

A. COVER PAGE

Project Title: Addressing Cervical Cancer in Female Firefighters	
Grant Number: 5K01OH011273-03	Project/Grant Period: 09/30/2019 - 09/29/2022
Reporting Period: 09/30/2021 - 09/29/2022	Requested Budget Period: 09/30/2021 - 09/29/2022
Report Term Frequency: Final	Date Submitted: 12/29/2022
Program Director/Principal Investigator Information: NATASHA SOLLE , PHD Phone Number: 305-243-7191 Email: n.schaefer@umiami.edu	Recipient Organization: UNIVERSITY OF MIAMI SCHOOL OF MEDICINE UNIVERSITY OF MIAMI SCHOOL OF MEDICINE 1320 S Dixie Highway CORAL GABLES, FL 331462926 DUNS: 052780918 UEI: F8THLJQSAF93 EIN: 1590624458A1 RECIPIENT ID:
Change of Contact PD/PI: NA	
Administrative Official: VERONICA ALEXANDRA WONG 1320 S. Dixie Hwy, Suite 650 Coral Gables, FL 33146 Phone number: 3052844295 Email: vxw100@miami.edu	Signing Official: VERONICA ALEXANDRA WONG 1320 S. Dixie Hwy, Suite 650 Coral Gables, FL 33146 Phone number: 3052844295 Email: vxw100@miami.edu
Human Subjects: NA	Vertebrate Animals: NA
hESC: No	Inventions/Patents: No

B. ACCOMPLISHMENTS

B.1 WHAT ARE THE MAJOR GOALS OF THE PROJECT?

Main goals:

This research grant was awarded by CDC/NIOSH with a project start date of 09/30/2019. This is the initial 6-month progress report for year 1. Cervical cancer is among one of the most common cancers diagnosed in female firefighters. We speculate screening underutilization likely accounts for most, if not all, of the observed, excess cervical cancer risk among female firefighters. This project aims to help circumvent the barriers of shift work with the implementation of a Human Papillomavirus (HPV) self-sampler in a sample of active female firefighters in the state of Florida. Given the aforementioned barriers to cervical cancer screening, this project will examine the feasibility and acceptability of HPV self-sampling for cervical cancer screening among unscreened and underscreened Florida female firefighters while collecting formative data, that will characterize the relationship of cancer screening behaviors to occupational and non-occupational factors. Informed by the RE-AIM framework, this project will evaluate this method of screening for cervical cancer in female firefighters, as well as the ability of this method to address barriers to screening such as shift work. This study builds upon our existing partnerships with fire departments throughout the state of Florida. The research and training goals of the project are as follows:

RESEARCH COMPONENT

Original Research Specific Aim 1: To determine the feasibility of implementing a HPV self-sampler intervention in a sample of female firefighters in Florida. Feasibility will be defined as: 1) 65% of all eligible female firefighters complete the HPV self-sampling; 2) 95% of all HPV specimens are adequate for immunoassay; 3) 85% of all women with abnormal findings comply with necessary follow up.

Original Research Secondary Aim 1- To determine the acceptability of implementing HPV self-sampling in a sample of female firefighters in Florida. Acceptability will be defined as 90% of women who complete the HPV self-sampling find it to be an acceptable method of screening.

Original Secondary Aim 2- To identify cervical cancer risk factors within the study sample.

TRAINING / PROFESSIONAL DEVELOPMENT COMPONENT

Training Aim 1: Skills to design and develop workplace interventions

Training Aim 2: Coursework in Occupational and Cancer Epidemiology

Training Aim 3: Drafting a (R01) grant proposal based on K01 pilot data collected

Our aims are consistent with the primary (1.0) and intermediate goal (1.1) of the NORA Public Safety Subsector; to reduce the incidence of chronic diseases in firefighters and to create health communication strategies based on the associations between occupation and chronic diseases, including cancer.

B.1.a Have the major goals changed since the initial competing award or previous report?

No

B.2 WHAT WAS ACCOMPLISHED UNDER THESE GOALS?

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B.3 COMPETITIVE REVISIONS/ADMINISTRATIVE SUPPLEMENTS

For this reporting period, is there one or more Revision/Supplement associated with this award for which reporting is required?

No

B.4 WHAT OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT HAS THE PROJECT PROVIDED?

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B.5 HOW HAVE THE RESULTS BEEN DISSEMINATED TO COMMUNITIES OF INTEREST?

Dissemination of Results

Preliminary findings of the study have been presented at several conferences and seminars for both academic and firefighter groups including the Firefighter Cancer Initiative monthly seminar series, Cancer & Mental Health Symposium at Florida State Fire College, 2021 and 2022 Fire Chiefs Association Safety and Health Conference and the CTSI Clinical and Translational Seminar Series. In addition, Dr. Schaefer Solle has met with local fire departments sharing preliminary results with leadership and female firefighters. Dr. Schaefer Solle is currently working with firefighter stakeholders to design and schedule regional women firefighter seminar series throughout the state, with the focus of educating women on cervical cancer risk and recommended screening practices. Education flyers/pamphlets have also been developed and disseminated to the firefighter community with key women's health topics such as HPV vaccination and cervical cancer screening. The educational flyers are available in paper version and online for download.

B.6 WHAT DO YOU PLAN TO DO DURING THE NEXT REPORTING PERIOD TO ACCOMPLISH THE GOALS?

Not Applicable

FINAL REPORT 2021 / 2022**Natasha Schaefer Solle, PhD, RN****Grant #5K01OH011273-02: entitled “Addressing Cervical Cancer in Female Firefighters”****RESEARCH ACCOMPLISHMENTS:****Major Activities**

During this reporting period, the main goal was to increase recruitment efforts to meet the enrollment target of 100 female firefighters in the United States. Main activities included presenting online via Zoom to new fire departments across the country as well as in-person presentations at Firefighter and scientific conferences. Dr. Schaefer Solle continued to work with her established stakeholders to reach female firefighters across the country representing career and volunteer firefighters of urban and rural communities. In the last year, Dr. Schaefer Solle presented the study aims and preliminary results at several state and national conferences including the Firefighter Cancer Initiative monthly seminar series, Cancer & Mental Health Symposium at Florida State Fire College, 2021 and 2022 Fire Chiefs Association Safety and Health Conference and the CTSI Clinical and Translational Seminar Series. In addition to presenting the project details, Dr. Schaefer Solle also recruited firefighters through conference vendor tables and department specific recruitment events organized in partnership with fire department leadership.

As a result of these recruitment efforts, target enrollment was met with a total enrollment/consent of 208 female firefighters representing 31 states in the U.S. fire service. A total of 315 women were screened for eligibility, 275 of whom were eligible, 208 were enrolled, 207 completed the survey, 162 were sent a test kit and 136 returned the HPV self-sampler. A total of 2 women were HPV positive. HPV kits were only sent to those individuals that completed the consent form and answered a phone call from the study team confirming their interest and mailing address. This was decided to decrease lost kits in the mail and include women who intended to complete the screening. Being that recruitment was shifted mostly to online and virtual due to the pandemic, the research team wanted to ensure the correct audience was completing the study documents. A total 136 (83.9%) returned the HPV self-sampler for analysis. Two women received HPV positive results. All results were read by the research team’s physician and all participants received their results over the phone and a copy was emailed to them for their records. See Figure 1.

Eligibility criteria was altered to include all women firefighters, regardless of screening history to gain a better understanding of firefighters’ screening practices and HPV incidence in the fire service. Of the total enrolled, 33 women had not been screened in over 3 years and 19 were sent kits for HPV screening.

Specific Objectives and Outcomes:

Original Research Specific Aim 1: To determine the feasibility of implementing a HPV self-sampler intervention in a sample of female firefighters in Florida. Feasibility will be defined as: 1) 65% of all eligible female firefighters complete the HPV self-sampling; 2) 95% of all HPV specimens are adequate for immunoassay; 3) 85% of all women with abnormal findings comply with necessary follow up.

Outcome: The implementation of a home-based HPV self-sampler was determined to be feasible based on the findings of our study. A total of 136/162 women returned the self-sampler, showing an 84% completion rate. Additionally, 100% of HPV specimens were adequate for PCR analysis. All samples were analyzed using PCR rather than immunoassay as originally planned per the recommendation of the pathology lab. Lastly, 100% of those with abnormal findings were recommended for follow-up care.

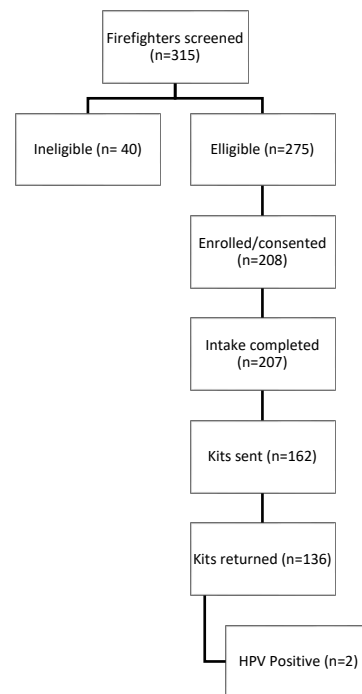


Figure 1: Flow diagram of participant eligibility and enrollment

Original Research Secondary Aim 1- To determine the acceptability of implementing HPV self-sampling in a sample of female firefighters in Florida. Acceptability will be defined as 90% of women who complete the HPV self-sampling find it to be an acceptable method of screening.

Outcome: All participants who completed the HPV self-sampler were invited to complete a follow-up questionnaire assessing the acceptance and usability of the self-sampler. A total of 125 (91.9%) women completed the follow-up survey. When surveying the participants, 99% reported finding the test easy to somewhat easy to use and 82% did not find the process unpleasant or disgusting. 96.8% would use the test again and 95.2% reported that they would recommend to a friend to use. Overall, 89.6% would prefer to perform the test at home compared to standard clinic, 77.7% noting convenience as the reason for home preference.

Original Secondary Aim 2- To identify cervical cancer risk factors within the study sample.

Outcome: As part of the study procedures, participants completed intake questionnaires completing questions related to their health history, cancer screening and risk behaviors. From the data, specific risk factors for cervical cancer were identified within the sample population. Nearly 4 percent of the sample reported never having a pap smear, 53% reported not receiving the HPV vaccine, 38% reported prior abnormal pap smears and 17.4% reported previous abnormal HPV results. Lastly, only 4% reported a history of a prior cancer diagnosis. When evaluating the participants behaviors, 20.3% reported a history of smoking in their past while 2.4% reported currently smoking.

TRAINING / PROFESSIONAL DEVELOPMENT COMPONENT

Training Aim 1: Skills to design and develop workplace interventions

Outcome 1: Dr. Schaefer Solle's training plan included courses and seminars in intervention design and delivery. In addition to these trainings, Dr. Schaefer Solle worked closely with her mentorship team in the ongoing design of firefighter health and safety interventions within the Firefighter Cancer Initiative (FCI). During the three-year grant period, Dr. Schaefer Solle became co-Deputy Director of FCI, allowing her the opportunity to work alongside her mentors and other senior scientists in creating occupational health specific interventions. Based on these training and hands-on experience, she is positioned to design her own independent workplace interventions.

Training Aim 2: Coursework in Occupational and Cancer Epidemiology

Outcome 2: In the 3 years of this K01 project, Dr. Schaefer Solle completed several courses and trainings in Occupational Health and Cancer Epidemiology. Some courses included Psychometrics and Statistics, hosted by University of Miami's School of Education, Emerging Issues in Occupational & Environmental Health Sciences and completed an intensive 3-day series, Occupational Health Psychology Summer Institute focusing on Building a Culture of Health, Safety, and Well-Being, hosted by the Oregon Healthy Workforce Center. Completion of this coursework and training activities has allowed Dr. Schaefer Solle to become an expert in the field of occupational health and cancer control, serving in an advisory role for firefighter and academic organizations. She has created national partnerships and collaboration with other scientists and experts in the field. Dr. Schaefer Solle is an active scholar in cancer epidemiology, significantly learning the principles of epidemiology in a real life setting during the global pandemic.

Training Aim 3: Drafting a (R01) grant proposal based on K01 pilot data collected

Outcome 3: Utilizing findings from this K01 project, Dr. Schaefer Solle has started to draft an R01 proposal to be submitted in the next grant cycle (February 2023), aiming at creating a longitudinal women's cohort study in the state of Florida with the focus of collecting women's health data over time in addition to recording their occupational and environmental exposure. Data from a large cohort over 5 years will fill the current gaps in this understudied subgroup (i.e. women) of the fire service.

FINAL REPORT 2021 / 2022

Natasha Schaefer Solle, PhD, RN

Grant #5K01OH011273-02: entitled “Addressing Cervical Cancer in Female Firefighters”

Training and Professional Development Opportunities:

Since the start of the grant in September 2019, and consistent with the original proposed training and mentoring aims, Dr. Schaefer Solle has been appointed to Deputy Director of the Firefighter Cancer Initiative (FCI) under the direction of her mentorship team, Drs. Erin Kobetz, David Lee and Tulay Koru-Sengul. She was also appointed as the Lead Investigator of the Cancer Prevention and Education program housed within the FCI, examining and evaluating the implementation of occupational-based cancer screening projects. Dr. Schaefer Solle has met with her mentorship team on a regular basis to discuss and strategize the aims and methods of the project.

Dr. Schaefer Solle has continued her work as an advisor and lecturer at the University of Miami Miller School of Medicine. She has guest lectured for several masters and doctoral-level classes including Introduction to the Practice and Science of Public Health (EPH 600); Applied Epidemiology—Theory and Practice (EPH 624); Occupational Health (EPH 643), Integrated Cancer Epidemiology and Prevention (CAB 714) and Research Methods (EPH 651). Dr. Schaefer Solle has increased her advising role, serving as a mentor and advisor to 6 MPH and MD/MPH students as well as being the community stakeholder for over 12 MD/MPH students' capstone projects. As a mentor, Dr. Schaefer Solle has provided guidance and direction for the students' field experiences, capstone projects and advised on class selection. Since 2021, Dr. Schaefer Solle has become the Director of the Public Health Clerkship for all MD/MPH students, organizing the public health clerkship rotations for medical students in addition to meeting with the students weekly to discuss their clerkship experience. Through these teachings and service engagements, Dr. Schaefer Solle is learning the multiple aspects of becoming a successful independent scientist and faculty member. This commitment has taken up 10% of her time.

In addition to her role in the Department of Medicine, Dr Schaefer Solle is a member of the Sylvester Comprehensive Cancer Center. As an active member, Dr. Schaefer Solle was selected to be part of the Protocol Review and Monitoring Committee (PRMC). The PRMC provides internal scientific merit oversight of all cancer studies and assures that center resources are efficiently engaged to facilitate best practices for scientific endeavors. All cancer-related studies that involve human subjects, including both cancer patients and healthy populations, are submitted to the PRMC for review. Dr. Schaefer Solle's experience in social behavioral and population-based studies have allowed her to provide insight and her expertise in reviewing population science, bio-behavioral, and epidemiologic studies. This takes up 2% of Dr. Schaefer Solle's time and effort.

In 2022, Dr. Schaefer Solle served as a reviewer for NIOSH study section for the first time. Being a reviewer was a critical growth experience for Dr. Schaefer Solle as an independent scientist. This provided an opportunity to network with other specialists in the field of occupational medicine, understand the grant review process better and ultimately learn more about the field of occupational health and current research. Dr. Schaefer Solle was also selected to be a member of the NIOSH NORA Cancer, Reproductive, Cardiovascular, and Other Chronic Disease Prevention (CRC) Cross-Sector Council. NORA CRC brings together individuals and organizations to share information, form partnerships, and promote adoption and dissemination of solutions that work. Dr. Schaefer Solle is a member of the Cancer working group. This opportunity has allowed Dr. Schaefer Solle to connect with other scientists in the field of occupational cancer and learn about chronic disease burden and research needs of different occupational groups.

C. PRODUCTS**C.1 PUBLICATIONS**

Are there publications or manuscripts accepted for publication in a journal or other publication (e.g., book, one-time publication, monograph) during the reporting period resulting directly from this award?

No

C.2 WEBSITE(S) OR OTHER INTERNET SITE(S)

Not Applicable

C.3 TECHNOLOGIES OR TECHNIQUES

Not Applicable

C.4 INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES

Have inventions, patent applications and/or licenses resulted from the award during the reporting period? No

If yes, has this information been previously provided to the PHS or to the official responsible for patent matters at the grantee organization? No

C.5 OTHER PRODUCTS AND RESOURCE SHARING

NOTHING TO REPORT

D. PARTICIPANTS

D.1 WHAT INDIVIDUALS HAVE WORKED ON THE PROJECT?

Commons ID	S/K	Name	Degree(s)	Role	Cal	Aca	Sum	Foreign Org	Country	SS
NSCHAEFERSOLLE	Y	Solle, Natasha	PHD	PD/PI	9.0	0.0	0.0			NA

Glossary of acronyms:

S/K - Senior/Key

Cal - Person Months (Calendar)

Aca - Person Months (Academic)

Sum - Person Months (Summer)

Foreign Org - Foreign Organization Affiliation

SS - Supplement Support

RS - Reentry Supplement

DS - Diversity Supplement

OT - Other

NA - Not Applicable

D.2 PERSONNEL UPDATES

D.2.a Level of Effort

Not Applicable

D.2.b New Senior/Key Personnel

Not Applicable

D.2.c Changes in Other Support

Not Applicable

D.2.d New Other Significant Contributors

Not Applicable

D.2.e Multi-PI (MPI) Leadership Plan

Not Applicable

E. IMPACT**E.1 WHAT IS THE IMPACT ON THE DEVELOPMENT OF HUMAN RESOURCES?**

Not Applicable

E.2 WHAT IS THE IMPACT ON PHYSICAL, INSTITUTIONAL, OR INFORMATION RESOURCES THAT FORM INFRASTRUCTURE?

Not Applicable

E.3 WHAT IS THE IMPACT ON TECHNOLOGY TRANSFER?

Not Applicable

E.4 WHAT DOLLAR AMOUNT OF THE AWARD'S BUDGET IS BEING SPENT IN FOREIGN COUNTRY(IES)?

NOTHING TO REPORT

G. SPECIAL REPORTING REQUIREMENTS SPECIAL REPORTING REQUIREMENTS

G.1 SPECIAL NOTICE OF AWARD TERMS AND FUNDING OPPORTUNITIES ANNOUNCEMENT REPORTING REQUIREMENTS

NOTHING TO REPORT

G.2 RESPONSIBLE CONDUCT OF RESEARCH

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G.3 MENTOR'S REPORT[CDA]

File uploaded: Solle RPPR mentor report_Kobetz 2022.pdf

G.4 HUMAN SUBJECTS

G.4.a Does the project involve human subjects?

NA

G.4.b Inclusion Enrollment Data

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G.4.c ClinicalTrials.gov

Does this project include one or more applicable clinical trials that must be registered in ClinicalTrials.gov under FDAAA?

G.5 HUMAN SUBJECTS EDUCATION REQUIREMENT

Are there personnel on this project who are newly involved in the design or conduct of human subjects research?

G.6 HUMAN EMBRYONIC STEM CELLS (HESCS)

Does this project involve human embryonic stem cells (only hESC lines listed as approved in the NIH Registry may be used in NIH funded research)?

No

G.7 VERTEBRATE ANIMALS

Does this project involve vertebrate animals?

G.8 PROJECT/PERFORMANCE SITES Not Applicable
G.9 FOREIGN COMPONENT No foreign component
G.10 ESTIMATED UNOBLIGATED BALANCE G.10.a Is it anticipated that an estimated unobligated balance (including prior year carryover) will be greater than 25% of the current year's total approved budget?
G.11 PROGRAM INCOME Not Applicable
G.12 F&A COSTS Not Applicable

RESPONSIBLE CONDUCT OF RESEARCH

As part of my education and training in the responsible conduct of research, I have stayed up to date on the courses below.

University of Miami's Responsible Conduct of Research Program. The University of Miami's Responsible Conduct of Research program consists of both online training via the Collaborative Institutional Training Initiative (CITI) and numerous seminars (e.g., "Dialogues in Research Ethics") and courses (e.g., Research Ethics RST720). Topic areas covered include: conflict of interest, policies regarding human subjects, mentor/mentee relationships, peer review, research misconduct, responsible authorship and publication practices, the scientist as a responsible member of society, and the environmental/societal impacts of scientific research.

CITI Training and Office of Regulatory Support and Quality Assurance Courses. The CITI website offers web-based training in multiple areas of research compliance and ethics (see areas listed above), including human-subjects considerations such as informed consent. The basic online course takes four hours to complete. I completed my first CITI training in 2007 and have renewed this certificate every two years as required by the university. I have also ensured that all study staff members are CITI-certified and approved by the University of Miami Institutional Review Board. Additionally, I have previously completed the University of Miami Offices of Regulatory Support and Quality Assurance Informed Consent Course, a 2-hour, in-person course, including faculty participation, which covered both principles and process of informed consent, as well as regulations and processes specific to the University of Miami. In this project period, I have completed the UHealth OSHA's Bloodborne Pathogens, Biomedical Waste, Latex Allergy and TB Training.

UHealth Compliance Training. University of Miami requires all faculty and staff to complete annual compliance and corporate integrity training. In addition, I have completed the UHealth Compliance HIPAA Privacy and Security Awareness Training in 2021 and 2022. In addition, I have completed training courses in study management and RNI management in the University's protocol management system.

Informal Training: Through my mentorship team, Drs. Erin Kobetz, David Lee, Tulay Koru-Sengul and Michael Villa, I have received training in the responsible conduct of research through individual meetings monthly. Each faculty member involved in this award has had ample training on the Responsible Conduct of Research, and our meetings provide consistent forums to evaluate and critique project methods and data. These discussions also offer me the opportunity to address ethical issues such as responsible authorship, sharing of data and project resources, and data management. I am also provided with informal instruction from various faculty and scientists in the responsible conduct of research in study participant interactions and other research-related situations.

December 27, 2022

RE: Mentor's Final Report for Dr. Natasha Schaefer Solle's K01- Addressing Cervical Cancer in Female Firefighters

To Whom it May Concern:

It is with great pleasure that I write this final mentor's report to affirm Dr. Natasha Schaefer Solle's completion of the Mentored Research Scientist Development Award (K01). As her primary mentor, I have witnessed firsthand her growth as a scientist and leader in the field of occupational health and cancer prevention. This past year Dr. Schaefer Solle has exhibited exceptional fortitude in completing the research aims of the study. As travel and contact restrictions were enforced during the second year of the project, impacting study recruitment, Natasha adjusted her plan of action for enrollment, and I am proud to report that Natasha reached the enrollment goal while continuing to progress as a scientist and leader in her field.

Since the last reporting period, Dr. Schaefer Solle has continued to demonstrate exceptional research progress and leadership. She has met with her three senior faculty mentors consistently to discuss progress on each K01 research specific aim. In addition, she has attended several courses for professional development and research trainings during this reporting period including the monthly Faculty Development Program and trainings within Miami Clinical and Translational Science Institute (CTSI). I am extremely impressed with the way Natasha has taken on leadership roles that have helped her grow as an independent scientist and faculty member. In the last year, Natasha has been asked to serve on NIOSH study section, join the NIOSH NORA Cancer, Reproductive, Cardiovascular, and Other Chronic Disease Prevention (CRC) Cross-Sector Council. She is making a name for herself in the world of occupational health and being sought for her experience and expertise in cancer prevention in the fire service. She has also made significant strides in teaching and mentoring young scientists on occupational health and safety concerns by guest lecturing in the departments of Medicine and Public Health Sciences. She has become an advisor to 6 MPH and MD/MPH students and is the Director of the Public Health Clerkship program for MD/MPH students. She continues to present her work and other key firefighter issues to fire service leadership at the local, state and national level.

From a research standpoint, Dr. Schaefer Solle screened 136 women firefighters for HPV, with the main outcomes indicating that HPV self-sampling in the fire service community is both feasible and acceptable. Other findings from the study indicate low HPV vaccine uptake. As a result, Natasha has developed educational materials on HPV vaccines and cervical cancer screenings to be disseminated to the fire community. She is currently drafting an R01 application to create a longitudinal cohort of female

firefighters in the state of Florida, focusing on women's health, environmental exposure, and risk of infertility.

Dr. Schaefer Solle continues to play an integral role in the Firefighter Cancer Initiative where she serves as the Deputy Director and lead Investigator of the Cancer Prevention and Education program. She participates in all FCI monthly team and leadership meetings with her mentorship team, providing her with a unique opportunity to learn ways to design, implement, maintain and evaluate her current study. Natasha also provides outreach to the community by presenting her work to several organizations in the fire service as well as with healthcare providers and biomedical researchers.

Overall, Natasha continues to demonstrate significant promise as a new investigator who has benefited significantly from the protected time of this K. She has grown as a scientist, leader and mentor. If you need any further information, please do not hesitate to contact me directly by phone 305-243-6185 or email ekobetz@med.miami.edu.

Sincerely,



Erin Kobetz, PhD, MPH
Vice Provost for Research + Scholarship
Associate Director, Population Sciences and Cancer Disparity, Sylvester
Comprehensive Cancer Center
Professor, Medicine and Public Health Sciences
University of Miami Miller School of Medicine

Cumulative Inclusion Enrollment Report

This report format should NOT be used for collecting data from study participants.

Study Title:

Comments:

Racial Categories	Ethnic Categories									Total
	Not Hispanic or Latino			Hispanic or Latino			Unknown/Not Reported Ethnicity			
	Female	Male	Unknown/Not Reported	Female	Male	Unknown/Not Reported	Female	Male	Unknown/Not Reported	
American Indian/Alaska Native										
Asian										
Native Hawaiian or Other Pacific Islander										
Black or African American										
White										
More Than One Race										
Unknown or Not Reported										
Total	191			14			3			208

I. OUTCOMES

I.1 What were the outcomes of the award?

Project: "Addressing Cervical Cancer in Female Firefighters"
Contact PI: Natasha Schaefer Solle, PhD, RN
Organization: University of Miami Miller School of Medicine

Firefighters may be exposed to many known carcinogens, including volatile organic compounds and polycyclic aromatic hydrocarbons (PAHs) during incident fire response, contact with turnout gear, and at the fire station. Recent exposure assessment and epidemiologic studies have documented differences in cancer rates between female and male U.S. firefighters, including overall cancer, Hodgkin disease, thyroid, and cervical cancer. Despite heightened concern that these exposures and behaviors of the fire service may increase cancer risk, few studies have examined the cancer prevention strategies pertinent to female firefighters. The primary objective of this study is to examine the feasibility and acceptability of home-based Human Papilloma Virus (HPV) self-sampling for cervical cancer screening among both unscreened/under-screened and regularly screened female firefighters in the United States.

The implementation of a home-based HPV self-sampler was determined to be feasible based on the findings of our study. A total of 136/162 women returned the self-sampler, showing an 84% completion rate. Additionally, 100% of HPV specimens were adequate for PCR analysis. All samples were analyzed using PCR. Lastly, 100% of those with abnormal findings were recommended for follow-up care.

All participants who completed the HPV self-sampler were invited to complete a follow-up questionnaire assessing the acceptance and usability of the self-sampler. A total of 125 (91.9%) women completed the follow-up survey. When surveying the participants, 99% reported finding the test easy to somewhat easy to use and 82% did not find the process unpleasant or disgusting. 96.8% would use the test again and 95.2% reported that they would recommend to a friend to use. Overall, 89.6% would prefer to perform the test at home compared to standard clinic, 77.7% noting convenience as the reason for home preference.

As part of the study procedures, participants completed intake questionnaires completing questions related to their health history, cancer screening and risk behaviors. From the data, specific risk factors for cervical cancer were identified within the sample population. Nearly 4 percent of the sample reported never having a pap smear, 53% reported not receiving the HPV vaccine, 38% reported prior abnormal pap smears and 17.4% reported previous abnormal HPV results. Lastly, only 4% reported a history of a prior cancer diagnosis. When evaluating the participants behaviors, 20.3% reported a history of smoking in their past while 2.4% reported currently smoking.