INCREASING ANAL CANCER SCREENINGS

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# INCREASING ANAL CANCER SCREENINGS

Heather Leadbetter, MSN, RN

## Abstract

Anal cancer diagnoses have been rising in recent decades. Among high-risk populations such as people living with Human Immunodeficiency Virus (HIV), anal cancer cases are much higher than in the general population. Anal cancer screenings are available but underutilized, even in high-risk populations. There is a need for increased interventions, especially in high-risk populations, to educate patients and screen for anal precancers and cancerous cells.

This study will examine the use of nurse education including an evidence-based educational pamphlet for patients at the PA Thrive Partnership clinics to increase the number of high-risk patients who have anal cancer screenings completed. This is a quantitative study measuring statistics around the number of patients receiving anal cancer screenings before and after the implementation of anal cancer education. The theoretical framework most suitable for this project is the Iowa Evidence-Based Practice (EBP) framework. The Iowa EBP framework includes identifying a problem, researching to support it, designing an appropriate change process, and integrating and sustaining the change.

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# Chapter 1

## Introduction

There are rising rates of anal cancer, particularly within high-risk populations such as people living with HIV (PLWH). PA Thrive Partnership clinics focus on providing medical care and services to PLWH. Utilizing this setting to implement tools that reach patients where they are can improve patient understanding and positively impact overall outcomes. In this chapter, a more extensive summary of the healthcare problem will be provided, including background information, the need for the study, assumptions, and limitations.

### Background of the Problem

Anal cancer screenings are a newer and less common practice. The Anal Cancer Foundation (ACF) has created the first International Anal Cancer Screening Guidelines (Table 1). Anal cancer has higher rates of prevalence in some populations, including PLWH. Women are diagnosed with anal cancer at a higher rate than men in the United States. Risk factors include persons with HIV, men who have sex with men (MSM) age 35+, Transgender women (TW) age 35+, age 45+, history of vulva dysplasia or vulva cancer, solid organ transplant recipients at 10 years post-transplant, Cervical or Vaginal high grade squamous intraepithelial lesion (HSIL), Cervical/Vaginal Cancer, Perianal Warts, persistent HPV, immunosuppression or chronic systemic steroid therapy. (ACF, 2024)

### Statement of the Problem

At-risk individuals need to be screened for anal cancer at a higher rate.

## Project Questions

Will providing education to direct care staff at the PA Thrive clinics on an evidence-based best practice education pamphlet for patients related to the risk of anal cancer increase the number of patients who receive anal cancer screenings?

## Hypotheses

Statistically, there is a rise in anal cancer occurrences, with the highest rates in some vulnerable populations. A single international guide has recently been released to aid in identifying and screening individuals at risk. PA Thrive Partnership clinics provide services to PLWH. This population is in the high-risk category for anal cancer. However, the rate of screenings completed remains low. The hypothesis questions if educational material is created to help patients better understand anal cancer, and if this is provided to direct care staff to deliver to patients, will more patients be agreeable to screening?

## Definition of Terms

### Anal Cancer

Conceptual Definition: Anal cancer is a malignant neoplasm of the anal canal.

Operational Definition: In this study, a diagnosis of anal cancer or the presence of cancerous cells confirmed through high-resolution anoscopy (HRA) and biopsy.

### People Living with HIV (PLWH)

Conceptual Definition: Individuals who have been diagnosed with HIV, a virus that attacks the immune system and increases vulnerability to opportunistic infections and certain cancers (CDC, 2023).

Operational Definition: For this study, PLWH are patients with confirmed HIV diagnosis in their medical records.

**High-Risk Populations**

Conceptual Definition: Groups identified as having a statistically higher incidence of anal cancer.

Operational Definition: High-risk individuals in this study include those who meet any of the criteria outlined in the International Anal Cancer Screening Guidelines.

**Anal Cancer Screening**

Conceptual Definition: A clinical procedure used to detect precancerous changes or early-stage cancer in the anal canal. Screenings are primarily completed through methods such as digital anal rectal examination, anal cytology, and HRA.

Operational Definition: In this study, a completed anal cancer screening is defined as documentation of one or more of the above procedures in the patient's medical record within the study's designated time frame.

**Educational Pamphlet**

Conceptual Definition: An evidence-based written health communication tool designed to increase knowledge and awareness of anal cancer risks and screening options among patients. (Nutbeam, 2000).

Operational Definition: In this project, the educational pamphlet is a standardized document provided to patients by direct care staff at the PA Thrive clinics.

**Iowa Model of Evidence-Based Practice (EBP)**

Conceptual Definition: A systematic framework used to guide the implementation of EBP in clinical settings. It includes identifying a problem, forming a team, reviewing and synthesizing evidence, piloting change, evaluating outcomes, and sustaining change (Iowa Model Collaborative, 2017).

Operational Definition: This model guides the project's structure, particularly the steps involved in implementing and evaluating the educational pamphlet intervention within PA Thrive clinics.

**Need for the Study**

Anal cancer has few to no symptoms. Symptoms can include pain, bleeding, and lumps. These symptoms, or their absence, can be mistaken for benign disease processes. Due to the lack of symptoms and similarity to benign processes, anal cancer is not always identified, even at the onset of symptoms. Populations that are at high risk, including PLWH, have an overlap in socioeconomic distress that can often delay medical treatments. Some of the factors that already make a population at high risk for anal cancer also affect the curative nature of the disease, including HIV status. (Temperley et al., 2024)

The rate of anal cancer diagnosis is on the rise. Individuals with an HIV diagnosis, highest risk MSM, Human Papillomavirus (HPV) diagnosis, women with gynecological HPV cancer or precancerous lesions, individuals who have undergone an organ transplant, or other immunosuppressive disorders. Anal cancer identified in more advanced stages has a higher likelihood of recurrent disease and poor prognosis. (Gondal et al., 2023)

**Significance of the Problem**

The clinical significance of this project lies in promoting health education at the patient level and increasing the frequency of appropriate anal cancer screenings for high-risk individuals. Anal cancer screenings are a newer process within many settings and are not regularly implemented.

**Assumptions**

It is assumed that direct care staff will accurately report their experience with the educational presentation on the evidence-based anal cancer patient education pamphlet. It is assumed that direct care staff at PA Thrive clinics will consistently distribute the educational pamphlets to patients as intended. It is assumed that the educational pamphlet is clear, accessible, and understandable to patients of varying levels of health literacy. It is assumed that electronic health records (EHRs) are accurately updated to relate to all completed screenings during the study period. It is assumed that clinic workflow and staffing levels will remain stable enough to support the proper delivery and documentation of the intervention. It is assumed that the Iowa EBP framework is a suitable framework to guide the intervention in this clinical setting.

**Limitations**

Limitations of this project include that the study is limited to a single site, the PA Thrive Partnership clinics. This may not reflect practices, populations, or operations in other healthcare settings. The study will be completed within a short timeframe and, therefore, may not capture the long-term effects. Direct care staff will self-report feedback on the survey provided before and after the education session; this could result in bias if feedback is dishonest. The impact of the pamphlet may be limited by inconsistent staffing, staff motivation, or adherence. Varying health literacy, language proficiency, or cognitive ability may limit the effectiveness of the pamphlet.

**Summary of the Problem**

Anal cancer rates have increased in recent years, with significantly higher prevalence among high-risk groups, particularly PLWH. Despite the availability of anal cancer screenings, these services are underutilized, even in high-risk clinical populations. This project aims to address this gap by implementing an evidence-based educational pamphlet within the PA Thrive

Partnership clinics, which serve a large PLWH population. The goal is to increase patient awareness and uptake of anal cancer screenings.

This quantitative study will measure the number of screenings completed before and after the educational intervention. Guided by the Iowa Model of EBP, the study incorporates structured steps to identify the problem, relate research, implement change, and evaluate outcomes.

The need for this study is supported by the limited symptom presentation of anal cancer, its rising incidence, and the challenges faced by vulnerable, high-risk populations. Early detection remains crucial for improving outcomes. The significance of this project lies in its potential to promote preventive health and enhance clinical practices for early cancer detection.

## Chapter 2

## Review of Related Literature

The next chapter will explore the existing body of literature surrounding anal cancer, its prevalence in high-risk populations, and current screening practices. This chapter will also review the role of patient education in preventive care and summarize prior findings on the implementation of educational interventions in similar clinical settings. Finally, the theoretical framework underpinning this project, the Iowa Model of EBP, will be discussed in greater detail to establish its relevance and applicability to this study.

### What *is* known about the problem?

Current literature establishes that PLWH, transgender individuals, and MSM are at elevated risk for anal cancer, primarily due to persistent high-risk HPV infection (Barquet et al., 2024; Cachay et al., 2024; Deshmukh et al., 2020). Epidemiological evidence demonstrates rising anal cancer incidence and mortality, especially among older adults and immunocompromised individuals (Deshmukh et al., 2020; National Cancer Institute, 2024). Screening programs have shown efficacy in detecting high-grade lesions and reducing cancer burden in high-risk populations (Espirito Santo et al., 2025; Leclerc et al., 2024). Updated clinical guidelines now recommend HRA and anal Papanicolaou tests (Pap tests) as part of routine care for PLWH (Fuller, 2025; NIH, 2024). Behavioral and systemic barriers, including stigma, low-risk perception, provider discomfort, and institutional gaps, continue to hinder screening uptake (Fein et al., 2021; Geba et al., 2024; Higashi et al., 2022; Sam et al., 2025). Provider education and structured implementation models are recognized as key to improving clinical practice (Fuller, 2025; Byrnes & Liu, 2022).

### What is not known about the problem

Despite these advances, gaps remain in understanding the long-term outcomes of organized screening on morbidity and mortality, especially in diverse subgroups within the PLWH population (Leclerc et al., 2024). Little is known about the cost-effectiveness and scalability of sustained screening programs across varied healthcare settings (Espirito Santo et al., 2025). There is limited research on the impact of interventions and culturally tailored education in reducing screening disparities, particularly among transgender individuals and MSM (Fein et al., 2021; Sam et al., 2025). Additional research would be needed to explore strain-specific risks of HPV and its relationship to cancer progression (Barquet et al., 2024).

## Theoretical Framework

The theoretical framework that guides this study is the Iowa Model of EBP. This model provides a systematic approach to implementing evidence-based changes in clinical practice, making it particularly applicable in settings that aim to improve patient outcomes through structured interventions (Iowa Model Collaborative, 2017). The Iowa Model begins with identifying a triggering issue, such as the low rate of anal cancer screening among PLWH and moves through a series of steps: forming a team, gathering and synthesizing evidence, piloting a change, evaluating outcomes, and, if successful, sustaining the change in practice.

In this study, the Iowa Model is applied to the design and implementation of an evidence-based educational intervention. The problem of underutilized anal cancer screening in a high-risk population serves as the trigger. A committee is formed to collaborate on the development of an educational pamphlet based on current guidelines, which will be delivered directly to patients by direct care staff. The intervention's effectiveness is evaluated through the number of screenings completed before and after implementation, as well as feedback from staff involved in the educational process.

The Iowa Model emphasizes collaboration, ongoing evaluation, and patient-centered care. These central concepts align with this research project. The model provides an outline for integrating research into practice. The approaches of this model ensure rigor and relevance in the search for improved health outcomes for high-risk individuals.

**Summary of the Review of Related Literature**

A review of the existing literature reveals a growing concern regarding anal cancer, particularly among individuals considered high-risk due to factors such as compromised immune systems, specific sexual behaviors, and persistent HPV infection (Deshmukh et al., 2020; National Cancer Institute, 2024). Research consistently shows that specific populations, including PLWH, MSM, transgender individuals, and others with immunosuppressive conditions, experience higher rates of anal cancer (Barquet et al., 2024; Byrnes & Liu, 2022; Tisler et al., 2024).

Although screening methods have been developed and refined, their implementation in clinical practice remains inconsistent (Leclerc et al., 2024; Stier et al., 2024). Studies have identified both individual-level barriers, such as lack of awareness and stigma (Fein et al., 2021; Sam et al., 2025), and system-level challenges, including inadequate provider training and insufficient clinical protocols (Higashi et al., 2022; Sanger et al., 2023), that can deter the effectiveness of anal cancer prevention efforts.

Healthcare agencies have begun to issue screening guidelines, emphasizing the need for more inclusive and accessible care (NIH, 2024; Stier et al., 2024; ACF, 2024). Despite these advances, important gaps remain in the research. There is limited evidence on the long-term impact of screening programs, the effectiveness of educational tools in diverse populations, and strategies to increase screening uptake in high-risk groups (Geba et al., 2024; Fuller, 2025).

Literature supports the need for practical, evidence-based approaches that promote awareness, reduce barriers, and improve outcomes with early detection (Nutbeam, 2000; Iowa Model Collaborative, 2017; Kirkpatrick & Kirkpatrick, 2006). Educational interventions that address health literacy and incorporate patient-centered strategies are crucial for ensuring the implementation and sustained participation in anal cancer screening (Nutbeam, 2000; Bastable, 2019).

# Chapter 3

# Methodology

Chapter 3 will cover the methodology portion of this research project. The chapter will review project design, setting, sample, ethical considerations, and data collection.

## Project Design

This project utilizes a quasi-experimental, single-group posttest design to evaluate the effectiveness of an educational intervention aimed at increasing anal cancer screenings among PLWH. Project design reviewed with the project committee and approved by Pennsylvania Western University Institutional Review Board (Figure 4). The intervention consists of education and training to PA Thrive Partnership clinic nurses on anal cancer and an evidence-based educational pamphlet distributed by direct care staff. Nurses will be provided will a consent for voluntary participation in the project (Figure 5). Direct care staff will complete a post-education survey (Table 2) to measure the effectiveness of education. Direct care staff will provide a patient education pamphlet to all patients attending PA Thrive Partnership clinics for their provider visits. After three months, the data will be reviewed. Data will be collected from the EHR. Data will include the number of patients that received anal cancer screenings over the 3 month-long time period. Data will not include any identifying information. Data will include the number of patients who received anal cancer screenings, and per the Institutional Review Board, gender and age with patient consent (Figure 6). This data will then be analyzed and compared to the prior months' data to determine the effectiveness of the intervention.

## Setting

The study will take place at the PA Thrive Partnership clinics. Clinics are located in Pennsylvania. The population of patients at the PA Thrive Partnership clinics is PLWH.

## Sample

The sample of nurses targeted includes all nurses working as direct care providers at the PA Thrive clinics. The sample will be a random sample of patients seen at the PA Thrive Partnership clinics over a 3-month period. The goal is to provide a patient education pamphlet to all patients seen at the clinics during the time period. Inclusion is patients being seen at the PA Thrive Partnership clinics. Exclusion would include patients not being seen at the clinic.

## Ethical Considerations

Patient autonomy, equity, and beneficence must be considered. Strict confidentiality must be maintained. Confidentiality is a priority when working with the HIV-diagnosed population (Marellapudi et al., 2022). All individuals working with HIV patients must understand and agree to confidentiality agreements. Patient identifying information is only stored in a secure network. This study will evaluate the number of patients that receive anal cancer screening; this statistic can be published without including any patient identifying factors. Patients have the autonomy to be fully informed about anal cancer screening and consent to screenings. Anal cancer screening has little to no patient discomfort. Educating patients, staff, and providers has little to no risk of harm to patients. Consideration must be made to ensure materials meet the needs of all patients, regardless of their health literacy.

## Instrumentation

The Post-Education Evaluation Tool is an instrument used to evaluate the effectiveness of the education session for direct care staff on the patient education pamphlet. The purpose of this tool is to evaluate staff confidence and intended practice changes after education related to anal cancer screening.

This tool incorporates two sections: Section A uses self-reported confidence, and Section B uses application and feedback. Each item was structured to align with best practices in healthcare education evaluation, emphasizing both learner confidence and the likelihood of behavior change. Section A uses a Likert scale to evaluate confidence across key areas, such as understanding risk factors and knowing how to deliver education using the patient pamphlet. This reflects level two of Kirkpatrick's Four-Level Training Evaluation Model, which assesses the extent to which participants gain knowledge, skills, and attitudes. Section B addresses level 3 of Kirkpatrick’s Four-Level Training Evaluation Model, which assesses the extent of knowledge gain, skills, and attitudes. (Kirkpatrick & Kirkpatrick, 2006)

**Theoretical Underpinnings**

The inclusion of health literacy principles is informed by Nutbeam (2000), who emphasizes that public health communication must be clear, accessible, and tailored to improve outcomes among populations with varying levels of literacy. This is particularly relevant in settings like PA Thrive clinics, where socioeconomic and educational disparities may impact patient comprehension. Evaluating whether staff can deliver such information effectively is key to improving screening uptake.

This tool also reflects the educational theory described by Bastable (2019), who identifies the importance of learner-centered teaching and evaluating whether nurses can integrate new knowledge into practice. Bastable highlights that feedback tools should not only assess learning but also explore how education influences attitudes and self-efficacy.

**Effectiveness and Use in Practice**

This evaluation tool supports quality improvement by assessing confidence and preparedness, identifying key areas where further support is needed, and predicting the likelihood of practice change. This tool also ensures that educational content meets the diverse needs of staff.

Providing a patient education pamphlet is an effective strategy for increasing awareness, knowledge, and engagement in preventive health behaviors, such as anal cancer screening, particularly among high-risk populations. Health education materials that are evidence-based, accessible, and tailored to the target population can improve understanding and allow patients to participate more actively in their care (Nutbeam, 2000). For individuals living with HIV, who are at increased risk for anal cancer, an educational pamphlet can address common barriers, low perceived risk, stigma, and lack of knowledge. These factors have been shown to reduce screening uptake (Fein et al., 2021; Sam et al., 2025). When delivered by trained direct care staff in a trusted clinical setting, the pamphlet is effectively used as an informative resource and a conversation starter, facilitating shared decision-making and increasing the likelihood of screening completion (Geba et al., 2024). The use of plain, easily understood language in printed materials enhances comprehension across a range of health literacy levels. This tool is both inclusive and practical (National Cancer Institute, 2024). Overall, integrating a structured educational intervention into routine care is a feasible, cost-effective, and scalable method to promote early detection of anal cancer in vulnerable populations.

**Summary of Methodology**

This study employs a quasi-experimental, single-group posttest design to evaluate the impact of an educational intervention aimed at increasing anal cancer screening rates among PLWH at PA Thrive Partnership clinics. The intervention centers on an evidence-based patient

education pamphlet, which is introduced to patients by direct care staff who first receive targeted training. The project takes place in Pennsylvania-based clinics that serve the PLWH population. The sample includes all patients seen during a 3-month intervention period. Ethical considerations emphasize confidentiality, informed consent, and equitable access to education, which are particularly important when working with the HIV-positive population. The project avoids collecting identifying information, instead focusing on aggregate data such as age, gender, and screening completion rates.

The data collection process involves reviewing secure EHR to track the number of completed anal cancer screenings before and after the intervention. A custom education evaluation tool will be used to assess staff confidence and intention to apply knowledge, grounded in Kirkpatrick's Four-Level Training Evaluation Model and informed by theories of health literacy and adult learning (Kirkpatrick & Kirkpatrick, 2006; Nutbeam, 2000; Bastable, 2019). Nurses are asked to track the number of patients seen at each clinic and the number of patients they provided the anal cancer education pamphlet to (Figure 7). Number of patients seen at each clinic can also be tracked through the EHR system.

Data analysis will involve comparing the number of screenings completed before and after the intervention, organized by patient age and gender. The implementation and data collection timeline will start after nurse education is completed. The data collection period will last a minimum of 3 months after the education. This structured approach, guided by evidence-based frameworks, aims to improve health outcomes and reduce disparities in cancer prevention among high-risk populations.

# Chapter 4

# Results and Discussion

The purpose of this chapter is to review the statistical results of this study. Findings discussed will include the survey results of nurses after the educational session. Data collected on anal cancer pamphlet distribution and anal cancer screenings were completed. This chapter will also discuss the interpretations of these results.

## Results

Education sessions were provided to the nurses at the PA Thrive Partnership clinics. See figure 3: Anal Cancer Education PowerPoint. 5 of the 5 nurses working at the clinics completed the education. It is noted that 4 of the 5 nurses present for the education had completed previous education at the PA Thrive Clinic related to anal cancer and anal cancer screening. Following the education session, surveys were available to the nurses to complete to evaluate the effectiveness of the education session. Surveys were completed by 4 of the 5 nurses present for the education session. Results displayed in Table 4: Education Evaluation Tool Results. Question 1: "I feel confident discussing anal cancer screening with patients." The results were 2 responses strongly agree, 1 result agrees, and 1 result strongly disagrees. Question 2: "I understand the risk factors for anal cancer in high-risk populations." The results were 2 responses strongly agree, 1 result agrees, and 1 result strongly disagrees. Question 3, "I know how to use the educational pamphlet during patient education," resulted in 2 responses strongly agree, 1 result agree, and 1 result strongly disagree. Question 4: "I understand when and how to refer patients for anal cancer screening." The results were 2 responses strongly agree, 1 result agrees, and 1 result strongly disagrees. Question 5 "This education session improved my confidence in supporting patients at risk" resulted in 2 responses strongly agree, 1 result agree, and 1 result strongly disagree. Question 6 "I will incorporate anal cancer screening education into my patient teaching"

response 4 yes. Question 7 “ I plan to initiate more discussions about anal cancer screening with appropriate patients” Response 4 yes. Question 8 “ I understand where to find resources for anal cancer screening if patients need more support” response 4 yes.

The nurses were provided with a tracking form to track the number of patients that received the educational pamphlet on anal cancer. Over the 3-month tracking period 131 patients were seen at clinic. See table 5. The number of patients reported to receive the pamphlet 10. The 121 difference is unknown if pamphlets were distributed.

The number of patients that had anal cancer screening was completed prior to intervention shown in table 3. March 2025: 2, April 2025: 4, May 2025: 4, June 2025: 2, July 2025: 1, August 2025 2, September 2025: 2, October 2025:0. Post intervention anal cancer screenings shown in figure 3. November 2025: 0, December 2025: 1, January 2026: 6, February 2026: 0, March 2026:4.

In the 3 months following the intervention, data collected by age/gender with consent. Of the 7 anal cancer screenings completed, 2 unknown age group and gender, two male in the 40-49 age range, one male in the 50-59 age range, two male in the 60-69 age range. See figure 6.

**Discussion of Results**

Anal cancer screening rates were examined across three distinct time periods to evaluate the potential impact of the educational intervention. During the initial pre-intervention period (May–July 2025), a total of 7 anal cancer screenings were completed, with an average of 2.33 screenings per month. In the subsequent pre-intervention period (August–October 2025), screenings declined to 3 total, representing a decrease to average 1.00 screening per month. Following implementation of the educational intervention, screening rates increased to 7 total screenings during the post-intervention period (November 2025–January 2026), returning to an

average of 2.33 screenings per month. This pattern demonstrates a decline in screening uptake prior to the intervention, followed by an increase after implementation. Although post-intervention screening levels did not exceed the highest pre-intervention period, the observed improvement compared to the immediate pre-intervention decline suggests that the intervention may have been effective in restoring screening rates. These findings support a potential positive effect of the intervention in reversing decreased screening uptake among the target population.

**Limitations**

The following limitations should be considered as having an effect on the results of the study. Limitations of this project include that the study is limited to a single site, the PA Thrive Partnership clinics. This may not reflect practices, populations, or operations in other healthcare settings. The study will be completed within a short timeframe and, therefore, may not capture the long-term effects. Patients, on average, are seen every 6 months. The 3 month time period may not fully show if this intervention was effective as all patients in the clinic were not seen during this time period. Direct care staff will self-report feedback on the survey provided before and after the education session; this could result in bias if feedback is dishonest. The impact of the pamphlet may be limited by inconsistent staffing, staff motivation, or adherence of the pamphlet distribution to patients. A significant limitation discovered in this study is staff adherence to completing the pamphlet tracking form. Though results could suggest effectiveness in education of nurses by increasing their knowledge and confidence, it is unknown if the pamphlets were used as a tool in patient education. Limitations noted at this time in the clinic setting included clinic process changes, and limited staffing during the data collection time.

**Summary**

This chapter presented the statistical results of the educational intervention, including nurse survey outcomes, pamphlet distribution, and anal cancer screening rates. Completed evaluation surveys generally indicated improved knowledge, confidence, and intent to incorporate screening education into practice, although one dissenting response was noted across several items. During the 3-month implementation period, 131 patients were seen, but only 10 pamphlets were confirmed as distributed, with the majority untracked due to documentation gaps. Screening data showed a decline in pre-intervention rates followed by a post-intervention increase, returning to earlier baseline levels and suggesting a potential restorative effect of the intervention. Post-intervention screenings were distributed across age groups, primarily among males, though some demographic data were missing. Despite these findings, limitations—including small sample size, short timeframe, single-site design, reliance on self-reported data, and inconsistent tracking of pamphlet use—restrict the ability to fully determine intervention effectiveness, though results indicate a positive trend in nurse preparedness and screening uptake.

# Chapter 5

## Summary, Conclusions, and Recommendations

### Summary of Findings

Anal cancer diagnoses are on the rise, especially among high-risk populations. A literature review supports the idea that a knowledge deficit contributes to the underutilization of anal cancer screenings, such as anal Pap tests. The hypothesis of this project asks whether providing education to direct care staff at the PA Thrive clinics on an evidence-based best-practice patient education pamphlet about the risk of anal cancer will increase the number of patients who receive anal cancer screenings. This project examined the effectiveness of an educational intervention aimed at increasing anal cancer screening rates among the high-risk population of PLWH seen at the PA Thrive partnership clinics. The intervention included nurse education and the implementation of an evidence-based patient education pamphlet. Results indicated that nurses generally reported improved confidence, knowledge, and intent to incorporate anal cancer screening education into practice following the educational session. Conversely, responses suggest that not all participants experienced the same level of benefit. Limitations include gaps in data collection on the number of patients who received the anal cancer education pamphlet. Screening data showed a decline in rates prior to the intervention, followed by an increase in rates post-intervention. These findings suggest a potential positive impact of the intervention on screening uptake, although limitations in data tracking and study design must be considered.

#### Conclusion

The findings of this study suggest that the educational intervention had a positive effect on both nurse preparedness and anal cancer screening rates within the PA Thrive Partnership

clinics. The increase in screenings following a period of decline indicates that targeted education and patient-focused materials can contribute to improved preventive care practices in high-risk populations. Additionally, nurse-reported increases in confidence and intent to educate patients show the importance of education in aiding in practice change. However, due to limitations such as small sample size, short duration, inconsistent pamphlet tracking, and reliance on self-reported data, the results should be interpreted with caution. While the intervention shows promise, further evaluation is needed to determine its sustained impact and generalizability across broader clinical settings.

**Implications for Nursing**

This study suggested a positive outcome on nursing knowledge and confidence, and the effect on increased anal cancer screenings completed. This finding supports existing literature suggestive of a positive outcome with education as an intervention for practice change. The findings of this study can support positive practice change in healthcare. Direct care education can be used to increase knowledge, confidence, and practice change.

**Recommendations for Further Project**

Limitations were present with nurse compliance in tracking pamphlet distribution. Improvements need to be made for ease and the ability to complete pamphlet distribution tracking. The study showed an increase in anal cancer screenings compared to the previous three-month period. Further study should be completed to determine the validity of anal cancer education to providers as a tool to increase anal cancer screenings in high-risk populations. Due to the size and limit of one office network for the study, it cannot be definitively determined that the educational intervention was fully effective or would be effective for all populations. Expanded time of study is needed to evaluate the effectiveness of the anal cancer education on

the entire population of patients at the PA Thrive clinics. Additional sites should be included to reach broader populations of high-risk individuals. The gender data collection showed 100% of the known gender for screening that was collected was male patients. This study could be applied to settings focusing on women's healthcare and bridge the gap in increasing screenings for women as well.

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**Appendix A**

**Table 1: Education Evaluation Tool**

# Section A: Self-Reported Confidence

Instructions: Indicate how much you agree or disagree with each statement based on your confidence after completing the education.

| Statement | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|
| I understand the risk factors for anal cancer in high-risk populations. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I feel confident discussing anal cancer screening with patients. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I know how to use the educational pamphlet during patient education. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I understand when and how to refer patients for anal cancer screening. | ☐ | ☐ | ☐ | ☐ | ☐ |
| This education | ☐ | ☐ | ☐ | ☐ | ☐ |

| session improved my confidence in supporting patients at risk. | | | | | |
|---|---|---|---|---|---|

## Section B: Application and Feedback

| Statement | Yes | No | Not Sure |
|---|---|---|---|
| I will incorporate anal cancer screening education into my patient teaching. | ☐ | ☐ | ☐ |
| I plan to initiate more discussions about anal cancer screening with appropriate patients. | ☐ | ☐ | ☐ |
| I understand where to find resources for anal cancer screening if patients need more support. | ☐ | ☐ | ☐ |

# Appendix B

## Figure 2: Literature Review Summary

| Authors and Date | Theoretical Framework | Research Questions | Methods | Results Analysis | Conclusion | Implications for Future Research | Implications for Future Practice | APA Reference |
|---|---|---|---|---|---|---|---|---|
| Barquet et al. (2024) | Epidemiological framework | What is the prevalence of high-risk HPV types in PLWH with a cancer history? | Cross-sectional study; HPV testing in PLWH with cancer history | High prevalence of HR-HPV types in anal canal of PLWH with cancer history | Routine screening is critical in this population | Explore HPV strain-specific risks in longitudinal cohorts | Consider incorporating strain-specific HPV screening in HIV care protocols | Barquet, M. S. A., et al. (2024). Prevalence of anal high-risk human papillomavirus (HR-HPV) types in people living with HIV and a history of cancer. HIV Medicine, 25(10), 1145–1153. https://doi.org/10.1111/hiv.13684 |
| Byrnes & Liu (2022). | Pathological diagnostic review | What are the diagnostic challenges and mimics of anal neoplasms? | Narrative review of rare and emerging anal neoplasms | Outlined difficult-to-diagnose tumors and histological mimics | Need for accurate pathology for effective treatment | Develop better histological tools | Enhanced pathologist training and diagnostic accuracy | Byrnes, K., & Liu, X. (2022). Challenging and newly emerging neoplastic diseases in anal canal and their mimics. |
| Cachay et al. (2024). | Epidemiological cohort analysis | What are clinical predictors and outcomes of anal cancer in PLWH? | Inception cohort study of HIV-positive individuals | Older age, low CD4 count, and lack of screening predicted worse outcomes | Routine monitoring and screening are critical in PLWH | Longitudinal studies on immune suppression and cancer progression | Implement structured follow-up and early detection protocols | Cachay, E. R., et al. (2024). Clinical Predictors and Outcomes of Invasive Anal Cancer for People With HIV in an Inception Cohort. Clinical Infectious Diseases, 79(3), 709–716. https://doi.org/10.1093/cid/ciae124 |
| Deshmukh et al. (2020). | Population-based surveillance analysis | What are the incidence and mortality trends for anal squamous cell carcinoma? | SEER database analysis 2001–2015 | Rising incidence and mortality, especially in older adults | Anal cancer is increasing and under-screened | Need to evaluate the effectiveness of new screening methods | Promote early detection and public health education | Deshmukh, A., et al. (2020). Recent trends in squamous cell carcinoma of the anus incidence and mortality in the United States, 2001–2015. JNCI: Journal of the National Cancer Institute, 112(8), 829–838. https://doi.org/10.1093/jnci/djz219 |
| Espirito Santo et | Clinical screening outcom | What are the outcomes of 10 years | Retrospective analysis of | High detection rate of high- | Supports sustained screenin | Evaluate cost-effectivene | Expand screening clinic models | Espirito Santo, I., et al. (2025). Anal Cancer Screening: 10-Year Experience of a |

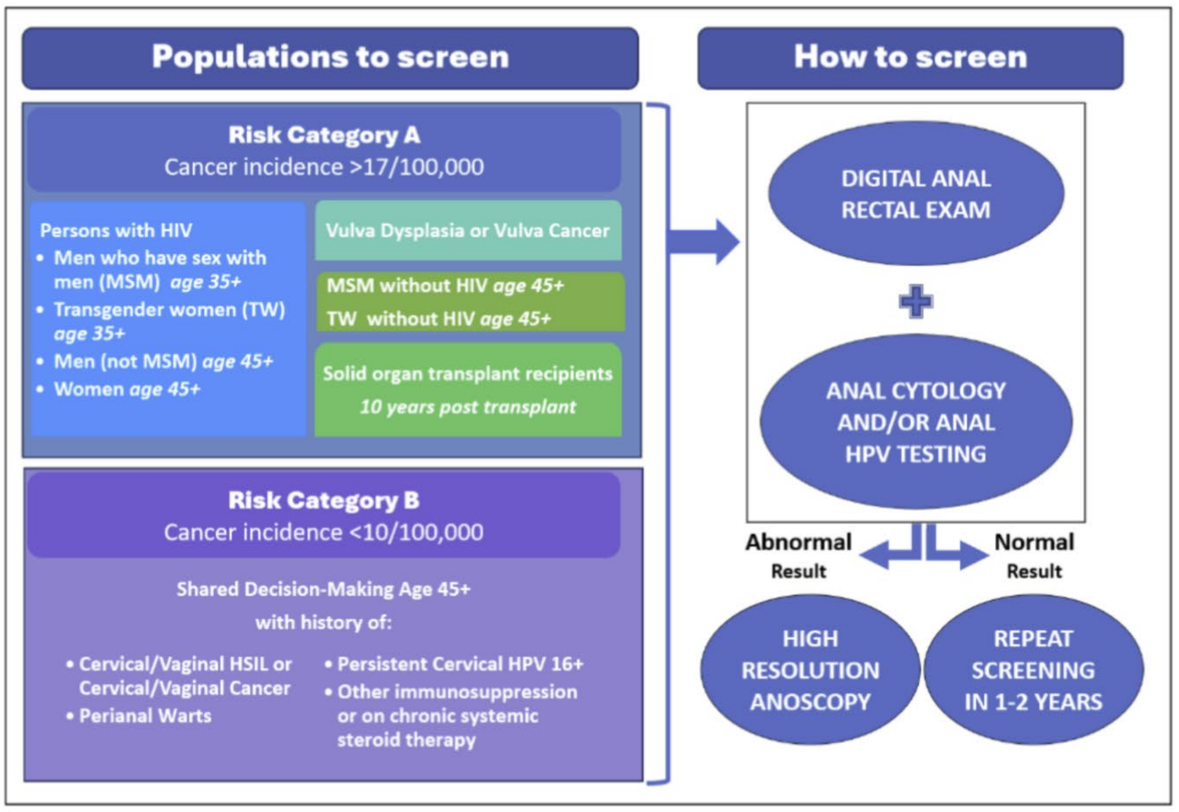
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| al. (2025) | e analysis | of anal cancer screening? | screening clinic records | grade lesions; screening is feasible in the long term | g in high-risk populations | ss over decades | | Specialized Outpatient Clinic. Cancers, 17(2), 193. https://doi.org/10.3390/cancers17020193 |
| Fein et al. (2021). | Health behavior and risk perception | How do transgender individuals perceive anal cancer risk and screening? | Survey-based study in high-HIV/STI areas | Low perceived risk correlated with low screening uptake | Misperceptions hinder screening in high-risk trans communities | Culturally tailored education impact studies | Improve provider training on trans-specific risk communication | Fein, L. A., et al. (2021). Low Perceived Anal Cancer Risk and Screening Utilization Among High-Risk Transgender Men and Women Living in an HIV / STI Epicenter. AIDS & Behavior, 25(7), 2210–2218. https://doi.org/10.1007/s10461-020-03149-w |
| Fuller (2025) | Guideline implementation model | How can new anal Pap test guidelines be incorporated into nursing practice? | Review and synthesis of clinical consensus | Provided implementation steps for clinical settings | Guideline adoption can normalize anal screening | Study adoption barriers in nursing-led settings | Standardize anal Pap test protocols across primary care | Fuller, J. M. (2025). Incorporating Anal Papanicolaou Tests Into Clinical Practice: New Consensus Guidelines. Journal for Nurse Practitioners, 21(3), N.PAG. https://doi.org/10.1016/j.nurpra.2024.105286 |
| Geba et al. (2024). | Behavioral health model | What motivates or prevents HIV+ individuals from engaging in anal cancer screening? | Qualitative interviews in the Ryan White Clinic | Barriers include fear and stigma; facilitators include provider trust | Addressing psychosocial barriers could improve screening uptake | Develop interventions addressing emotional barriers | Use motivational interviewing techniques in care | Geba, M. C., et al. (2024). Identifying Motivators, Facilitators, and Barriers to Engagement and Retention in Anal Cancer Screening Among Men and Women with HIV in One Ryan White HIV/AIDS Clinic. AIDS Patient Care & STDs, 38(11), 530–538. https://doi.org/10.1089/apc.2024.0171 |
| Higashi et al. (2022). | Systems theory | What challenges do providers face in offering anal cancer screening | Semi-structured interviews | Barriers include institutional policy gaps, time constraints | Provider training and system support are key | Interventions for improving system-level coordination | Create EMR prompts and workflow aids | Higashi, R. T., et al. (2022). Anal cancer screening among women with HIV: provider experiences and system-level challenges. AIDS Care, 34(2), 220–226. https://doi.org/10.1080/09540121.2021.1883512 |

| | | to women with HIV? | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Leclerc et al. (2024) | Public health screening model | Does organized screening reduce anal cancer in HIV-positive patients? | Cohort study of screened vs. unscreened | Significant reduction in high-grade lesions among screened | Organized screening improves outcome | Assess long-term impacts on morbidity/ mortality | Adopt universal screening strategies | Leclerc, E., et al. (2024). Impact of screening programme to prevent anal cancer in high-risk patients with HIV. HIV Medicine, 25(4), 454–461. https://doi.org/10.1111/hiv.13594 |
| National Cancer Institute (2024) | Epidemiological surveillance | What are the rates and demographic patterns of anal cancer in the US? | SEER database descriptive statistics | Higher rates in older adults and PLWH | Anal cancer incidence is rising in certain populations | Explore regional variation and trends | Target high-risk populations with education and screening | National Cancer Institute. (2024). Cancer stat facts: anal cancer. https://seer.cancer.gov/statfacts/html/anus.html |
| NIH (2024a) | Screening innovation model | What recent advances improve anal cancer screening access? | Policy and literature summary | Emerging tech and new guidelines support early detection | Innovation is key to prevention | Study the real-world application of tools | Adopt evidence-based technology in care | National Institutes of Health. (2024). Anal cancer advances open door to screening and prevention. NCI. |
| NIH (2024b) | Clinical guideline development | What are the updated screening recommendations for PLWH? | Clinical guideline update | High Resolution Anoscopy is now recommended | HRA should be routine for PLWH | Evaluate HRA implementation effectiveness | Train providers in HRA use and interpretation | NIH. (2024). HIV clinical guidelines now recommend High Resolution Anoscopy as part of anal cancer screening program for people with HIV. |
| Sam et al. (2025). | Behavioral theory and stigma | What are the barriers/facilitators to anal cancer screening among MSM? | Systematic review and narrative synthesis | Stigma, lack of knowledge, and discomfort are barriers | Tailored education can increase screening rates | Test behavior-change interventions | Normalize screening conversations | Sam, I., et al. (2025). Barriers and facilitators to anal cancer screening among men who have sex with men: a systematic review with narrative synthesis. BMC Cancer, 25(1), 1–12. https://doi.org/10.1186/s12885-025-13980-w |

**Table 2: Literature Review Summary**

## Appendix C

**Figure 1: International Guideline for Anal Cancer Screening**



Appendix D

Figure 2: Anal Cancer Education Pamphlet

# *Understanding Anal Precancer & Cancer*

*What You Need to Know to Stay Healthy*

## What Is Anal Precancer?

- Anal precancer means there are changes or growths in the skin around the anus. These changes are **not cancer**, but they *could* turn into cancer later if not watched closely.
- Many of these changes are caused by a virus called **HPV** (human papillomavirus). HPV can cause problems in both boys and girls. It can lead to growth inside or outside the anus.

## What Are the Signs?

Sometimes, there are no signs at all. But some people may notice:

- Itching
- Bleeding
- Lumps or warts

## Who Is at Risk?

You may be at higher risk if you:

- Have HPV
- Are HIV-positive
- Are over 50
- Smoke
- Have had a transplant

Anal Cancer Foundation. (2024). *Understanding anal precancer and cancer: What you need to know to stay healthy*. https://www.analcancerfoundation.org

## How Do You Get Checked?

There are a few ways doctors can check for anal precancer:

- **Anal Pap Test**: Like a cervical pap smear, but for the anus
- **Digital Exam (DARE)**: Doctor uses a finger to feel for lumps
- **Anoscopy**: A small tube helps the doctor look inside
- **High-Resolution Anoscopy (HRA)**: A more detailed look

## Why Is Screening Important?

Even if you feel fine, regular screening can:

- Find problems early
- Help stop cancer before it starts
- Give you peace of mind

**Appendix E**

**Table 3**: *Anal Cancer Screenings Completed by Month*

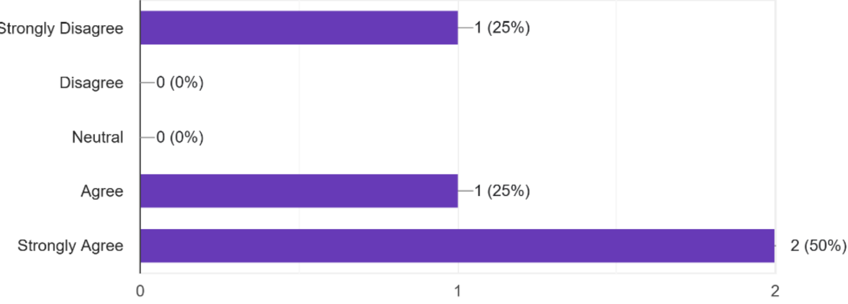
| Month | Year | Anal Cancer Screening Completed |
|---|---|---|
| March | 2025 | 2 |
| April | 2025 | 4 |
| May | 2025 | 4 |
| June | 2025 | 2 |
| July | 2025 | 1 |
| August | 2025 | 1 |
| September | 2025 | 2 |
| October | 2025 | 0 |
| November | 2025 | 0 |
| December | 2025 | 1 |
| January | 2026 | 6 |

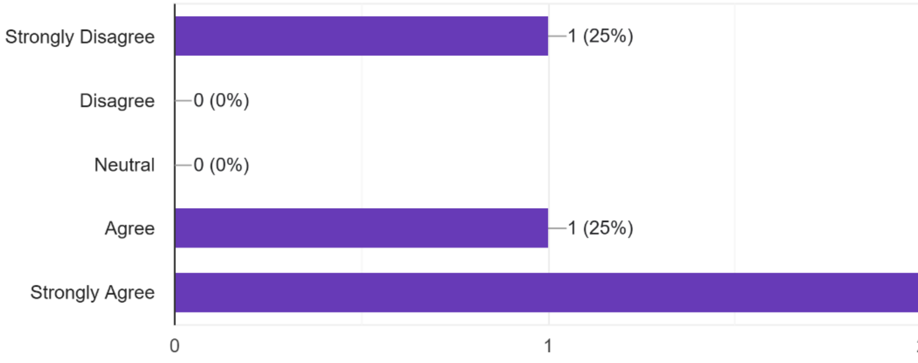
| | | |
|---|---|---|
| February | 2026 | 0 |
| March | 2026 | 4 |

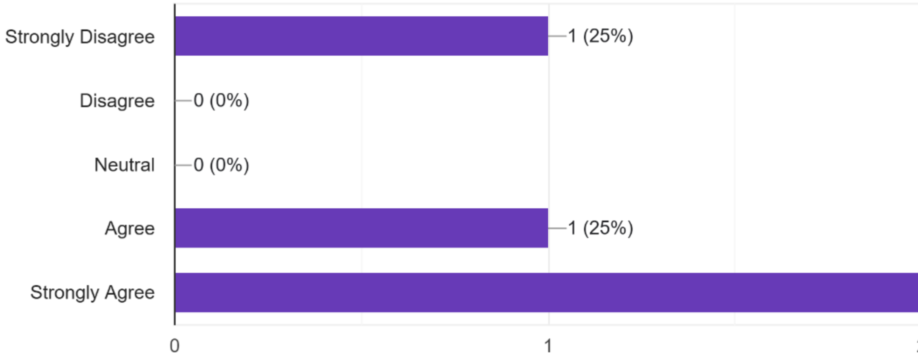
*Note. Anal cancer screenings completed per month across the study period.*

**Appendix F**

Table 4 : Education Evaluation Tool Results

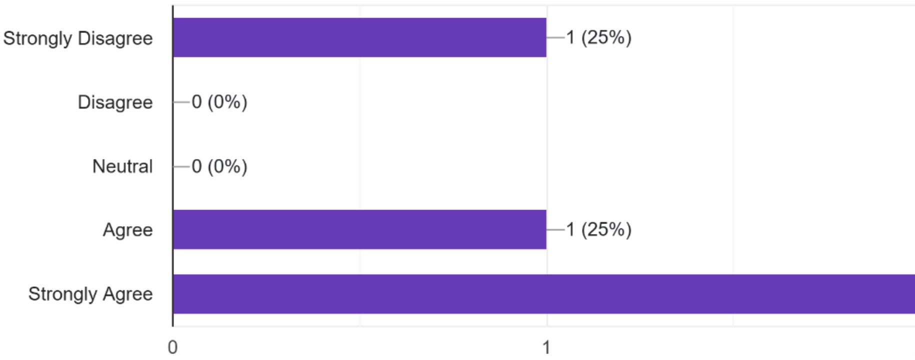


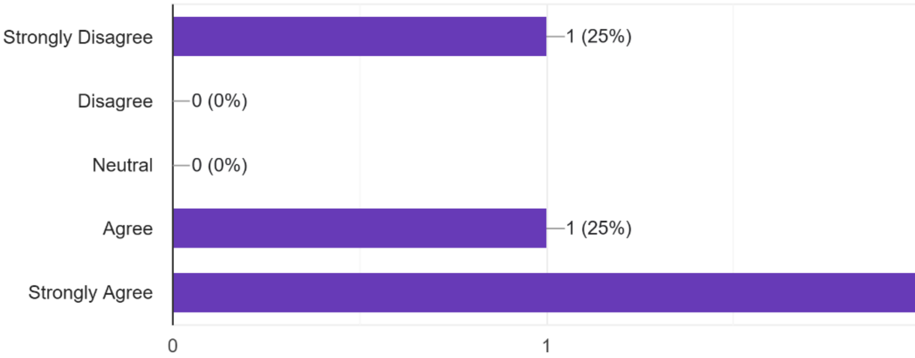

I understand the risk factors for anal cancer in high-risk populations.
4 responses
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
1 (25%)
0 (0%)
0 (0%)
1 (25%)
0
1
2


I know how to use the educational pamphlet during patient education.
4 responses
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
1 (25%)
0 (0%)
0 (0%)
1 (25%)
0
1
2

I understand when and how to refer patients for anal cancer screening.

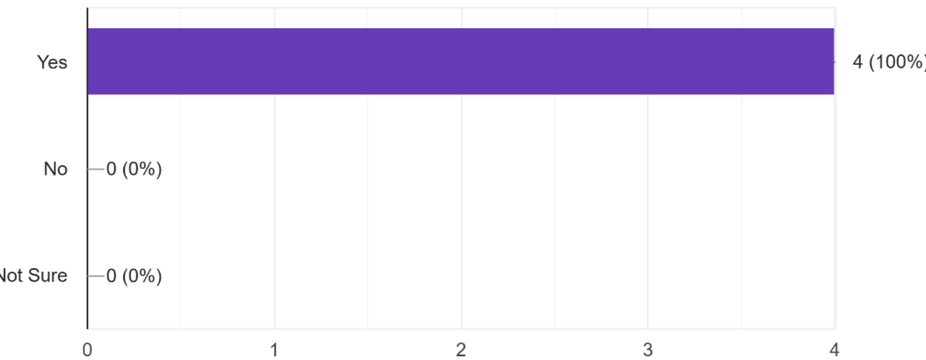
4 responses




This education session improved my confidence in supporting patients at risk.
4 responses
Strongly Disagree
Disagree
Neutral
Agree
Strongly Agree
1 (25%)
0 (0%)
0 (0%)
1 (25%)
0
1
2

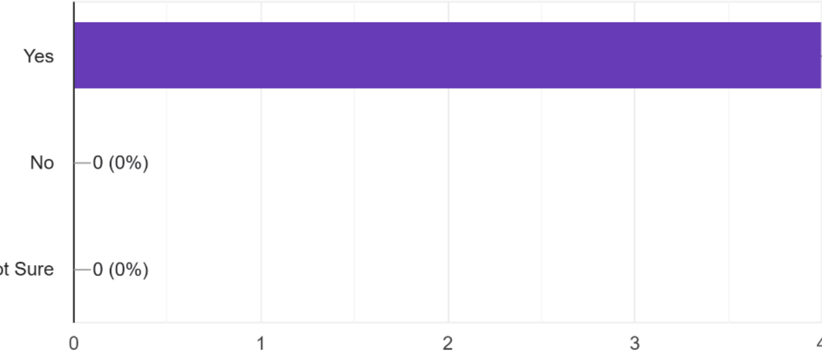
I plan to initiate more discussions about anal cancer screening with appropriate patients.

4 responses



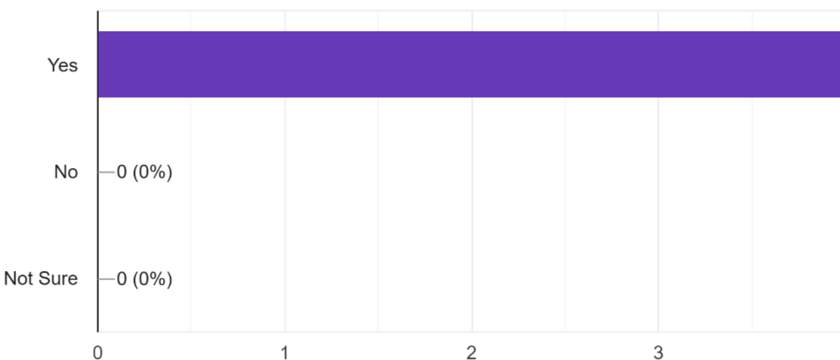

I will incorporate anal cancer screening education into my patient teaching.

4 responses



I understand where to find resources for anal cancer screening if patients need more suppo

4 responses

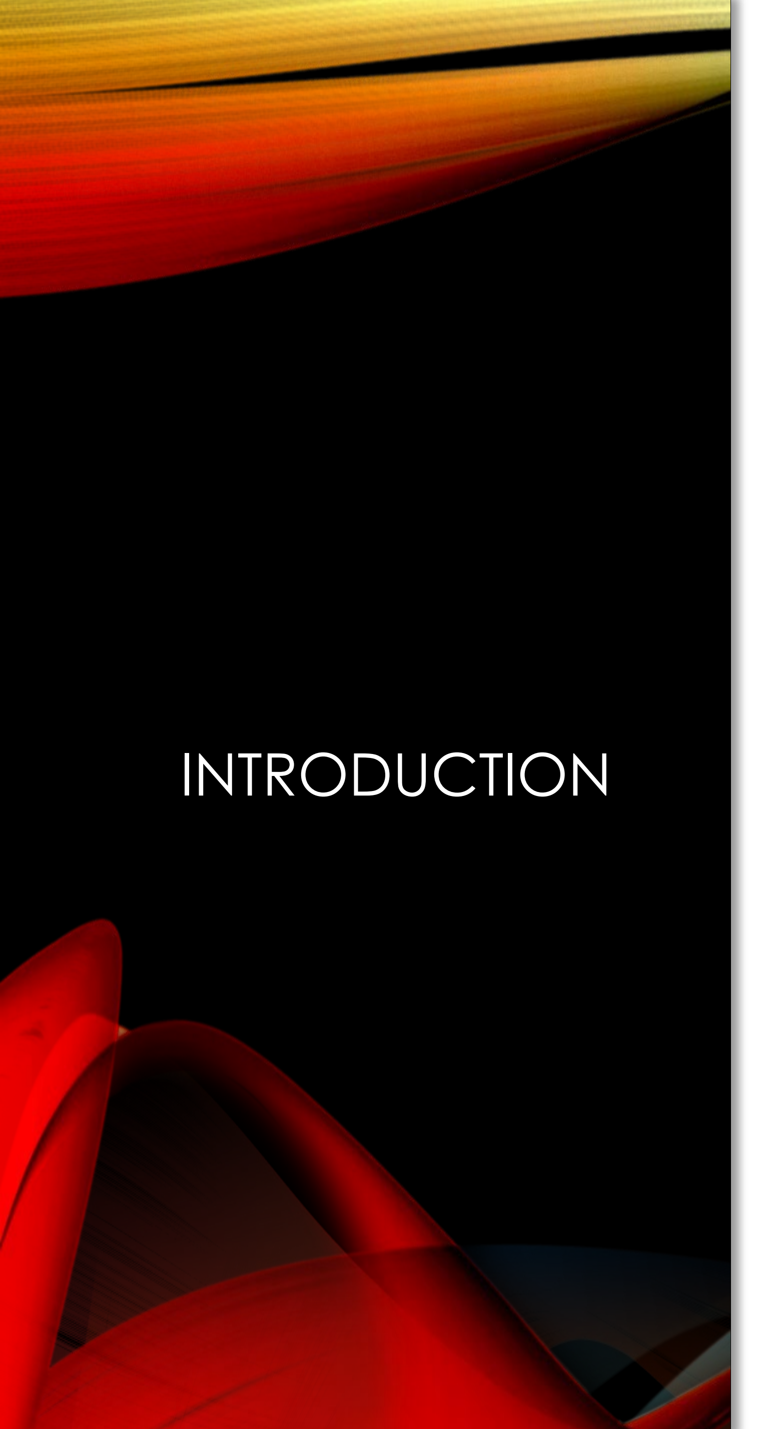


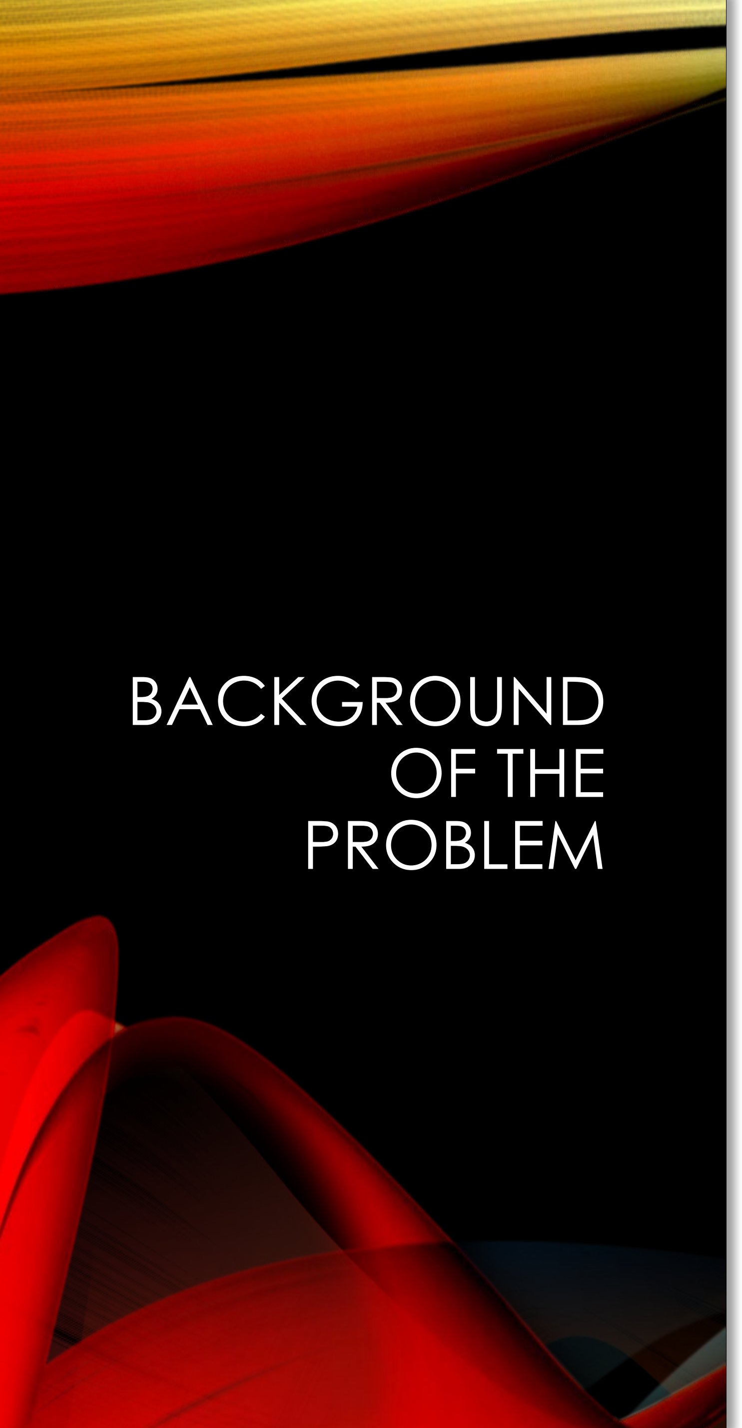
**Appendix G**

**Figure 4: Anal Cancer Education Power Point**

# INCREASING ANAL CANCER SCREENINGS (ANAL PAP)

Heather Leadbetter MSN RN DNP Candidate
DNP Project
Pennsylvania Western University


INTRODUCTION



# BACKGROUND OF THE PROBLEM

- Education as a strategy to improve screening
- Anal cancer increasing
- Higher prevalence in PLWH and other risk groups

## Populations to screen

### Risk Category A
Cancer incidence >17/100,000

**Persons with HIV**
- Men who have sex with men (MSM) *age 35+*
- Transgender women (TW) *age 35+*
- Men (not MSM) *age 45+*
- Women *age 45+*

**Vulva Dysplasia or Vulva Cancer**

**MSM without HIV *age 45+***
**TW without HIV *age 45+***

**Solid organ transplant recipients**
*10 years post transplant*

### Risk Category B
Cancer incidence <10/100,000

**Shared Decision-Making Age 45+ with history of:**
- Cervical/Vaginal HSIL or Cervical/Vaginal Cancer
- Perianal Warts
- Persistent Cervical HPV 16+
- Other immunosuppression or on chronic systemic steroid therapy

## How to screen

DIGITAL ANAL RECTAL EXAM

ANAL CYTOLOGY AND/OR ANAL HPV TESTING

**Abnormal** Result → HIGH RESOLUTION ANOSCOPY

**Normal** Result → REPEAT SCREENING IN 1-2 YEARS

SUMMARY
OF THE
PROBLEM

- Rising incidence in high-risk groups

- Underutilized screenings

- Education as a solution

# *Understanding Anal Precancer & Cancer*

*What You Need to Know to Stay Healthy*

### What Is Anal Precancer?

- Anal precancer means there are changes or growths in the skin around the anus. These changes are **not** cancer, but they *could* turn into cancer later if not watched closely.

- Many of these changes are caused by a virus called **HPV** (human papillomavirus). HPV can cause problems in anyone who engages in any type of sexual activity. It can lead to growths inside or outside the anus.

### What Are the Signs?

Sometimes, there are no signs at all. But some people may notice:

- Itching
- Bleeding
- Lumps or warts
- Pain

### Who Is at Risk?

You may be at higher risk if you:

- Have HPV
- Are HIV-positive
- Are over 50
- Smoke
- Have had a transplant
- Weakened Immune system
- Cervical, vaginal, or vulva cancer or precancer

Created by Heather Leadbetter RN MSN CCM

Reference:

Anal Cancer Foundation. (2024). *Understanding anal precancer and cancer: What you need to know to stay healthy.* https://www.analcancerfoundation.org

### How Do You Get Checked?

There are a few ways doctors can check for anal precancer:

- **Anal Pap Test**: Like a cervical pap smear, but for the anus
- **Digital Exam (DARE)**: Doctor uses a finger to feel for lumps
- **Anoscopy**: A small tube helps the doctor look inside
- **High-Resolution Anoscopy (HRA)**: A more detailed look

### Why Is Screening Important?

Even if you feel fine, regular screening can:

- Find problems early
- Help stop cancer before it starts
- Give you peace of mind

# SETTING AND SAM

- PA Thrive clinics, PA

- PLWH patients c
three-month per

# ETHIC
# CONSIDERATIO

- CONFIDENTIALITY
- AUTONOMY AND INFORMED CONSENT
- HEALTH LITE CONSIDERAT

# DATA COLLECTION A ANALY

- • EHR data on screening uptake
- • Variables: number, age, gender
- • Compare pre- and post-intervention

# TIMEL

Implement use of Anal Cancer pamphlet after this session - 10/28/25

Collect data for three months – Ending 1/28/25

Each nurse will be provided with a folder containing the education pamphlet and patient consents.

There will be a log on the front of the folder – you will keep track of how many patients are seen at each clinic and how many were provided the pamphlet to

Patients can sign and return the consent immediately upon receiving the information.

Keep completed consents in the provided folder.

If patients do not sign consent their age and gender will not be recorded when collecting data.

---

After this session you will complete a survey related to the education today.

Anonymous results of post-education survey.

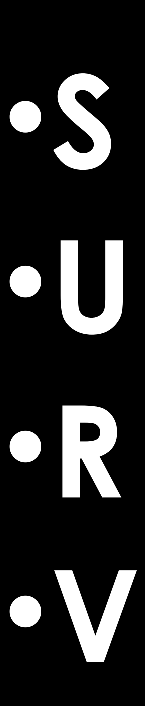
Number of patients seen at each clinic

Number of patients documented as receiving the anal cancer education pamphlet.

Number of patients that received anal paps in the 3 months before intervention.

Number of patients who received anal paps in the 3 months after the intervention

In overall patient numbers, grouping by gender and age range



**Scan me!**

# SURV

- https://docs.google.com/forms/d/e/1FAIpQLSdC0
d6NeLNBImLn1W2ja7LIWLIMdCFeSFQQr1IkA50WwA
wform?usp=header

# REFERENC

- Key sources included:
- ACF (2024)
- Barquet et al. (2024)
- Byrnes & Liu (2022)
- Deshmukh et al. (2020)
- Fein et al. (2021)
- Fuller (2025)
- Geba et al. (2024)
- Iowa Model Collaborative (2017)
- Kirkpatrick & Kirkpatrick (2006)
- Nutbeam (2000)
- NIH (2024)
- Sam et al. (2025)

## Appendix H

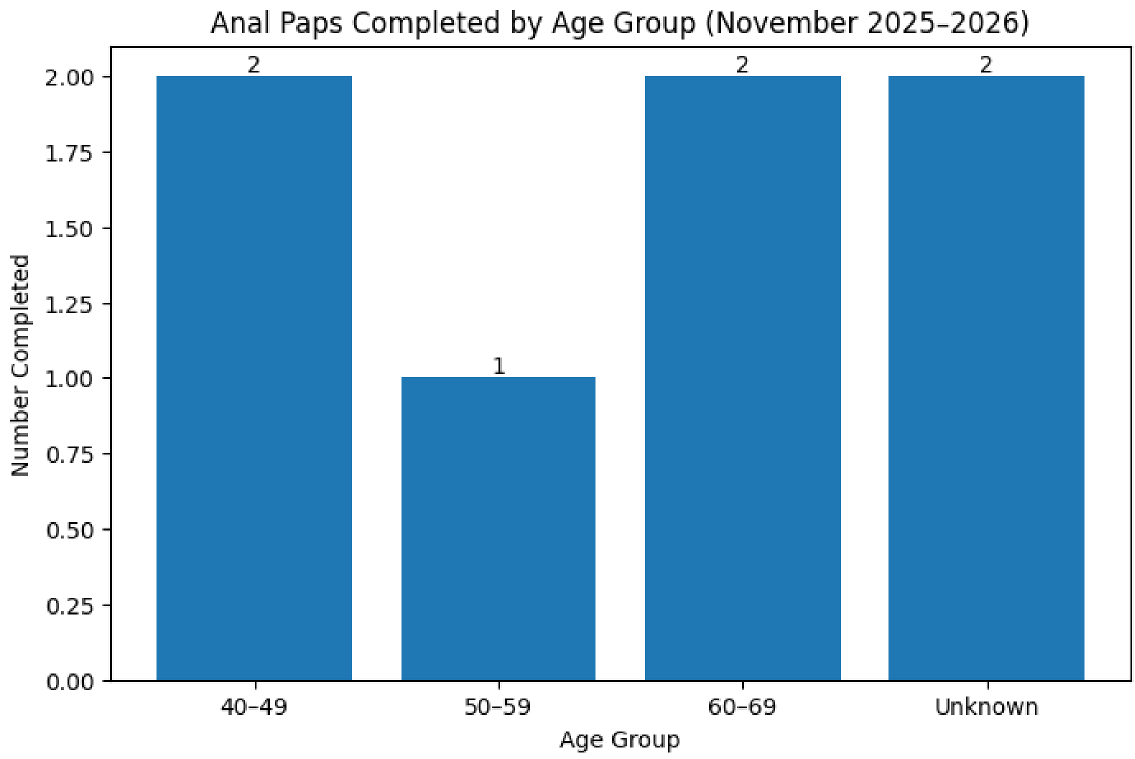
**Table 5:** ***Clinic Visits November 2025–January 2026***

| Clinic | Nov 2025 | Dec 2025 | Jan 2026 | Total |
|---|---|---|---|---|
| Clarion | 3 | 5 | 3 | 11 |
| Dubois | 6 | 0 | 0 | 6 |
| Erie | 20 | 20 | 16 | 56 |
| Meadville | 6 | 6 | 0 | 12 |
| New Castle | 11 | 8 | 11 | 30 |
| Seneca | 5 | 0 | 6 | 11 |
| Warren | 0 | 5 | 0 | 5 |
| Totals | 51 | 44 | 36 | 131 |

*Note. HIV medical appointments seen by provider and RN.*

**_Appendix I_**

*Figure 6: Anal cancer screening completed by Age Group*




*Note. Distribution of anal cancer screenings by age group, including unknown age category.*

## Appendix J

**Table 7:** *Anal cancer screening Completed by Time Period*

| Time Period | Total Screenings | Monthly Average |
|---|---|---|
| May–July (Pre) | 7 | 2.33 |
| Aug–Oct (Pre) | 3 | 1.00 |
| Nov–Jan (Post) | 7 | 2.33 |

*Note. Monthly averages calculated based on number of months within each time period.*

## Appendix K

**Figure 4: Institutional Review Board Approval**

Pennsylvania Western University
Institutional Review Board
250 University Ave | California, PA 15419
IRB@pennwest.edu

9/2/2025

Heather Leadbetter, MSN
Doctor of Nursing Practice Candidate
Pennsylvania Western University
leadbetter_h@pennwest.edu

Title of Study: Increasing Anal Cancer Screenings
Protocol Tracking #: PWIRB25005HL-EP
Approval Date: 9/2/2025
Approved Study Period: 9/2/2025 to 11/30/2025

Dear Ms. Leadbetter,

On behalf of the Institutional Review Board (IRB) at Pennsylvania Western University, I am pleased to inform you that the above-referenced research study has been reviewed and approved. Since your application involves educational interventions with clinicians and minimal-risk collection of de-identified health information, your protocol qualifies for Expedited Review under 45 CFR 46.110, Category 7.

This study falls under the oversight of Pennsylvania Western University's Institutional Review Board (IRB00003711), operating under a Federalwide Assurance (FWA00032724) filed with the U.S. Department of Health & Human Services (IORG0003094). Please retain this letter for your records and for use in grant, publication, or program/institutional documentation.

You are expected to continue conducting this study in accordance with the ethical principles of the Belmont Report and all applicable institutional and federal guidelines.

Please notify the IRB of any proposed modifications, unanticipated problems, or adverse events. If you have any questions, please contact us at IRB@pennwest.edu.

Best,

Nikolas C. Roberts, Ph.D.
Director, Institutional Review Board
Pennsylvania Western University
roberts_n@pennwest.edu

Institutional Review Board
724 938 4178
irb@pennwest.edu

IRB Renewal Approval Notification

Dear Heather Leadbetter,

Please consider this email as official notification that your proposal titled "Increasing Anal Cancer Screening" has been approved by the PennWest Institutional Review Board (IRB) for a 3-month renewal, using the new tracking number PWIRB25005HL-EP

The effective date of approval is November 13, 2025, and the expiration date is February 12,2026. Please ensure these dates appear on all consent forms associated with this study. In accordance with federal policy, please be reminded of the following requirements:

1. Protocol Changes: Any additions or modifications to study procedures must receive prior IRB approval before implementation.
2. Adverse Events: You must promptly report any events affecting the safety or well-being of participants.
3. Study Modifications: If changes are required because of any reported events, these must be submitted to and approved by IRB.
4. Continuing Review: To continue research beyond the expiration date above you must submit a request for continuing review. Please contact IRB@pennwest.edu for guidance.

Researchers are responsible for conducting research in accordance with ethical principles outlined in the Belmont Report, all applicable federal and state regulations, and Penn West University policies. The IRB is registered with the U.S. department of Health and Human services under IRB00003711 and operates under Federal-Wide Assurance FWA00032724 and IORG0003094.

Additionally, please notify the IRB once data collection is complete.

Sincerely,

IRB

## Appendix L

**Figure 5: Provider Consent**

### PARTICIPANT CONSENT FORM

**University Affiliation**: Pennsylvania Western University Clarion Administrative Office

108 Carrier Administration Building Clarion, PA 16214 814-393-2337

**Project Title: Increasing Anal Cancer Screenings**

**Project Lead:** Heather Leadbetter MSN, CCM 122 Brees Lane Clarion PA 16214, (814)227-8359, leadbetter_h@pennwest.edu

**Faculty Advisor**: Dr. Emilie Kennedy DNP, CRNP, FNP-C 124 Ralston Hall Clarion PA 16214, (724)954-9621, ekennedy@pennwest.edu

You are invited to participate in a project being conducted through Pennsylvania Western University. We ask that you read this form and ask any questions you may have before you decide whether or not you want to participate in the project. Please feel free to ask the project lead any questions you may have. The university requires that you give your signed agreement if you choose to participate.

**Purpose of the Project:** Anal cancer diagnoses have been rising in recent decades. Among high-risk populations such people living with Human Immunodeficiency Virus (HIV), anal cancer cases are much higher than the general populations. Anal cancer screenings are available but underutilized even in high-risk populations. There is a need for increased interventions, especially in high-risk populations to educate patients and screen for anal precancer and cancerous cells.

This study will examine the use of an evidence-based educational pamphlet for patients at the PA Thrive Partnership clinics to increase the number of high-risk patients that have anal cancer screenings completed. This is a quantitative study, measuring statistics around the number of patients receiving anal cancer screenings before and after the implementation of the patient pamphlet. The theoretical framework appropriate for this project is the Iowa Evidence Based Practice (EBP) framework. The Iowa EBP framework includes identifying a problem, research to support, design an appropriate change process, and integrate and sustain the change.

**Procedures:** If you agree to participate in this project, we will ask you to do the following: attend an education session for nurses and providers and the PA Thrive Partnership clinics. You will be provided with this consent form in person or via email. You will then be instructed to sign the consent form voluntarily. The lead will start the educational session followed by answering questions. You will be provided with an email or link to an electronic post-educational survey. Your answers for the survey will be assigned a number, your name and identifying information will not be recorded for confidentiality reasons.

**"Increasing Anal Cancer Screenings" (Proposal # PWIRB25005HL-EP) has been approved by the Pennsylvania Western University Institutional Review Board as submitted.**

## Appendix M

## Figure 6: Patient Consent

### PARTICIPANT CONSENT FORM

**University Affiliation**:

Pennsylvania Western University Clarion Administrative Office

108 Carrier Administration Building Clarion, PA 16214 814-393-2337

**Project Title: Increasing Anal Cancer Screenings**

**Project Lead:** Heather Leadbetter MSN, CCM 122 Brees Lane Clarion PA 16214, (814)227-8359, leadbetter_h@pennwest.edu

**Faculty Advisor**: Dr. Emilie Kennedy DNP, CRNP, FNP-C 124 Ralston Hall Clarion PA 16214, (724)954-9621, ekennedy@pennwest.edu

You are invited to participate in a project being conducted through Pennsylvania Western University. We ask that you read this form and ask any questions you may have before you decide whether or not you want to participate in the project. Please feel free to ask the project lead any questions you may have. The university requires that you give your signed agreement if you choose to participate.

**Purpose of the Project:**

Anal cancer diagnoses have been rising in recent decades. Among high-risk populations such people living with Human Immunodeficiency Virus (HIV), anal cancer cases are much higher than the general populations. Anal cancer screenings are available but underutilized even in high-risk populations. There is a need for increased interventions, especially in high-risk populations to educate patients and screen for anal precancer and cancerous cells.

This study will examine the use of an evidence-based educational pamphlet for patients at the PA Thrive Partnership clinics to increase the number of high-risk patients that have anal cancer screenings completed. This is a quantitative study, measuring statistics around the number of patients receiving anal cancer screenings before and after the implementation of the patient pamphlet. The theoretical framework appropriate for this project is the Iowa Evidence Based Practice (EBP) framework. The Iowa EBP framework includes identifying a problem, research to support, design an appropriate change process, and integrate and sustain the change.

**Procedures:**

If you agree to participate in this project, the following information would be collected, if completion of anal screening was completed, age range, and gender. No other demographic or identifying information would be collected or stored. You will be provided with this consent form in person. You will then be instructed to sign the consent form voluntarily. Your name and identifying information will not be recorded for confidentiality reasons.

## Appendix N

### Figure 7: Pamphlet Tracking Form

PA Thrive Partnership – DNP Project: Increasing Anal Cancer Screening

Anal Cancer Education Pamphlet Tracking Form

| Clinic Date | # of patients seen | # of patients that received pamphlet | Nurse Initials |
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