Journal of Student-Run Clinics
Descriptive Report

Implementation and Evaluation of Two Breast and Cervical Cancer Screening Events at a Student-Run Free Clinic

Mary Charleton[1*]; Hayley M Dunlop, MPH[1*]; Jessica Sciuva[1*], Cassidy Abdeen[1], Makena Ray[1]; Gabe Lee[1]; Sreya Tummalapalli[2]; Magdalene Adotey[2]; Siddhi Shah[2]; Robert Cooper, MD, MPH, MBA[3]; Caitlyn Hull, RN[4]; Courtney Shihabuddin, DNP, RN[4]

[1]College of Medicine, The Ohio State University, Columbus, Ohio, USA
[2]The Ohio State University, Columbus, Ohio, USA
[3]Department of Emergency Medicine, The Ohio State University, Columbus, Ohio, USA
[4]Stephanie Spielman Comprehensive Breast Center, The Ohio State University, Columbus, Ohio, USA
[5]College of Nursing, The Ohio State University, Columbus, Ohio, USA

*These authors contributed equally to this work

Corresponding Author: Jessica Sciuva; email: jessicasciuva@gmail.com

Published: October 20, 2025

Abstract

The Columbus Free Clinic (CFC), located in Columbus, Ohio (OH), is the largest interprofessional, student-run free clinic that provides medical and social services to underinsured individuals in OH. Despite the provision of in-house gynecologic services, only 20% of eligible patients had a recently documented cervical cancer screening, and only 1% had received a mammogram in the past 24 months. To address this need, two screening events providing cervical Pap tests, breast exams, sexually transmitted infection (STI) testing, and cholesterol screenings were held. The two screening events utilized different protocols to test the optimal operation of a large-scale gynecological screening event. Both events are described and compared to inform the development of similar initiatives at other free clinics nationwide. Outreach from the clinic was cited as a primary motivation for obtaining a Pap test amongst 60% of patients, and 89.5% of respondents said they would be "very likely to return" to CFC for future screenings. Student volunteers had increased knowledge of Pap tests and breast exams following these interventions. Screening events such as those outlined in this paper may help reduce the burden of breast and cervical cancer among underserved and under-insured patients at student-run-free clinics. They should be implemented in clinics with large populations with unmet screening needs.

Introduction

The Columbus Free Clinic (CFC), located in Columbus, Ohio (OH), is the largest interprofessional, student-run free clinic that provides medical and social services to underinsured individuals in Ohio. The CFC general clinic is operated every Thursday night and is staffed by medical students, physician assistant (PA) students, and nurse practitioner (NP) student volunteers. Patients can receive free laboratory tests and free medications from the in-house pharmacy. In addition to the general medical clinic, CFC offers various specialty clinics, the most popular of which is the gynecology clinic.

In 2022, CFC saw 923 patients for a total of 2483 encounters. Even with the provision of in-house gynecologic services, only 140 of the 573 patients assigned female at birth (AFAB) aged 21-64 seen in the last year at CFC (20.0%) had a recent documented cervical cancer screening. Of 177 AFAB patients aged 40-74, only two (1%) had received a mammogram in the past 24 months.

Underinsured patients often seek care at student-run free clinics, and prior studies have shown that these clinics can play an integral role in increasing access to preventive services such as mammography and Pap tests[1]. The mammography trends observed in our population are like those

described by the American Cancer Society, which reports that mammography rates among the uninsured are less than half of those among insured patients[2-4]. This likely stems from high costs and limited access to healthcare, which may lead to delayed breast cancer diagnoses and poorer outcomes[2-8].

The highest incidence of cervical cancer in the United States is in patients with low educational attainment, low income, no insurance or public insurance, and those from immigrant or minority groups[3-4, 8]. CFC serves all of these at-risk identified groups. In the United States, disparities in the incidence of invasive cervical cancer are primarily due to differences in access to Pap smears[3-4,8].

To address this need, two screening events providing Pap tests, breast exams, sexually transmitted infection (STI) testing, and cholesterol screenings were held. Cholesterol screenings were primarily offered as additional health maintenance and preventative service for patients with no-cost lab services. While both events aimed to increase adherence to breast and cervical cancer screening guidelines at CFC, they were planned and executed differently. Both events will be described and compared to inform the development of similar initiatives at other free clinics.

Event One

Recruitment

AFAB patients were recruited between May to August 2021. Patients were identified using the following methods: lists of unfulfilled referrals for gynecologic complaints, indicated interest in breast or cervical cancer screening on the clinic sign-up form, and by CFC's social work team. The CareMessage (2021, CareMessage, San Francisco, CA) secure messaging service was used to send a mass text message to these patients. These messages, along with detailed event protocols, are included in the Appendices A and B.

Approximately 160 patients were initially contacted. To ensure that appointments focused on screening, patients actively experiencing gynecologic symptoms were triaged and scheduled for upcoming clinics. Patients were also screened about transportation barriers. They were asked if they would be comfortable with a student participating in the exam and assured that they would receive care regardless of whether a student was involved. Two patients expressed a desire for a provider-only appointment and were scheduled accordingly.

Two weeks before the event, a list was created from a report of all patients AFAB over 25 who had attended CFC in July 2020. We used this list of patients to replace initial patients who had canceled as the event approached. Approximately 10 (25%) of the patients who attended the screening night filled canceled spots and were identified in this "second wave" of recruitment.

The Event

Forty patients were scheduled, with 20 medical student volunteers and 10 providers (NPs, PAs, and physicians) in attendance. Students were split into two shifts of ten, and the goal for each student was to complete two patient encounters.

Students watched educational videos of Pap tests and breast exams before the event. On the night of the event, students were provided detailed instructions regarding clinic flow and the Electronic Medical Record (EMR) during orientation. Next, students met the provider with whom they would work, and the student took a brief gynecologic history from the patient. The providers taught students clinical techniques and approaches to providing sensitive health exams. Patients were offered breast exams, Pap tests, pelvic exams, STI testing (Gonorrhea, Chlamydia, Human immunodeficiency virus, Syphilis, and Trichomonas), and cholesterol screening. Patients then had the opportunity to meet with social work staff. All patients over age 40 met with representatives from the Breast and Cervical Cancer Prevention Program (BCCP). This program provides free breast and cervical cancer screening and free follow-up diagnostic tests and treatment for patients with low socioeconomic status.

Students created a detailed care plan with their provider to facilitate teaching opportunities.

They recorded the plan in the EMR using a designated dot phrase, a pre-made template for EMR documentation (Appendix C).

Ultimately, 40 patients were scheduled, 25 attended, and all received Pap tests and breast exams. 14 patients received STI testing, and six received cholesterol screening. Six referrals were placed: four for colposcopy and two for other gynecologic needs.

Feedback

Patients were asked to rate their comfortability on a Likert scale ranging from "very uncomfortable" to "very comfortable" with student participation in exams and their likelihood of returning to CFC for future exams. Eleven patients responded. All eleven patients reported that the providers and students made them comfortable and answered their questions. Ten of the eleven patients were overdue for their Pap test and/or breast exam, and patients commonly cited the availability and promotion of the screening event as the reason they obtained screening. Every patient stated that they were "very likely" to return to CFC for future screenings.

Students were also asked to complete optional surveys before and after each session. Most students had not performed a Pap test, and half of the students had performed a breast exam. Five of the seven students who responded increased their comfort in performing a pelvic exam and Pap test, and 100% felt that the screening event was a comfortable environment to perform a Pap test. Students remained at the same level or increased confidence in performing these exams. Most students appreciated being paired with a single provider, allowing them consistent and personalized feedback. Students also reported increased or reaffirmed interest in pursuing a career in reproductive healthcare, feeling less intimidated performing exams, and increased confidence in obtaining a sexual history.

Results and follow-up

The goal of the results and follow-up phase was to clearly educate patients regarding their results and follow-up care. The phase also allowed students to interpret and communicate results to patients. When urgent results (e.g., a high-grade squamous intraepithelial lesion arrived, a provider informed the student volunteer how to counsel the patient. The patient was called the same day, and a referral was placed for follow-up testing.

The follow-up session occurred two weeks after the initial event. This Zoom session was led by a steering committee member and a licensed Women's Health Nurse Practitioner (WHNP). The WHNP taught students how to communicate Pap and STI results, and students called their patients to relay the results and plan. Having a provider present allowed students to ask questions about their patients' cases directly.

Event Two

The second iteration of the screening event was held in June 2023 and was executed similarly to the first event. Key differences are displayed in Table 1.

An EMR report was generated of patients over 21 years old who did not have a Pap test recorded in their chart. CFC's Google Voice (2021, Google LLC, Mountain View, CA) account was used to text 390 patients (Appendix D). Eighty-two patients responded, 46 of whom were not up to date on their Pap test. Patients were contacted from referral lists, and 30 were scheduled for 24 slots. Three reminder text messages were sent to patients during the screening event. Patients were not screened ahead of time regarding student involvement, transportation barriers, or appointment type.

There were eight provider volunteers and 10 student volunteers. Before the event, volunteers received email instructions explaining screening night clinic flow and giving EMR guidance. Volunteers attended a general clinic orientation rather than a dedicated screening event orientation at the event. Providers and students were not directly paired; student volunteers staffed their patients with any available provider. A total of 17 patients were seen, with eight no-shows and seven cancellations.

Table 1. Summarization of events and differences

	Event One	**Event Two**
Patient outreach	Primary: referrals, sign-up form, social work	Patient Outreach
Outreach method	CareMessage*	Google Voice†
Transportation, appointment type, student involvement screening	Yes	No
Number of patients scheduled	40	30
Number of appointments	25	17
Number of student volunteers	20	8
Number of provider volunteers	10	10
Number of Pap tests	25	13
Number of STI tests	14	9
Screening event specific orientation	Yes	No
Student-provider pairing	One-to-one pairing	Randomized‡
Social work present	Yes	Yes
BCCP Present	Yes	No
Dot phrase used** in the clinical documentation	Yes	Yes
Follow-up call	Conducted by student volunteers in educational session	Conducted by steering committee member

**2021, CareMessage, San Francisco, CA*
†2021, Google LLC, Mountain View, CA
‡Students staffed their patients with any available gynecology provider at that time, and were not assigned to a specific provider to work with throughout the event
***A shorthand for templated text used to facilitate documentation*
STI: sexually transmitted infection; BCCP: Breast and Cervical Cancer Prevention Program

After the event was completed, Pap test results were interpreted by one provider. The specialty clinic coordinators called patients with results and coordinated referrals for colposcopy and radiology as appropriate. No follow-up event for student volunteers to call their patients was held to expedite patient notification.

Eight patients responded to the post-event questionnaire. Of the respondents, 100% of patients reported that the providers and students made them feel "very comfortable" (8/8) and answered their questions (7/7). Seven patients surveyed were overdue for their Pap test and breast exam. Many patients cited the screening event's availability and promotion as the reason they obtained a breast exam or Pap test. In contrast, others cited concern for cancer risk due to their family history.

Five of six students responded that their comfort with pelvic exams and Pap tests increased, and five felt that the screening event was a comfortable environment to perform a Pap test. All students reported increased or reaffirmed interest in pursuing a career in reproductive healthcare, feeling less intimidated performing exams in a setting where they are not evaluated, and feeling that their desire to work in an underinsured community was confirmed. Students stated that a screening event-specific orientation beforehand would be helpful to them, as they were confused about how to use the dot phrase for the screening event, the EMR, and clinic flow. Students also wished that one provider was assigned to each student so that students could learn from the provider throughout the event.

Discussion

The success of each event was attributable to several factors. An EMR dot phrase streamlined documentation, maximizing student efficiency and improving patient care quality. Surveys

administered by the social work team allowed for intervention on various mental health needs and identified inequities in the social determinants of health. The BCCP's involvement scheduled multiple patients for free mammograms.

CareMessage is a platform that allows healthcare organizations to reach out to patients on a large scale, improving efficiency and quality of care. Using CareMessage for large-scale recruitment in the first iteration of the event allowed for easy tracking of patients' responses and increased efficiency by sending multiple messages at once. In the second event, a Google Voice account reached patients. Google Voice is a platform that CFC currently uses with an assigned phone number and answering service that can be used to call and text patients. In the event's second iteration, Google Voice was used to individually text each patient for recruitment, as Google Voice cannot send large-scale communications to patients like CareMessage does. Calling each patient ahead of time to screen for transportation barriers, interest in screening services, and permission for student involvement allowed for additional confirmation of the appointment, which slightly increased the proportion of patients who attended the first screening event (62.5%) compared to the second (56.7%), but was very time intensive. In addition, CFC no longer has access to CareMessage, so the current assessment of success in reaching 160 initial patients is limited. The targeted approach using Google Voice to guide patient recruitment in the second iteration was more efficient and comprehensive, allowing the specialty clinic coordinators to contact all patients who did not have a Pap smear recorded in the EMR rather than select only patients who had shown interest in gynecologic services. The recruitment approach in the second event yielded only a slightly higher "no-show" rate than the first event.

In the first event, 20 student volunteers were split into two waves of student groups instead of a single wave in the second event. Although the two-wave approach allowed more students to volunteer, coordinating was more challenging, as the first wave of appointments needed to be completed before the second wave could begin. At the second event, fewer students could volunteer, but the volunteers were more manageable to coordinate. Student volunteers expressed that including a specific orientation for the screening event highlighting overall expectations, clinic procedures, and EMR protocols is very helpful. Students also expressed that being paired with providers increased their confidence and comfortability in performing certain aspects of the exams, likely due to the formation of longitudinal relationships. While students had better experience in the first event, the second event was logistically easier to execute. The student benefits of these two screening events aligned with studies that have shown that when students are allowed to perform pelvic exams and Pap smears in a free clinic setting under the supervision of an attending physician, they feel more prepared for clinical assignments.[7]

Delivering patient results at a follow-up event benefited student education, primarily as it taught students how to deliver bad news, a skill often overlooked in medical training.[9-10] However, this meant that patients had to wait longer for their results due to the need for student education regarding delivery of results. This approach required more time and coordination than the second. It utilized volunteer providers to interpret the results as they came into the EMR, and specialty clinic coordinators called patients with their results and coordinated follow-ups. In the future, ensuring patients have access to their patient portal, especially for normal results, could maximize efficiency and minimize waiting time between appointments and results delivery.

Final Recommendations and Conclusions

The results of this study show that both iterations of these screening events increased access to essential tests for patients at CFC in a manner that was acceptable to patients and increased student educational opportunities. In the future, we recommend ensuring all patients have appropriate follow-ups with the general clinic or a primary care provider to provide a comprehensive health maintenance exam with coverage of all applicable screenings such as HgbA1C, colon cancer

screening, cholesterol, etc. We would focus this event solely on women's health prevention/maintenance. After comparing two different iterations of this event, we found that targeted recruitment for patients who are not up to date with Pap tests or mammograms and utilization of mass-messaging services (as described by the second and first iterations) increased efficiency. Although time intensive, screening attendees before the event for comfortability with student involvement and transportation barriers is recommended.

Additionally, based on student volunteers' feedback, a screening event-specific orientation is essential for the success of any future event. We recommend limiting student involvement to only one group of students with direct one-on-one provider pairings. Moving forward, we suggest including social work integration, programs like BCCP for mammogram access, and dot phrases to streamline EMR documentation. Screening events such as those outlined in this paper may help reduce the burden of breast and cervical cancer among underserved and under-insured patients at student-run-free clinics. They should be implemented in clinics with large populations with unmet screening needs.

Disclosures

The authors have no conflicts of interest to disclose.

References

1. Wang E, Getrajdman C, Frid G, et al. A three-year analysis of the impact of a student-run gynecology clinic on access to reproductive health care for uninsured women in east Harlem. *J Community Health*. 2021;46(6):1132-1138. doi:10.1007/s10900-021-01001-3. LINK
2. American Cancer Society. (2007). *Breast cancer facts & figures*. American Cancer Society. Accessed Jan 11, 2023 https://www.cancer.org/research/cancer-facts-statistics/breast-cancer-facts-figures.html LINK
3. Smith RA, Cokkinides V, von Eschenbach AC, Levin B, Cohen C, Runowicz CD, Sener S, Saslow D, Eyre HJ; American Cancer Society. American Cancer Society guidelines for the early detection of cancer. *CA Cancer J Clin*. 2002 Jan-Feb;52(1):8-22. doi: 10.3322/canjclin.52.1.8. LINK
4. Khalil S, Hatch L, Price CR, Palakurty SH, Simoneit E, Radisic A, Pargas A, Shetty I, Lyman M, Couchot P, Roetzheim R, Guerra L, Gonzalez E. Addressing breast cancer screening disparities among uninsured and insured patients: A Student-Run Free Clinic Initiative. *J Community Health*. 2020 Jun;45(3):501-505. doi: 10.1007/s10900-019-00767-x. LINK
5. Kish JK, Yu M, Percy-Laurry A, Altekruse SF. Racial and ethnic disparities in cancer survival by neighborhood socioeconomic status in Surveillance, Epidemiology, and End Results (SEER) registries. *J Natl Cancer Inst Monogr*. 2014;2014(49):236-243. doi:10.1093/jncimonographs/lgu020. LINK
6. Menning M, Nabower A, Medder J, Geske J, Margalit R. The impact of a multifaceted intervention on the rate of preventive services offered in a student-run clinic. *J Stud Run Clin*. 2016;2(2). doi:10.59586/jsrc.v2i2.14 LINK
7. Raduka J, Churchill J, Dombrosky E, Liu C, Whetzel H. Pairing medical student education and Pap smears at the Eastern Virginia Medical School HOPES Free Clinic. *Free Clin Res Collect*. 2015;1:26-28.. Retrieved from https://web.archive.org/web/20180414113657id_/http://www.themspress.org/journal/index.php/freeclinic/article/viewFile/128/206 LINK
8. Roetzheim RG, Pal N, Tennant C, Voti L, Ayanian JZ, Schwabe A, Krischer JP. Effects of health insurance and race on early detection of cancer. *J Natl Cancer Inst*. 1999 Aug 18;91(16):1409-15. doi: 10.1093/jnci/91.16.1409. LINK
9. Orgel E, McCarter R, Jacobs S. A failing medical educational model: a self-assessment by physicians at all levels of training of ability and comfort to deliver bad news. *J Palliat Med*. 2010;13(6):677-683. doi:10.1089/jpm.2009.0338. LINK
10. Orlander JD, Fincke BG, Hermanns D, Johnson GA. Medical residents' first clearly remembered experiences of giving bad news. *J Gen Intern Med*. 2002;17(11):825-831. doi:10.1046/j.1525-1497.2002.10915.x LINK