LARC procedures.

Sustainment and Dissemination Plan

Sustainment will require the work of an interdisciplinary team: The Phase II site director, providers, clinic leadership, hospital credentialing, hospital education, simulation lab, other key clinic staff members, and commanders of target units. A best practice champion for contraceptive services is instrumental for sustainment. A clinic champion could arrange for continuing medical education (CME) opportunities and assess the need for hands-on training from device representatives if the clinic credential level decreases below 50%.

The Simulation Lab also has the potential to facilitate an enduring component of our training scheduling and resources. One possibility for project sustainment is an annual LARC skills training or refresher event hosted by a clinic champion at the local Simulation lab or one of the clinics. Currently, outpatient clinics have scheduled biweekly training time built into the schedule; clinic leadership could coordinate one date in the annual calendar to be a LARC skills refresher course. To reinforce the continuing didactic education on counseling patients, the team developed an essential provider toolkit for the clinic containing visual aids for contraceptive effectiveness to assist with counseling and references for best practices in contraceptive counseling. An electronic copy of the training modules has been stored on a clinic-based server to ease access and updating.

Dissemination of the project findings took place for Monroe clinic, CRDAMC leadership, and other critical stakeholders in April 2021. Project result dissemination occurred through a narrated poster and summary slide deck during Research Week at Uniformed Services University of the Health Sciences before graduation in May 2021.

HIPAA/Ethical Concerns and Safeguards

This project was to implement an evidence-based practice guideline; the project team collected sensitive data collection to understand baseline and post-implementation numbers of credentialed providers, LARC use rates, and referral rates to WH/OBGYN services for efficacy of implementation.

Personal Identifying Information (PII) was obscured during chart reviews or other electronic data mining and not recorded in our records. When searching for incidence of diagnosis or referral, utilizing ICD-10 or procedure codes within the Composite Health Care System (CHCS) also mitigated the need to search data by PII.

Patient autonomy is essential. Educational content was comprehensive and unbiased to ensure balanced patient counseling to minimize bias for using one birth control method over another. The design of provider training was to increase the availability and access to LARC while avoiding bias by counseling patients on all contraceptives for which they are eligible or interested (Buckel et al., 2018). The framework provided in the CDC's *US Selected Practice Recommendations for Contraceptive Use, 2016* provides the most updated practice recommendations for education for counseling and insertion. These guidelines help minimize bias and fully inform patients of all their available contraceptive options.

Results

One iteration of hormonal implant insertion training and one iteration of IUD insertion training undertaken in November 2020. Fifteen providers participated in the training, which included six physicians (five MDs and one DO), seven physician assistants (PA), one nurse practitioner, and one student. Eight (53%) providers did not hold credentials in any LARC procedure, and only one had credentialing in both implants and intrauterine devices before training sessions.

The team emailed training participants a free CME activity from the CDC website on the *2016 US Selected Practice Recommendations for Contraceptive Use* and *2016 US Medical Eligibility Criteria for Contraceptive Use* (CDC, NCCDPHP, Division of Reproductive Health, 2020). All participants received comprehensive contraception education via email following their training iteration. The same questionnaire used for baseline assessment was sent as a follow-up email; after completing CME and training sessions. Seven providers completed post-intervention surveys. The project group used descriptive statistics to evaluate the responses.

The majority of respondents for both pre and post-intervention surveys reported more positive attitudes to comprehensive contraceptive counseling. The use of LARCs (Figure 1) depicts the frequency of responses for questions targeting attitude, experience, and confidence. Most providers felt experienced in counseling patients on the risks, benefits, and side effects of contraceptive options, including IUDs and implants. However, their experience did not seem indicative of confidence as more than 50% of providers were either "not at all confident" or "not so confident" in providing comprehensive contraceptive counseling. Additionally, more than half of the surveys indicated providers were not confident in their IUD insertion skills for multiparous women.

Figure 1

Provider Attitudes, Experience, and Confidence Pre/Post Survey Responses

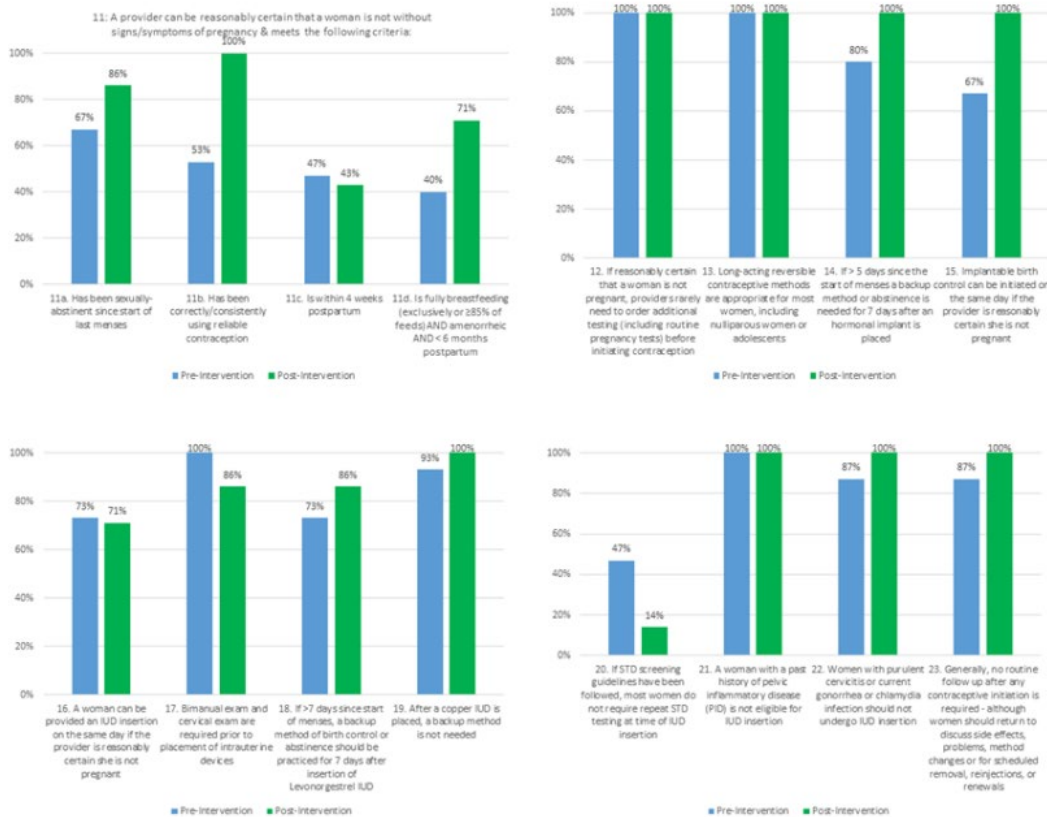


Note. These graphs depict the proportion of responses for Likert-style survey items from Appendix D, categorized into relevant attributes. There were 15 baseline survey responses and seven post-intervention responses. A statistical comparison could not be achieved between baseline and post-intervention answers due to attrition.

There were 16 items on the survey categorized as "Knowledge" based questions (Figure 2). Three of 16 items were answered correctly by all respondents in both surveys. In total, 12 of 16 items had more post-intervention responses answered correctly at similar or higher percentages than baseline surveys.

Figure 2

Provider Knowledge in Pre/Post Survey Responses



Note. These graphs depict the proportion of correct responses for true/false survey items from Appendix D. Questions based on the 2016 US Selected Practice Recommendations for Contraceptive Use and 2016 US Medical Eligibility Criteria for Contraceptive Use. There were 15 baseline and seven post-intervention survey responses.

Tracked CPT Codes for LARC procedures included IUD insertion, IUD removal, contraceptive implant insertion, implant removal, and implant replacement. There was a net increase in LARC procedures completed in targeted clinics (Table 1). There was also a net increase in contraceptive counseling encounters within primary care clinics compared to the same months a year prior (Table 2).

Table 1

Summary of # of LARC Procedures by Clinic

Clinic	Pre- Intervention No COVID	Pre- Intervention COVID OPS	Post- Intervention	Δ No COVID to Post	Δ COVID OPS to Post
BHZG	4	7	4	0	-3
BHZA	5	12	8	3	-4
BHZB	3	1	7	4	6
BHZE	1	1	1	0	0
BHZJ	2	0	9	7	9
BHZK	0	0	0	0	0
All Clinics	15	21	29	+14	+8

Table 2

Summary of # of Encounters for Contraceptive Counseling by Clinic

Clinic	Pre- Intervention No COVID	Pre- Intervention COVID OPS	Post- Intervention	Δ No COVID to Post	Δ COVID OPS to Post
BHZG	6	7	6	0	-1
BHZA	6	10	4	-2	-6
BHZB	3	0	2	-1	2
BHZE	5	9	6	1	-3
BHZJ	12	32	28	16	-4
BHZK	4	1	0	-4	-1
All Clinics	36	59	46	+10	-13

Contraception-related referrals to the Women's Health Clinic decreased for four of six clinics (Table 3). In comparison to both pre-intervention periods before and after COVID restrictions, there was a net decrease in referrals to the Women's Health Clinic for contraceptive-related services.

Table 3

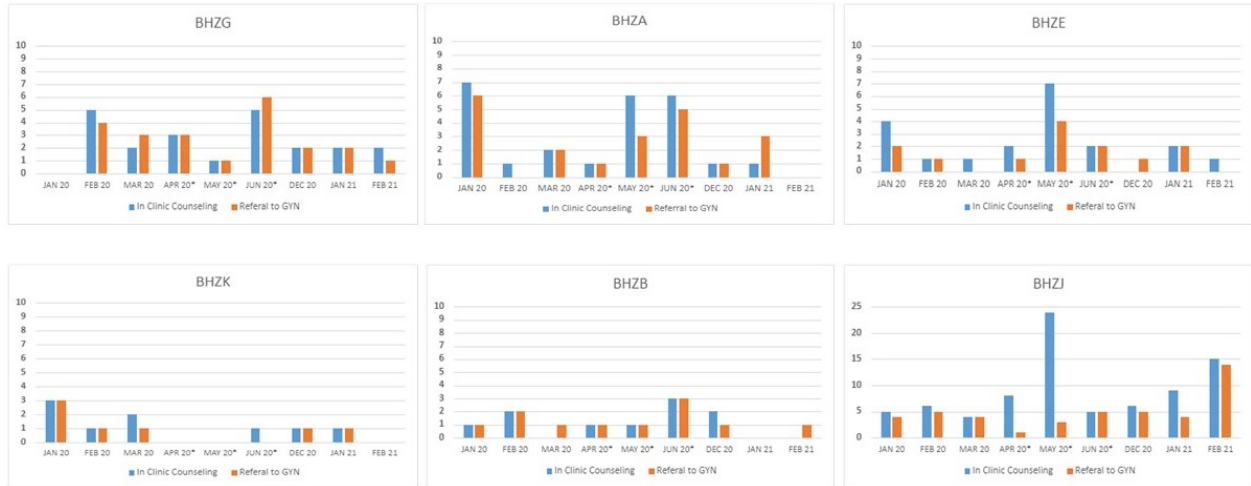
Clinic Referrals to Women's Health Clinic for Contraception

Clinic	Pre- Intervention No COVID	Pre- Intervention COVID OPS	Post- Intervention	Δ No COVID to Post	Δ COVID OPS to Post
BHZG	7	10	5	-2	-5
BHZA	8	9	4	-4	-5
BHZZ	4	5	2	-2	-3
BHZE	3	7	3	0	-4
BHZJ	13	9	23	10	14
BHZK	5	0	2	-3	2
All Clinics	40	40	39	-1	-1

The Quality Management Office pulled the number of primary care encounters for contraceptive counseling using ICD-10 code Z30.09, "Encounter for other general counseling and advice on contraception," and filtered referrals to the Women's Health Clinic by any ICD-10 codes related to contraception counseling, prescription, and LARC device management. Only two clinics had fewer referrals to Women's Health Clinic than their number of contraceptive counseling appointments over the post-intervention period (Figure 3). Three clinics had an equal number of referrals and in-clinic appointments for contraceptive counseling over three months. One outlier TMC (BHZJ) completed notably more in-clinic encounters for contraceptive counseling compared to other sites.

Figure 3

Comparing Primary Care Contraceptive Counseling to Specialty Referrals



Note. This figure compares each clinic's number of encounters for contraceptive counseling to the number of referrals to the Women's Health Clinic.

* The months of April through June of 2020 indicate time assessed pre-intervention but during COVID-19 restricted operations.

Analysis of Results

The project required ongoing flexibility during implementation. The team initially intended to isolate Monroe Clinic providers; high interest among the Department of Soldier Medicine (DSM) led to training other providers empaneled at other Troop Medical Clinics (TMCs) across Ft. Hood. Furthermore, company safety policy regarding local COVID-19 infection rates constrained the pharmaceutical representatives' training date availability. Fluctuating local infection rates impacted the manufacturer representative's ability to travel into Bell County. After initial training sessions for each type of LARC, local transmission rates started to climb, limiting plans to repeat sessions in close intervals. Restricting the number of training days also reduced the number of participating providers and the data collected.

Several additional limitations prevented the inferential analyses of our post-intervention data as initially planned. Three months following the last training session, four providers were lost to deployment, Permanent Change of Station (PCS), or Expiration of Term of Service (ETS), and did not provide post-survey responses. Four other providers did not return post-intervention responses after several electronic and attempted face-to-face follow-ups. Due to considerable attrition of a small anonymous sample, inferential analyses were not possible.

Quality management staff tabulated encounters coded for contraceptive management at discrete periods. To better understand local contraceptive demand, pre-intervention periods included quarters before (January to March 2020) and during restricted operations due to the COVID-19 pandemic (April to June 2020). Additionally, organizational restructuring led to original target providers at Monroe Clinic switching locations with different providers at Thomas Moore Clinic after the training. New MEPRS codes tracked post-intervention procedures and referrals. Since post-intervention numbers could not be matched exactly to pre-intervention data, paired *t*-test analyses could not be completed. Instead, the total numbers are reported across the three time periods described in Tables 1-3. The new MEPRS codes also included providers not assigned to the original clinic during pre-intervention periods. The post-intervention totals for the clinics of interest did encompass all encounter data, including from other providers who did not attend the training.

We could not effectively draw inferences between pre and post-survey data due to provider attrition. Even if response rates had been consistent, this project's three-month follow-up period was likely too short to evaluate for significant changes in attitudes, experience, knowledge, and confidence. Thompson et al. (2018) compared baseline and post-data one year after providing contraceptive training to 576 clinical staff. Their study was also not immune to

decreased survey response, as they had lost 31% of respondents to staff turnover. However, there were statistically significant improvements in provider attitudes, knowledge, and experience for LARC devices a year after the training, despite participant attrition. Thompson et al. (2016) followed LARC initiation rates of the same program and found that women who sought care at an intervention clinic were still more likely to receive LARC.

Another military quality improvement project by Maciuba and Chen (2019) at Walter Reed National Military Medical Center (WRNMMC) in Bethesda, MD, implemented a focused contraception curriculum with contraceptive implant training to internal medicine residents. Despite their larger cohort of providers, low survey response rates also made it difficult to assess if the program significantly improved contraception counseling and prescribing. They found that skills and attitudes improved among participating first and second-year residents but did not significantly improve their confidence (Maciuba & Chen, 2019).

Though there were fewer primary care appointments for contraceptive counseling compared to the previous summer, demand for contraceptive services still existed. If respondents and clinics could be reevaluated a year following the project, the project team would obtain a more precise depiction of LARC competencies and their effect on contraceptive access within the Department of Soldier Medicine.

Organizational Impact

All women should have control over the decision of if and when to have children, which requires access to the needed patient education and contraceptive services to meet their needs (ACOG, Committee on Healthcare for Underserved Women, 2015). Barriers and delays to contraceptive access impact women throughout the US, but obstacles should not affect military service members whose health insurance completely covers contraception. The MHS has the

potential to help all female soldiers meet their reproductive goals in conjunction with their desires and career plans.

Assessment of soldier's medical readiness is performed under various Medical Readiness Categories (MRC). Soldiers who have a deployment limiting condition fall under MRC3 ("Not Medically Ready"). Pregnancy is an MRC3 profile, alongside seriously limiting conditions, hospitalizations, and complex recovery and rehabilitations (Department of the Army, 2019). Commanders should have a vested interest in resources that reduce unintended pregnancies among their soldiers, as these are preventable reductions in their unit's readiness metrics. Unintended pregnancies account for many of the commander's non-deployable MRC3 numbers in young, single soldiers who had barriers to preventing pregnancy. Unintended pregnancies are a preventable readiness issue, and yet they still occur.

For illustrative purposes and the potential impact for unit readiness among providers themselves, the team also reached out to their unit's Troop Command Surgeon. The Troop Command Surgeon reviewed their unit's data through the Army's online suite, Medical Operation Data System (MODS), which tracks soldiers' medical readiness for deployment. During March 2021, pregnancy-related profiles made up 12% of non-deployable profiles amongst military personnel assigned to CRDAMC. Information distinguishing planned versus unintended pregnancies was not available (MODS, 2021). If unit providers are confident and competent in their ability to provide comprehensive contraception, they could potentially halve their pregnancy-related MRC3 profiles (Harrington et al., 2017).

Army Regulation 600-8-10 recent updates allow female soldiers up to 12 weeks of maternity leave (Department of the Army, 2020). The National Defense Authorization Act (NDAA) 2020, passed by Congress, allows women to be non-deployable for a year after

delivery. In summary, a service member will be non-deployable for at minimum 21 months throughout their pregnancy and the postpartum period. A single unintended pregnancy will cost that soldier's unit a preventable loss of 480 person-hours during maternity leave and another unit's 3,360 person-hours loss related to backfill for deployments and training exercises.

This project is the most recent of three independent DNP projects implemented at Fort Hood, targeting its state of readiness by decreasing the rate of unintended pregnancy through provider knowledge, contraceptive procedure skills, and patient education on contraception. The longstanding practice involves multiple touchpoints before a patient has an appointment to receive contraception. For soldiers, the TMCs serve as entry points where their assigned primary care provider can initiate contraception there, though not necessarily on the same day. If a TMC does not have LARC services, the soldier will be referred to the Women's Health Clinic or the Family Medicine Residency Clinic (FMRC) procedure clinic to initiate their contraceptive of choice. Wait times for these appointments vary, but regardless, referrals cause a preventable delay in access to care.

Montgomery and Patrician (2014) initiated a pilot project with a pre-and post-test design employed recruiting transitional female soldiers or those at their first duty assignment. The intervention was a comprehensive class addressing reproduction, sexually transmitted infections, and contraception. The investigators made appointments for those interested in obtaining contraception with follow-up phone calls at the one and four-month marks. This study enrolled 92 Soldiers with 26% lost to follow-up; of the remainder, there was a 1% unintended pregnancy rate, 4% discontinuation of contraception due to side effects or desired fertility, and 95% continuation of contraceptive use. Montgomery and Patrician concluded that a similar program

disseminated across the MHS would be highly effective in curbing high unintended pregnancy rates.

The second project conducted from 2016 to 2017 had a three-pronged approach: utilizing a pre-deployment contraception education class, an information booth set up at a health fair, and two Nexplanon insertion training sessions for non-credentialed primary care providers. Their sessions allowed 193 soldiers of all genders to receive contraceptive education. Twenty providers attended Nexplanon class, increasing the number of trained providers by 25% in two clinics and 33% in an additional two clinics. Rau, Stallings, and Varisce (2017) reported an increase in Nexplanon procedures of 88% and a 125% increase in the use of Nexplanon among soldiers ages 18-24 years old at Fort Hood.

These projects identify a continued need for a comprehensive contraception program at Ft. Hood. The staff turnover is an organizational barrier that may significantly impact sustaining a perishable skill that is typically not a standard part of training for all providers. Due to ETS, PCS, and deployment, the military attrition rate may be around 25% (Marrone, 2020; Under Secretary of Defense [Comptroller], 2000;). Therefore, a sustainment plan is critical to ensure the continuation of this much-needed program at the MTF.

Future Directions for Research and Practice

As observed in the literature and during this project, there are several system barriers to contraceptive access and best practices in Soldier Medicine. Future project teams can also target streamlining these system processes within the organization. Measures could involve credentialing staff to designate credential requirements, incorporate standardized competencies, and maintain records of credentialed providers. These credentialed providers can be future resources for skills training and mentorship within the clinic for continuity. By offering

expedited patient-centered contraceptive initiation and management within primary care, specialists can allocate more appointments for other needed services, such as infertility services, pregnancy management, or pelvic pain workup. These various women's health problems all impact Soldier readiness, of which select conditions should require management by specialty care. However, primary care can and should address pregnancy prevention.

The ability to consistently implement same-day LARC insertions in primary care clinics would be the end goal, possibly through a long-term performance improvement project. Organizing a same-day contraceptive clinic is not a novel idea within the DoD. Other MTFs that service populations similar to CRDAMC's offer walk-in contraceptive services. Examples include Naval Medical Center Portsmouth (NMCP) in VA, Womack Army Medical Center (WAMC) in NC, and Naval Medical Center San Diego (NMCSA) (Adams, 2017; Rodriguez, 2019; Torman, 2020). As of February 2021, there are at least 30 walk-in contraceptive clinics within the MHS (McMillan et al., 2021). By increasing primary care LARC utilization, we can expect reductions in training interruptions or deployments and lower unintended pregnancy rates among active-duty soldiers, and long-term costs to the DHA.

Conclusion

Addressing the medical readiness of our female service members is critical to maintaining operational readiness. DHA recognizes the roles of timely and comprehensive access to contraception with their most recent procedural instruction (DHA, 2019). Variations in clinical practice are not consistent with DHA's directive to provide beneficiaries their chosen contraceptive the same day or within seven days. Provider training opportunities can support best practices, including patient-centered care for all forms of contraceptive access and credentialing for LARC initiation procedures. During the planning phase of this project, scheduling demands

became a glaring obstacle. Training should accommodate providers' busy schedules saturated with other military and non-medical tasks outside of full-time clinic. Supporting clinicians who can provide these services will decrease unnecessary time and costs for multiple appointments, improve military readiness, reduce unplanned pregnancies among soldiers, and optimize reproductive health for a medically ready force.

References

- Adams, K. L. (2017). Operation PINC: Process improvement for non-delayed contraception. *Military Medicine*, 182(11-12), e1864-e1868. doi:10.7205/MILMED-D-17-00083
- American College of Obstetricians and Gynecologists, Committee on Gynecologic Practice. (2015). Increasing access to contraceptive implants and intrauterine devices to reduce unintended pregnancy. *Committee Opinion No. 642*. Retrieved from <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2015/10/increasing-access-to-contraceptive-implants-and-intrauterine-devices-to-reduce-unintended-pregnancy>
- American College of Obstetricians and Gynecologists, Committee on Healthcare for Underserved Women. (2015). Access to contraception. *Committee Opinion No. 615*. Retrieved from <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2015/01/access-to-contraception>
- American College of Obstetricians and Gynecologists, Committee on Practice Bulletins - Gynecology. (2017). Long-acting reversible contraception: Implants and intrauterine devices. *Practice Bulletin No. 186*, 130(5), e251-269. Retrieved from <https://www.acog.org/-/media/Practice-Bulletins/Committee-on-Practice-Bulletins----Gynecology/Public/pb186.pdf?dmc=1&ts=20191013T1652018500>
- Belmont, P. J., Goodman, G. P., Waterman, B., DeZee, K., Burks, R., & Owens, B. D. (2010). Disease and nonbattle injuries sustained by a US Army Brigade Combat Team during Operation Iraqi Freedom. *Military Medicine*, 175(7), 469-476. doi:10.7205/milmed-d-10-00041

- Buckel, C., Maddipati, R., Goodman, M., Peipert, J.F., & Madden, T. (2019) Effect of staff training and cost support on provision of long-acting reversible contraception in community health centers. *Contraception*, 99(4), 222-227. doi:10.1016/j.contraception.2018.12.005
- Carl R. Darnall Army Medical Center. (2020, December 13). Pathway to excellence: application document mini-manual.
- Castleberry, N. M., Stark, L., Schulkin, J., & Grossman, D. (2019). Implementing best practices for the provision of long-acting reversible contraception: A survey of obstetrician-gynecologists. *Contraception*, 100(2), 123-127. doi:10.1016/j.contraception.2019.03.053
- Center for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, Division of Reproductive Health. (2016). US selected practice recommendations for contraceptive use, 2016. Retrieved from <https://www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6504.pdf>
- Center for Disease Control, National Center for Chronic Disease Prevention and Health Promotion, Division of Reproductive Health. (2020, September 25). CDC contraceptive method guidance: Slide sets for health care providers. Retrieved from <https://www.cdc.gov/reproductivehealth/contraception/unintendedpregnancy/training.htm>
- Christopher, L. A., & Miller, L. (2007). Women in war: Operational issues of menstruation and unintended pregnancy. *Military Medicine*, 172(1), 9-16. doi:10.7205/MILMED.172.1.9
- Curtis, K., Tepper, N., Jatlaoui, T., Berry-Bibee, E., Horton, L., Zapata, L., . . . Whiteman, M. (2016). US medical eligibility criteria for contraceptive use, 2016. *MMWR Recommendations and Reports*, 65(3), 1-103. doi:10.15585/mmwr.rr6503a1

Defense Health Agency. (n.d.). *Health.mil - the official website of the Military Health System*.

Retrieved from <https://www.health.mil/About-MHS/OASDHA/Defense-Health-Agency>

Defense Health Agency. (2019). *Comprehensive contraceptive counseling and access to the full*

range of methods of contraception (DHA-PI Number 6200.02). Retrieved from:

<https://health.mil/Reference-Center/Policies/2019/05/13/Comprehensive-Contraceptive-Counseling>

Department of Defense, Office of the Deputy Assistant Secretary of Defense for Military

Community and Family Policy. (2017). 2017 Demographics: Profile of the military community. Retrieved from:

<http://download.militaryonesource.mil/12038/MOS/Reports/2017-demographics-report.pdf>

Department of the Army. (2019, June 27). *Medical readiness procedures* (Department of the

Army Pamphlet 40-502). Washington, DC Retrieved from

https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN8672_P40_502_FINAL.pdf

Department of the Army. (2020, June 3). *Personnel-General: Leaves and passes* (Army

Regulation 600-8-10). Washington, DC Retrieved from

https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN30018-AR_600-8-10-000-WEB-1.pdf

DiCenso, A., Virani, T., Bajnok, I., Borycki, E., Davies, B., Graham, I., . . . Scott, J. (2002). A

toolkit to facilitate the implementation of clinical practice guidelines in healthcare settings. *Hospital Quarterly*, 5(3), 55-60. doi:10.12927/hcq.16515

- Esposito, C. P., & LoGuidice, J. (2019). Beliefs and use of intrauterine devices (IUDs) among women's health care providers. *Journal for Nurse Practitioners*, *15*(9), 682-687.
doi:10.1016/j.nurpra.2019.05.005
- Evans, D. (2003). Hierarchy of evidence: A framework for ranking evidence evaluating healthcare interventions. *Journal of Clinical Nursing*, *12*(1), 77-84.
<https://doi.org/10.1046/j.1365-2702.2003.00662.x>
- Finer, L. B. & Zolner, M. R. (2016). Declines in unintended pregnancy in the United States, 2008-2011. *New England Journal of Medicine*, *374*(9), 843-852.
doi:10.1056/NEJMsa1506575
- Garcia-Rodriguez, J. A., & Donnon, T. (2016) Using comprehensive video-module instruction as an alternative approach for teaching IUD insertion. *Family Medicine*, *48*(1), 15-20.
- Gibbs, S. E., Rocca, C. H., Bedarek, P., Thompson, K. M., Darney, P. D., & Harper, C. C. (2016). Long-acting reversible contraception counseling and use for older adolescents and nulliparous women. *Journal of Adolescent Health*, *59*(6), 703-709.
doi:10.1016/j.adohealth.2016.07.018
- Harper, C. C., Rocca, C. H., Thompson, K. M., Morfesis, J. Goodman, S, Darney, P. D., Westhoff, C. L, & Speidel, J. J. (2015). Reductions in pregnancy rates in the USA with long-acting reversible contraception: A cluster randomised trial. *Lancet*, *386* (9993), 562-568. doi:10.1016/S0140-6736(14)62460-0
- Harrington, L., Shaw, K., & Shaw, J. (2017). Contraception in US servicewomen: Emerging knowledge, considerations, and needs. *Current Opinion in Obstetrics & Gynecology*, *29*(6), 431-436. doi:10.1097/GCO.0000000000000414

- Heitmann, R., Mumford, S., Hill, M., & Armstrong, A. (2014). Estimated economic impact of the levonorgestrel intrauterine system on unintended pregnancy in active duty women. *Military Medicine, 179*(10), 1127-1132. doi:10.7205/MILMED-D-14-00055
- Holt, K., Grindlay, K., Taskier, M., & Grossman, D. (2011). Unintended pregnancy and contraceptive use among women in the US military: A systematic literature review. *Military Medicine, 176*(9), 1056-1064.
- Kavanaugh, M. L., & Jerman, J. (2018). Contraceptive method use in the United States: Trends and characteristics between 2008, 2012 and 2014. *Contraception, 97*(1), 14-21. doi:10.1016/j.contraception.2017.10.003
- Kelly, P. J., Cheng, A., Carlson, K., & Witt, J. (2017). Advanced practice registered nurses and Long-Acting reversible contraception. *Journal of Midwifery & Women's Health, 62*(2), 190-195. doi:10.1111/jmwh.12578
- Lewis, C., Darney, P., Theil de Bocanegra, H. (2013). Intrauterine contraception: Impact of provider training on participant knowledge and provision. *Contraception, 88*(2), 226-231. doi:10.1016/j.contraception.2013.06.004
- Lobiondo-Wood, G. & Haber, J. (2018). *Nursing research: methods and critical appraisal for evidence-based practice*, 9th ed. St. Louis, MO: Elsevier.
- Luchowski, A. T., Anderson, B. L., Power, M. L., Raglan, G. B., Espey, E., & Schulkin, J. (2014). Obstetrician–Gynecologists and contraception: Long-acting reversible contraception practices and education. *Contraception, 89*(6), 578-583. doi:10.1016/j.contraception.2014.02.004

- Maciuba, J. M. & Chen, J. M. (2019). A new contraception curriculum in the internal medicine residency primary care clinic. *Military Medicine*, 184(1-2), e61-e64.
doi:10.1093/milmed/usy174
- Madden, T., Barker, A. R., Huntzberry, K., Secura, G. M., Peipert, J. F., & McBride, T. D. (2018). Medicaid savings from the contraceptive CHOICE project: A cost-savings analysis. *American Journal of Obstetrics and Gynecology*, 219(6), 595.e1-595.e11.
doi:10.1016/j.ajog.2018.08.043
- McMillan, A. K., Lutgendorf, M. A., Keyser, E. A., Weir, L. F., Hart, T. A., Mehlhaff, K. M., Hubbard, H. S., Beeken, K. E., Morocco, K. V., & Lamb, S. V. (2021, February 25). *Updates on select Defense Health Agency (DHA) Women and Infant Clinical Community (WICC) initiatives* [pdf]. Retrieved from https://www.dhaj7-cepo.com/sites/default/files/DHA_J-7_CEPO_25Feb_CCSS_S07__WICC%20Updates_v0-8_2021-2-19-508_0.pdf
- Medical Operational Data System. (2021). [Unpublished raw data on the Army Individual Medical Readiness categories of personnel assigned by Unit Identifying Codes]. US Army Medical Command. Retrieved from <https://mods.army.mil>
- Montgomery, I. S. & Patrician, P. A. (2014). *Evaluation of a comprehensive contraceptive program in reducing unintentional pregnancy among transitional females in the US Army*. Unpublished manuscript, University of Alabama at Birmingham.
- Newhouse R., Dearholt S., Poe S., Pugh L. C., & White K. (2005) Johns Hopkins Nursing Evidence-Based Practice Model and Guidelines. Indianapolis, IN: Sigma Theta Tau International

- Ouyang, M., Peng, K., Botfield, J., & McGeechan, K. (2019). Intrauterine contraceptive device training and outcomes for healthcare providers in developed countries: A systematic review. *Plos One*, *14*(7), e021974 1-14?6. doi:10.1371/journal.pone.0219746
- Marrone, J. V. (2020) Predicting 36-month attrition in the US military: A comparison across service branches. RAND Corporation. Retrieved from:
https://www.rand.org/pubs/research_reports/RR4258.html
- Roberts, T. A., Smalley, J. M., Weir, L. F., & Adelman, W. P. (2019). Contraceptive use and childbirth rates by service branch during the first 24 months on active duty in the United States military from 2013 to 2018: A retrospective cohort analysis. *Contraception*, *100*(2), 147-151. doi:10.1016/j.contraception.2019.04.002
- Rodriguez, L. C. (2019). Creation of a same-day, walk-in contraception clinic for active-duty women and military spouses. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, *48*(3), S13-S14.
- Secura, G. M., Allsworth, J. E., Madden, T., Mullersman, J. L., & Peipert, J. F. (2010). The contraceptive CHOICE project: Reducing barriers to long-acting reversible contraception. *American Journal of Obstetrics and Gynecology*, *203*(2), 115.e1-115.e7. doi:10.1016/j.ajog.2010.04.017
- Smith, A., Hurwitz, A. G., Singh, T., & Harney, K. F. (2019). Pediatric provider education and use of long-acting reversible contraception in adolescents. *Journal of Pediatric Health Care*, *33*(2), 146-152.
- Stallings, E. M., Rau, R. J. & Varisce, V. A. (2017) *Reducing military unintended pregnancy: Increasing knowledge and access*. Unpublished manuscript, Daniel K. Inouye Graduate School of Nursing, Uniformed Services University of the Health Sciences, Bethesda,

- MD. Retrieved from
<https://digitalcollections.lrc.usuhs.edu/digital/collection/p16005coll10/id/135246>.
- Stewart, M., Digiusto, E., Bateson, D., South, R., & Black, K. I., (2016). Outcomes of intrauterine device insertion training for doctors working in primary care. *Australian Family Physician*, 45(11), 837-841.
- Thompson, K., Rocca, C., Kohn, J., Goodman, S., Stern, L., Blum, M., Speidel, J., Darney, P., & Harper, C. (2016). Public funding for contraception, provider training, and use of highly effective contraceptives: A cluster randomized trial. *American Journal of Public Health*, 106(3), 541–546. doi:10.2105/AJPH.2015.303001
- Thompson, K., Rocca, C. H., Stern, L., Morfesis, J., Goodman, S., Steinaur, J., & Harper, C. C. (2018). Training contraceptive providers to offer intrauterine devices and implants in contraceptive care: A cluster randomized trial. *American Journal of Obstetrics and Gynecology*, 218(6), 597e1-597e7. doi:10.1016/j.ajog.2018.03.016.
- Torman, A. (2020, November 25). NMCP supports "Women's Healthcare at the Waterfront" program. *Naval Medical Center Portsmouth News*. Retrieved from
<https://portsmouth.tricare.mil/News/Articles/Article/2427674/nmcp-supports-womens-healthcare-at-the-waterfront-program>
- Under Secretary of Defense (Comptroller). (2000). *Department of defense overview*. Retrieved from
https://comptroller.defense.gov/Portals/45/documents/cfs/fy2000/04_Section_1_FY2000.pdf
- US Army Medical Department. (2019). *History of Darnall Medical Center*. Retrieved from
<https://www.crdamc.amedd.army.mil/visitors/history.aspx>

US Army Medical Department. (2019). *Medical Center Facts at CRDAMC*. Retrieved from <https://www.crdamc.amedd.army.mil/pao/facts.aspx>

US Army Public Health Command (Provisional). (2010). Guide to female soldier readiness [USACHPPM TG 281]. Retrieved from <https://phc.amedd.army.mil/PHC%20Resource%20Library/TG281finalJuly2010.pdf#search=Technical%20Guide%20281>

US Department of Health and Human Services, Office of Disease Prevention and Health Promotion (2020). *Healthy People 2030 - Reduce the proportion of unintended pregnancies*. Retrieved from <https://health.gov/healthypeople/objectives-and-data/browse-objectives/family-planning/reduce-proportion-unintended-pregnancies-fp-01>

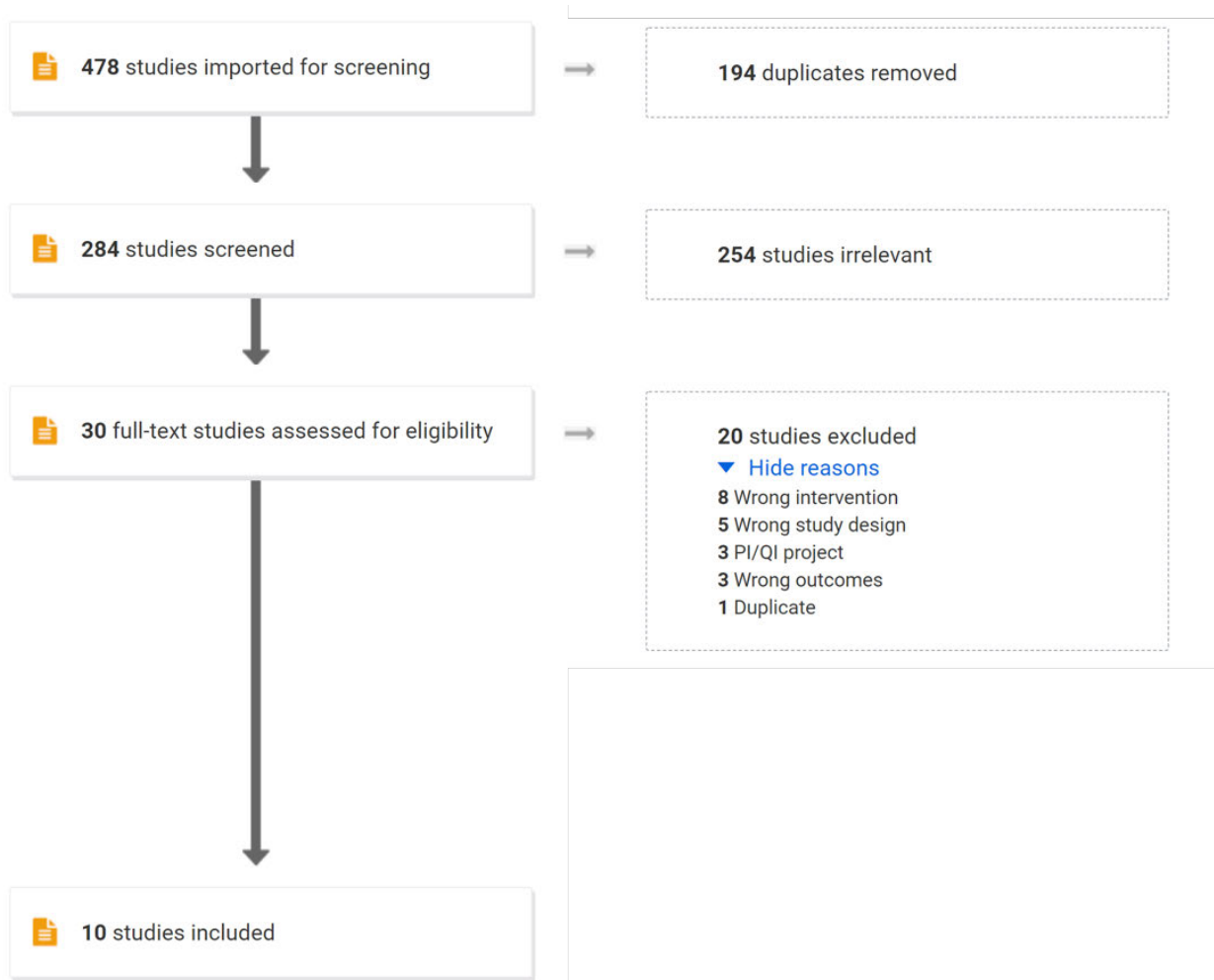
National Defense Authorization Act for Fiscal Year 2020, S. 1790, 116 Cong. (2019). Retrieved from <https://www.congress.gov/116/bills/s/1790/BILLS-116s1790enr.pdf>

White, K. M., Dudley-Brown, S., & Terhaar, M. F. (2016). *Translation of evidence into nursing and health care*. New York, NY: Springer Publishing Company.

Witkop, C. T., Webber, B. J., Chu, K. M., & Clark, L. L. (2017). Contraceptive prescriptions for US servicewomen, 2008–2013. *Contraception*, 96(1), 47-53.
doi:10.1016/j.contraception.2017.05.006

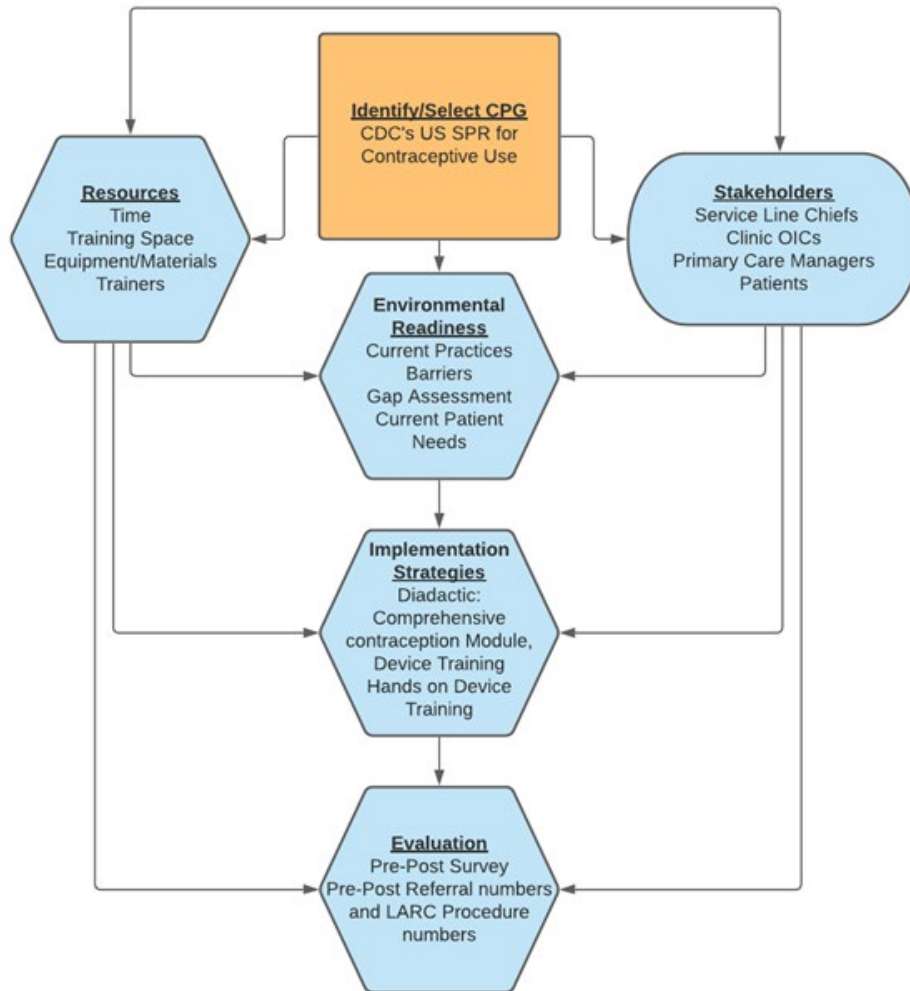
Appendix A

PRISMA Flow Chart



Appendix B

Organization Framework: Clinical Practice Guideline (CPG) Implementation Model



Appendix C
Project Timeline

1st Year (2018-2019)												
Task/Month	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN (19)	FEB	MAR	APR
Identify focused clinical problem with Site Director					x	x	x	x	x	x	x	x
Background literature review					x	x	x	x	x	x	x	x
Select focused aims from Contraceptive Use CPG												
2nd Year (2019-2020)												
Task/Month	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN (20)	FEB	MAR	APR
Identify focused clinical problem with Site Director	x	x	x	x	x	x	x					
Background literature review	x	x	x	x	x	x	x					
Select focused aims from Contraceptive Use CPG					x	x	x					
Focused Literature Review to Evaluate Intervention					x	x	x					
Written Project Proposal Development						x	x	x	x	x	x	x
USUHS VPR Submission and Approval												
Engage key stakeholders at CRDAMC for project team											x	x
Assess clinic readiness, resources, & gaps in local practice												x
Submit eIRB approval												
Identify CPT and E&M codes for LARC procedures												x
Design & produce didactic and hands-on training sessions												x
Obtain IRB approval												x
3rd Year (2020-2021)												
Task/Month	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN (21)	FEB	MAR	APR
Focused Literature Review to Evaluate Intervention												
Written Project Proposal Development	x	x										
USUHS VPR Submission and Approval		x	x									
Engage key stakeholders at CRDAMC for project team	x	x	x	x	x							
Assess clinic readiness, resources, & gaps in local practice	x	x	x	x	x							
Submit eIRB approval		x	x	x								
Identify CPT and E&M codes for LARC procedures	x	x	x									
Design & produce didactic and hands-on training sessions			x	x	x	x						
Obtain IRB approval			x	x	x							
Retrospective chart review for baseline in-clinic LARCs vs. referrals			x	x	x	x						
Obtain pre-intervention provider survey data					x	x	x					
Conduct training and continuing education interventions					x	x	x	x				
Collect post-intervention surveys, chart review, referral data							x	x	x	x		
Disseminate project findings to CRDAMC team members and leadership										x	x	x

* 25. I have confidence and skills to insert IUDs in multiparous women

Extremely confident Not so confident

Very confident Not at all confident

Somewhat confident

* 26. I have confidence and skills to insert IUDs in nulliparous women

Extremely confident Not so confident

Very confident Not at all confident

Somewhat confident

* 27. I have the confidence and skills to insert a contraceptive implant


Extremely confident Not so confident

Very confident Not at all confident

Somewhat confident

Appendix E

CITI Certificates for All Authors



Completion Date 25-Aug-2018
Expiration Date 24-Aug-2021
Record ID 28309450

This is to certify that:


Katrina Farrell

Has completed the following CITI Program course:

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

Under requirements set by:

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



Verify at www.citiprogram.org/verify/7w9c2c1fd9-9d3c-48cf-bf74-0d3b4ee6873f-28309450



Completion Date 26-Aug-2018
Expiration Date 25-Aug-2021
Record ID 28309452

This is to certify that:

Katrina Farrell

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (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/7w276a357b-6b4b-4ff5-ba5b-2be96de20ba-28309452



Completion Date 26-Aug-2018
Expiration Date 25-Aug-2021
Record ID 28309451

This is to certify that:

Katrina Farrell

Has completed the following CITI Program course:

Good Clinical Practice (U.S. FDA Focus) (Curriculum Group)
GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus) (Course Learner Group)
1 - GCP (Stage)

Under requirements set by:

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



Verify at www.citiprogram.org/verify/7wbd5172cc-9a8e-423b-8ae6-064291258de9-28309451

  Completion Date 28-Aug-2018
Expiration Date 27-Aug-2021
Record ID 28310573

This is to certify that:

Kimberly Solari

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

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


Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wb816ac62-edc6-44ee-a18f-99a18a8046dc-28310573

  Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28310572

This is to certify that:

Kimberly Solari

Has completed the following CITI Program course:

Good Clinical Practice (U.S. FDA Focus) (Curriculum Group)
GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus) (Course Learner Group)
1 - GCP (Stage)

Under requirements set by:

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


Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?we7f5cd83-c939-4024-bb2a-047b45954389-28310572

  Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28310571

This is to certify that:

Kimberly Solari

Has completed the following CITI Program course:

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

Under requirements set by:

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


Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w7c86287c-ab48-4c11-8fee-579682cfd4d-28310571

Appendix F

USU (VPR) Form 3202N



OFFICE OF RESEARCH
 4301 JONES BRIDGE ROAD
 BETHESDA, MARYLAND 20814
 PHONE: (301) 295-3303; FAX: (301) 295-6771

NOTICE OF PROJECT APPROVAL

Change Number: Original

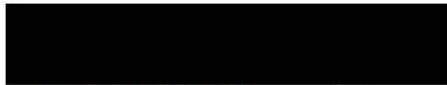
VPR Site Number: GSN-61-11538
Principal Investigator: Farrell, Katrina
Department: Graduate School of Nursing
Project Type: Student
Project Title: Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care Through Continuing Education and Training
Project Period: 9/25/2020 to 1/31/2021

Assurance and Progress Report Information:

Name	Sup	Approval Type	Status	Approved On	Forms Received
Progress Report	0			To be Submitted	N/A

Remarks:
 This Notice Of Project Approval has been reviewed and approved. Please remember that you must submit a final Progress Report (Form 3210) upon completion of this project.

Questions regarding this approval should be directed to the following person in the Office of Research:
 Sharon McIver, (301) 295-9814.



Toya V. Randolph, Ph.D., MSPH Date
 Acting Vice President for Research
 Uniformed Services University of the Health Sciences

cc: File
 Radford, Kennett
 Taylor, Laura

Appendix G

IRB Letter of Determination



DEPARTMENT OF THE ARMY
 HEADQUARTERS, CARL R. DARNALL ARMY MEDICAL CENTER
 3405 GENTRY RD AVENUE
 FORT HOOD, TEXAS 71544-5060

MCXI-QCD

02 October 2020

MEMORANDUM FOR MAJ Kimberly Solari

SUBJECT: Determination of Not Research

PROTOCOL TITLE: Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care Through Continuing Education and Training

CRDAMC PROTOCOL #: 20-26

REVIEW TYPE: Administrative

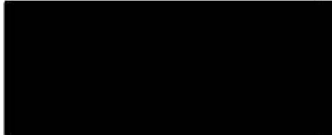
ACTION: NOT RESEARCH STATUS DETERMINATION

1. The Carl R. Darnall Army Medical Center (CRDAMC) Human Research Protections Office (HRPO) received the above-referenced project dated 01 October 2020 for review of applicability of human subjects protections regulations.
2. The CRDAMC Human Protections Director (HPD) has reviewed your proposed project and has determined that your project does not meet the definition of research as defined under 32 CFR 219.102(f).
3. Research is defined under 32 CFR 219.102(f), as follows: "Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge."
4. Based on the information you provided, the project was determined to be "not research" for the following reasons:
 - a. The project is not designed to contribute to generalizable knowledge. The project is meant to fulfill a GME requirement to complete an evidence based practice (EBP) project for degree completion. The project is not designed to influence theory or future research designs.
 - b. The intent of the project is to provide educational training to reduce provider-related barriers to patient access to LARCs. Project outcomes will be shared with involved leadership and key stakeholders to revise long-term goals, implementation design, and sustainment strategies as needed, and to provide continuous quality improvement and improve staff knowledge and education.

MCXI-QCD

Subject: Determination of Not Research

5. Because the project has been determined to be "not research", it is not subject to further review from the CRDAMC HRPO. **This determination should not be construed as approval to initiate the project. Other institutional approvals may be required** and should be coordinated through your department. Any collection of information as defined by DoDI 8910.01 must comply with DoDI 1100.13 "DoD Surveys."
6. Because this is a Quality Improvement (QI)/Process Improvement (PI) Project, please ensure you work with the QI/PI staff going forward. The POC for QI/PI projects is Kery Perez, at kery.perez.oy@mail.mil or (254) 553-1962.
7. You are reminded that you must still comply with all HIPAA regulations and policies, including DoDM 6025.18, which may require further approvals or other documentation that you are responsible for obtaining. These requirements are outside the scope of the CRDAMC HRPO. For HIPAA related assistance please contact CRDAMC's HIPAA Privacy Officer or Security Officer at usarmy.hood.medscom.crdamc.mbx.hipaa@mail.mil.
8. Please be reminded that your project may become research subject to IRB review if it becomes and/or includes a systematic investigation to develop or contribute to generalizable knowledge. In the event there is a change to the above-described project that may affect its determination, please contact your CRDAMC HRPO who will re-evaluate the project and determine if a research protocol must be submitted in IRB.
9. You are reminded that **publication clearance is required prior to the release of any information outside of the institution.** Please refer to the Public Affairs Office (PAO) for specific requirements.
10. The POC for this review is the CRDAMC HPD at pchell.j.jones.civ@mail.mil or (254) 553-9775.



Appendix H

PAO Clearance



REPLY TO:
ATTENTION OF:

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL ARMY MEDICAL CENTER
38065 SANTA FE AVE
FORT HOOD, TEXAS 76544-4752

30 APRIL 2021

MCXI-CS-PAO

MEMORANDUM FOR RECORD

SUBJECT: ROI Oral Presentation, Poster, and Manuscript – LTC Solari and CPT Farrell

1. In accordance with DoD Release of Information guidance and AR360-1, Public Affairs review has been completed for the student project packet including oral presentation briefing slides, poster and manuscript titled **Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care Through Continuing Education and Training** authored by LTC Kimberly Solari and CPT Katrina Farrell for publication and presentation at Uniformed Services University of the Health Sciences (USUHS), Research Week (Virtual); NSA Bethesda, MD, CRDAMC Research Week and submission to USUHS Learning Resource Center.
2. The materials were reviewed and no initial objectionable material was found in the poster or the oral presentation. The manuscript contained troop strength numbers which are typically not releasable due to operational security. RHCC OPSEC manager currently continues OPSEC review.
3. If not included, recommend inclusion or attachment of disclaimer when using an official title or other identification connected with DOD. Disclaimer: "The views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of the Army, DOD, or the U.S. Government."
4. Poster and oral presentation are cleared for release as submitted IAW DoD Release of Information guidance. The manuscript is cleared for submission to USUHS, however, publication submission should be paused until final recommendations are received from RHCC OPSEC Manager.
5. In accordance with AR360-1 and DoD Release of Information guidance, the authors should resubmit the documents for additional review if changes are made to the manuscript, poster, or oral presentation slides.
6. POC for the above information is the undersigned and can be contacted at [REDACTED]

////// original signed//////
MIKAELA T. CADE, MPPA
Chief, Public Affairs & Marketing
CRDAMC

Appendix I

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: Increasing Long-Acting Reversible Contraceptive (LARC) Access in Primary Care Through Continuing Education and Training was completed at Carl R Damall Army Medical Center, Ft. Hood, TX by the following student(s):

Katrina A. Farrell
Kimberly M. Solari



4/16/2021
4/16/2021

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:

Dr. Diane C. Seibert
Lt. Col. Natasha I. Best
LTC Samantha E. Bazan



16 Apr 2021 Senior Mentor
16 Apr 2021 Team Mentor
16 Apr 2021 Team Mentor
& Phase II Site Director

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

RNA Project Director (*type name*)

(*Signature*)

(*Date*)