PRIMARY CARE PROVIDER PERSPECTIVES ON SPECIMEN SELF-COLLECTION FOR CERVICAL CANCER SCREENING

by

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Abstract

Cervical cancer incidence continues to rise across Canada. Unlike some other cancers, cervical cancer is largely preventable through a combination of vaccination and routine screening. Cervical cancer screening was introduced in British Columbia in 1955 using the Papanicoulau smear which requires a cervical specimen be obtained during a pelvic exam. However, the pelvic exam has been identified by patients as a barrier to participation in cervical cancer screening. Today, vaginal human papillomavirus testing provides a safe, validated alternative to the Papanicoulau smear. Importantly, the human papillomavirus specimen can be collected by patients themselves using a vaginal swab, thereby removing pelvic exam-related barriers to cervical cancer screening. Specimen self-collection tends to be preferred by patients, however primary care providers' perspectives on its use are not known. Primary care providers, including nurse practitioners, have the potential to impact their patients' health behaviours, and as such, understanding providers' perspectives on the use of self-collection is an important consideration in order to reduce the burden of cervical cancer.

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Glossary

Pap test (Papanicoulau smear): screening test for cervical cancer, in use since 1928, that involves the microscopic examination of cervical epithelial cells for cellular abnormalities, which may or may not be precancerous (National Cancer Institute, 2024).

Primary care provider: in British Columbia, health care professionals, such as family physicians and nurse practitioners who serve as the first point of contact between a patient and the healthcare system, and who tend to provide longitudinal care including prevention, diagnosis, and treatment of acute and chronic conditions (Ministry of Health, 2025).

Self-collection: process by which an individual collects their own vaginal sample using a swab or brush and submits the specimen to be tested for the presence of human papillomavirus for the purpose of cervical cancer screening (Brennan et al., 2024).

Self-testing: process by which an individual collects their own vaginal sample using a swab or brush and completes point-of-care testing for the presence of human papillomavirus for the purpose of cervical cancer screening (Brennan et al., 2024).

Screening: medical testing undertaken to detect health concerns or diseases in individuals without symptoms of the disease of interest. With respect to cervical cancer, screening can "prevent cancer or help catch it in its earliest stages, allowing more treatment options and a better chance of recovery" (Provincial Health Services Authority; 2025b, para. 2).

Testing: also known as diagnostic testing, process in which symptomatic individuals or those who screen positive for a given condition undergo further assessment to confirm or exclude a diagnosis (Guidelines and Protocols Advisory Committee, 2016).

Additional note about language: Any individual with a uterine cervix, regardless of their gender, is at risk for cervical cancer. In an effort to use inclusive language that reflects biological risk for cervical cancer, I have avoided references to women and men, and instead used gender neutral terms, such as patient or individual, whenever possible.

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Chapter One: Introduction

Cervical cancer screening (CCS) is an effective, longstanding practice for preventing cervical cancer; it is also a clinical practice area that is undergoing significant transformation in British Columbia (BC) and globally. Until recently, CCS required a Pap test, which involves the collection of a cervical specimen during a pelvic exam. Recent advances in CCS have enabled specimen self-collection, which allows patients the option of collecting their own vaginal specimen and does not require a pelvic exam. Previous studies have suggested that self-collection is widely preferred by patients over clinician-collected specimens for CCS. However, provider perspectives are not well-researched. Given the potential impacts on their patients' health behaviours, primary care provider (PCP) perspectives on the use of self-collection for CCS may provide valuable insights into best practices and implementation strategies.

The integrative review (IR) that follows was undertaken to answer the question "*What are the perspectives of primary care providers towards specimen self-collection for cervical cancer screening?*". Chapter Two provides an overview of each component of the research question, such as CCS, self-collection, and PCPs, as well as background and context to situate the research question and subsequent analysis. Chapter Three describes the application of the Whittemore and Knafl (2005) IR framework to the research question, including processes and key decision points related to problem identification, literature search, data evaluation, and data analysis. Chapter Four begins with a description of the dataset and presents the findings from the literature. Chapter Five synthesizes these findings, discussing their implications for clinical practice, health policy, and future research endeavours. Finally, Chapter Six offers a conclusion, summarizing the principal insights and recommendations derived from this IR.

Chapter Two: Background and Context

This chapter introduces key concepts and context that informed this IR, which sought to answer the question, "*What are the perspectives of primary care providers towards specimen self-collection for cervical cancer screening?*". Relevant foundational concepts related to CCS practices and emerging approaches to specimen self-collection are presented. Additionally, temporal and geographic aspects of the study context are described to situate the IR.

Cervical Cancer Epidemiology

According to the Canadian Partnership Against Cancer (CPAC, 2024), cervical cancer incidence has been increasing across Canada since 2013. In 2023, 400 people in Canada died of cervical cancer, and 1550 people were diagnosed (CPAC, 2024). Within BC, approximately 200 individuals are diagnosed with cervical cancer annually, and of these, approximately 50 individuals will die from it (HealthLinkBC, 2024).

In 2020, the World Health Organization (WHO) announced a strategic initiative to eliminate cervical cancer by 2030 (Davies-Oliviera, 2021). Their three-pronged strategy involves identifying targets for vaccination, screening, and treatment, all with the aim of reducing the global burden of cervical cancer (Davies-Oliviera, 2021). Evidence to guide best practices in all three areas is evolving. Recently, in the province of BC, efforts have focused on increasing participation in CCS, with significant changes in how patients access this service and how testing is performed (Provincial Health Services Authority [PHSA], 2025b).

Human Papillomavirus

The human papillomavirus (HPV) is a common sexually transmitted infection that can be spread through oral, genital, and anal sexual contact (HealthLinkBC, 2024). An estimated 75% of unvaccinated sexually active individuals will contract HPV in their lifetime (Public Health

Agency of Canada [PHAC], 2024). One reason that HPV is so prevalent is that HPV infections are often asymptomatic and, if a person is unaware they have contracted the virus, they can unknowingly spread the virus to others.

Human papillomavirus often does not require treatment and will typically clear on its own in healthy individuals (PHAC, 2024). Most types of HPV are considered 'low-risk'; these genotypes may cause genital warts but are otherwise not considered to be harmful (PHSA, 2025d). However, some HPV genotypes, if left untreated, may eventually lead to cervical or other cancers (WHO, 2024; PHSA, 2025d). Seventy percent of cervical cancers are caused by two 'high-risk' types of HPV: 16 and 18 (WHO, 2024), and approximately 95% of all cervical cancers are caused by persistent HPV infection of the cervix (WHO, 2024).

Non-Cervical Human Papillomavirus-associated Cancers

While the focus of this IR is cervical cancer prevention and screening, it is important to note that HPV infection can also cause cancers of the mouth and oropharynx in males and females, as well as anal and penile cancers in males (PHAC, 2012). In fact, the majority of cancers caused by HPV are non-cervical (PHAC, 2024). According to PHAC (2024), "Globally, it is estimated that 620,000 new cancer cases in women and 70,000 new cancer cases in men were caused by HPV in 2019" (PHAC, 2024, Epidemiology sect.). As a result, vaccination against HPV is an important consideration for males and females, as will be examined in the next section.

Prevention of Cervical Cancer

Like other types of cancer, cervical cancer negatively impacts individuals and their families, and places a significant burden on the health care system. However, unlike other types

of cancer, cervical cancer is largely preventable through a combination of vaccination and routine screening.

Vaccination

Stopping the transmission of HPV infection is the most effective way to prevent it from causing harm, and therefore, vaccination against HPV is a strategy for primary prevention of cervical cancer. In Canada, two vaccines against HPV have been approved: Gardasil protects against nine types of HPV (including types 16 and 18) and Cervarix is specifically targeted to protect against HPV types 16 and 18 (PHAC, 2024).

Because vaccination prevents HPV infection but does not clear it, HealthLinkBC (2024) recommends that individuals be immunized prior to becoming sexually active and potentially being exposed to HPV. When the Gardasil vaccine was first introduced in BC in 2008 (PHAC, 2012), cervical cancer prevention was the priority and vaccination efforts were initially targeted at female children in Grade 6, a time that is generally considered to be prior to HPV exposure (HealthLinkBC, 2024). In 2010, access to Gardasil to was expanded to include females and males aged nine to twenty-six years and, in 2011, Gardasil became available to females up to the age of 45 years (PHAC, 2012). By contrast, Cervarix is only approved for use in females (HealthLinkBC, 2024). In BC, Gardasil is provided free to eligible individuals, whereas Cervarix can be purchased from pharmacies (HealthLinkBC, 2024).

Because vaccination against HPV is still a relatively new intervention, a significant proportion of the population remains unvaccinated and therefore at increased risk for HPV infection and potential progression to cervical cancer.

Screening

Early diagnosis and treatment of precancerous cervical lesions, known as secondary prevention of cervical cancer, is associated with better outcomes, including reduced risk for developing invasive cancer and increased likelihood of cure (Brennan et al., 2024; WHO, 2020). The BC Cancer Agency (BCCA) recommends CCS for all people with a cervix between the ages of 25 and 69 years (PHSA, 2025b). In BC, two methods of CCS are currently available: cytology-based Pap test and HPV testing (see Table 1).

Table 1

Cervical Cancer Screening Methods: Cytology-based Pap Test vs. HPV Test

	Cytology-based Pap test	HPV test
Specimen collection	Cervical cells collected using brush or spatula	Vaginal cells collected using swab
Collected by	Clinician only	Patient or clinician (based on patient preference)
Pelvic exam required?	Yes	No
Positive result indicates	Precancerous changes to cells visualized under microscope	Presence of HPV viral DNA
Testing frequency	Once every 3 years	Once every 5 years

(PHSA, 2025c; PHSA, 2025d)

Cytology-based screening. Cervical cancer screening using the Papanicoulau smear (commonly known as a Pap test) was introduced in 1928 (Rajaram & Gupta, 2021; Vilos, 1998). The Pap test involves the collection of cervical epithelial cells during a pelvic exam in which the clinician uses a speculum to visualize the cervix and obtains a scraping of cells (Shaw, 2000). These cells are then placed on a slide and examined under a microscope to look for visible lesions, including precancerous changes or dysplasia that may not be visible without magnification, a process called cytology (Rajaram & Gupta, 2021). A positive Pap test result

indicates the presence of abnormal cervical cells, which may or may not be precancerous and requires follow-up including monitoring, further testing, or treatment (National Cancer Institute, 2024).

The patient experience of Pap testing has been extensively described in the literature. Pain, distress, embarrassment, fear, and humiliation were terms used by patients in a recent Canadian study of barriers to CCS (King & Busolo, 2022). Similarly, in their study of CCS in rural Ontario, Racey and Gesink (2016) described "procedural barriers" (p. 138) that patients can encounter, such as emotional discomfort, physical discomfort, embarrassment, and lack of privacy, and that can lead to avoidance of CCS. Not surprisingly, many patients decline CCS altogether due to these and other concerns. Exploration of the patient experience of CCS, and the resulting impact on their willingness to undergo screening, has led to an understanding that new, innovative alternatives to Pap tests are needed.

Additional barriers to Pap-based CCS have also been described in the literature, including inconvenience and logistical considerations such as time constraints, transportation, related costs (Brennan et al., 2024; Fontenot et al., 2024; Le Goff et al., 2023). Lower CCS rates by racial and ethnic minorities have also been observed, and tend to be attributed to health literacy challenges, language barriers, cultural beliefs, and structural barriers to health care access (Rodriguez et al., 2023; Xiong et al., 2022). Increasing CCS rates in these 'under-screened' populations will also require innovative solutions to address and overcome these and other barriers.

HPV-based screening. Unlike cytology, in which a sample of cervical cells is directly examined under a microscope to identify visible precancerous changes or dysplasia (Rajaram & Gupta, 2021), HPV testing is used to detect the presence or absence of the HPV viral DNA (Brennan et al., 2024). Multiple laboratory tests are available to analyze vaginal swabs for the

presence of viral DNA, including polymerase chain reaction (PCR) and nucleic acid-based amplification (NAAT), both of which are widely used for other screening and diagnostic applications (Rajaram & Gupta, 2021). A positive HPV test result indicates the presence of a high-risk HPV genotype, which, if left untreated, may eventually develop into cervical or other cancers (National Cancer Institute, 2024; WHO, 2024). Patients who test positive for high-risk HPV require follow-up, such as monitoring, further testing, or treatment, the course of which is determined by factors including previous CCS results, history of precancerous cervical lesions, and personal health factors including age and family history (National Cancer Institute, 2024).

Local Context. According to a recent environmental scan of CCS in Canada, nine out of ten provinces offer organized CCS programs (CPAC, 2024). At the time of publication of the environmental scan, Quebec, Yukon, and Northwest Territories were in the process of developing structured CCS programs with subsequent implementation planned, while Nunavut had no organized CCS screening program in development (CPAC, 2024).

BC has offered CCS since 1955, which makes it the longest standing program in Canada (CPAC, 2024). In January 2024, the BCCA introduced "HPV self-screening" (Ministry of Health, 2024, para. 1) as a province-wide alternative to clinician-collected, cytology-based CCS. Both cytology and HPV-based testing are currently available in BC; patients may have the option to undergo Pap testing or a self- or clinician-collected HPV test depending on their health history (Ministry of Health, 2024).

Specimen Self-Collection

The pelvic exam has been identified as a significant barrier to CCS (Hawkes et al., 2020; King & Busolo, 2022). Unlike cytology-based Pap tests, HPV testing does not require the collection of cervical cells, which means that the specimen does not need to be collected by a

clinician and the patient does not require a full pelvic exam. Thus, one important advantage of the use of HPV testing for CCS is that the vaginal swab used for HPV testing can be collected by a clinician or by patients themselves.

Self-collection of an HPV specimen for CCS is a validated tool, and its use is already established in other jurisdictions, including Australia, New Zealand, Denmark, Scotland, and the Netherlands (Bohn et al., 2019; Polman et al., 2019). A randomized non-inferiority trial compared the accuracy of self- and clinician-collection for HPV testing and found self-collected samples to be not inferior to the standard of care (i.e., clinician-collected samples) for CCS (Polman et al., 2019). Variability in the implementation of self-collection protocols persists despite the WHO's endorsement of HPV self-collection and evidence that confirms HPV self-collection provides comparable accuracy to clinician-collected samples (Gentile et al., 2024; Le Goff et al., 2023; Polman et al., 2019).

In some jurisdictions, only patients who are overdue for CCS or those who decline clinician-collected screening are offered the possibility of self-collecting their sample (Bohn et al., 2019). In other settings, self-collection is the primary method for CCS (Ministry of Health, 2024). Since 2024, self-collection for CCS has been available in BC for:

> Anyone aged 25 to 69 who has a cervix, is due for screening, has ever had sexual contact (intercourse or digital or oral sexual contact involving the genital area with a person of any gender), is asymptomatic, and is registered with the Medical Services Plan or has their health care covered by a federal program. (PHSA, 2024a, para. 4)

However, the BCCA recommends against self-collection for those who are currently pregnant or experiencing symptoms such as post-coital bleeding or persistent abnormal bleeding (PHSA, 2024a).

Advantages of Self-Collection

Previous studies suggest that self-collection is a potential solution to multiple barriers to CCS participation discussed above. Many patients have become familiar with other forms of specimen self-collection, including COVID-19 testing, home pregnancy tests, and vaginal swabs for bacterial vaginitis and sexually transmitted infections (Fontenot et al., 2024; Rodriguez et al., 2023). Zelli et al. (2022) argue that self-collection increases participation in CCS among individuals who previously declined clinician-collected CCS due to embarrassment, fear, and discomfort, as self-collection allows patients to have more control over their experience.

Another important advantage of self-collection is that it can be completed outside of a clinical setting. Winer et al. (2023) found that targeted mailing of self-collection kits to under screened individuals increased their likelihood of completing CCS. Similarly, Brennan et al. (2024) demonstrated that mail-based self-collection programs reduce geographic barriers to CCS and may help to address CCS and cervical cancer prevalence disparities in rural and remote communities.

In BC, the introduction of HPV self-collection has also changed the recommended frequency for CCS; Pap tests are currently recommended to occur once every three years, whereas the recommendation for HPV-based screening, and therefore self-collection, is once every five years (PHSA, 2025b). As explained by Delpero and Selk (2022), HPV testing has higher sensitivity than cytology-based CCS and "decisions to lengthen the cervical screening interval … are based on the strong negative predictive value of HPV testing" (p. 614). Given pervasive and persistent shortages of PCPs, such as family physicians (FPs) and nurse practitioners (NPs), across Canada (Canadian Institute for Health Information, 2024), the

potential for self-collection to reduce the burden on primary care services (Xiong et al., 2022) should not be overlooked.

Provider Perspectives

Self-collection has the potential to improve CCS patient experiences and outcomes; it is important that barriers to its implementation are identified and addressed. Understanding health care providers' perspectives on HPV self-collection for CCS is vital to ensure that best practice is aligned with the growing evidence in support of self-collection.

Health care providers have the potential to significantly impact the health practices of the patients they serve. Because self-collection remains a relatively new approach to CCS, patients may not be aware of this option, or they may have questions about it. Primary care providers, including NPs, should understand the available options for CCS so they can support patients in making informed decisions that meet their health care needs. Le et al. (2022) assert that provider bias has a direct impact on patient health care decision-making, including whether and how patients engage in CCS. Similarly, Mao et al. (2017) found that patients were more likely to engage in CCS practices that are "endorsed by clinicians" (p. 609). In many contexts, CCS is facilitated through PCPs (Creagh et al., 2021), which means that a patient's access to CCS is fully dependent upon the beliefs, attitudes, and practices of their health care provider (Brennan et al., 2024).

Regardless of their level of involvement in arranging CCS, exploring PCP perspectives on self-collection for CCS may identify facilitators and barriers to its uptake, which can then inform approaches to ensuring equitable access to CCS.

Chapter Three: Methods

This chapter presents the methods that were used to conduct this IR, which aimed to answer the question, "*What are the perspectives of primary care providers toward specimen self-collection for cervical cancer screening?*". The general approach to undertaking an IR, as well as key methodological decision points that informed data collection, analysis, and conclusions, are presented herein.

IR Framework

The IR framework encompasses five components: problem identification, literature search, data evaluation, data analysis, and presentation (Whittemore & Knafl, 2005). Whittemore and Knafl (2005) recommend that each of these components be well-defined, ensuring that key decision points are clearly articulated in order to enhance rigour and overall strength of the resulting conclusions.

Problem Identification

The "population/situation" (P/S) strategy (Health Evidence, 2021, p. 4) was used to develop a searchable research question. The population identified was PCPs and the situation was patient use of self-collection for CCS.

The use of specimen self-collection in health care is becoming more widespread. For example, the extensive use of point-of-care COVID-19 testing has resulted in "growing consumer demand" (Rodriguez et al., 2023, p. 1) for home-based screening and diagnostic tests in other areas of healthcare. Patient preference for self-collection for the purpose of CCS has been well-documented in the literature (e.g., Barger et al., 2023; Fullerton et al., 2024). However, the acceptability of self-collection for CCS amongst PCPs has not been widely studied. The target population for this IR had initially been restricted to nurse practitioners

(NPs). However, a preliminary literature scan completed in November 2024 found no studies on this topic that had been conducted solely with NPs. As a result, the research question was revised to include other PCPs, such as FPs, midwives, and physician assistants (PAs). It is worth noting that different primary care roles exist in different jurisdictions; for example, the NP role has not been integrated in France in the way that it currently exists in Canada and the United States (US; Devictor et al., 2023). While an international comparison of PCP roles is beyond the scope of this IR, it is important to recognize that the overall dataset reflects a range of PCP roles, including but not limited to NPs.

Literature Search

A combination of comprehensive search and purposive sampling strategies were used to identify and retrieve relevant literature (Whittemore & Knafl, 2005). Preliminary search terms reflected the P/S criteria described previously. Based on early unstructured searches, three searchable concepts were identified that would ensure that subsequent searches combined the same P/S criteria, regardless of the specific search vocabulary used by different databases (see Appendix A). Two online EBSCO databases, CINAHL and MEDLINE, were accessed through the library of the University of Northern BC. CINAHL, which stands for "Cumulative Index to Nursing and Allied Health Literature" (Geoffrey R. Weller Library, 2025) was selected because it includes nursing, medicine, and allied health publications and practice resources, all of which are relevant to the population, intervention, and outcome of interest specified in the research question. Based on familiarity with the EBSCO platform developed through CINAHL searching, the MEDLINE database, also hosted by EBSCO, was selected as the second database. MEDLINE is also relevant to the research question because it indexes publications on nursing, medicine, and the health care system (Geoffrey R. Weller Library, 2025).

Structured database searching took place in December 2024. Search terms were then further refined based on heading suggestions from each database (see Appendices B and C). By reviewing the reference lists of relevant articles, ‘snowball’ results were also collected for subsequent screening; one additional article was identified this way. Finally, Google Scholar was used to capture relevant articles that were not indexed in the databases or had not been retrieved using the selected search terms (see Appendices B and C). Eleven potentially relevant articles were identified via Google Scholar, of which four were duplicates that had already been identified through database searching. Twenty-five records were identified, and four duplicates were removed prior to additional screening.

The twenty-one unique articles were downloaded and bibliographic information was entered into an excel spreadsheet. Abstracts were reviewed to ensure relevance to the P/S specified in the research question. At this point, two articles were removed because they were about colorectal cancer screening, not CCS (Gupta et al., 2023; Nitkowski et al., 2024), and one article did not include provider perspectives as an outcome variable (Huntington et al., 2023).

Eighteen articles underwent full-text reviews and additional spreadsheet columns were created to document decisions related to inclusion and exclusion criteria, including the types of health care providers, practice settings, and outcome measures for study. Two studies were excluded because they assessed provider knowledge of HPV, not provider perspectives on its application for CCS (Garcia et al., 2016; Ignamells et al., 2024). An additional two studies were excluded because they included results from non-clinicians that could not be differentiated or isolated from provider perspectives (Creagh et al., 2024; Danan et al., 2024). Finally, one article was excluded because it was an editorial, not primary research (Senkomago & Saraiya, 2017).

As shown in the PRISMA flow diagram (Page et al., 2021; Appendix D), thirteen articles were included in the IR. Of these, eight were qualitative studies, three were mixed methods studies, and two were quantitative studies.

Note about search timeline. In December 2024, when the initial comprehensive online database searches were run using the search terms and combined concepts described (see Appendices A, B, and C), CINAHL returned nine articles and MEDLINE returned four articles. The dataset that was subsequently analyzed reflects these search results from December 2024. Upon repeating the original database searches in February 2025, substantially more articles were retrieved; CINAHL retrieved 75 articles and MEDLINE retrieved 50 articles. It is possible that these additional 112 results reflected a combination of new publications and/or changes to database indexing or subject headings. These additional results were not considered for inclusion in the dataset because of timing and the feasibility restrictions of completing this IR within the context of a graduate course.

Data Evaluation

Three critical appraisal tools were used to evaluate the quality of the thirteen articles that met inclusion criteria. The appropriate tool was selected based on the study design. Eight studies were appraised using the Critical Appraisal Skills Programme (CASP) "CASP checklist for qualitative research," (CASP, 2024b), two studies were appraised using the "CASP checklist for descriptive/cross-sectional studies" (CASP, 2024a), and three studies were appraised using the "mixed methods appraisal tool (MMAT) version 2018" (Hong et al., 2018). A data appraisal summary for each study can be found in Appendix E. Each study was subjectively determined to be high, medium, or low quality by the IR author based on results from application of each appraisal tool, as suggested by CASP (2024c).

Data Analysis

Data analysis began with descriptive data extraction. Data categories were developed so that study characteristics could be compared directly. For example, provider type(s), practice setting(s), and implementation stage were assessed for each study. A template was developed to facilitate data extraction and to ensure that, whenever possible, the same data points were extracted from each study. The quality designation that was determined based on critical appraisal in the data evaluation step was also included in the data extraction template.

Study findings were grouped into categories of overall impressions, benefits and risks of self-collection, facilitators and barriers to self-collection implementation, and recommendations. Important contextual factors were also summarized to ensure that findings could be situated appropriately. For example, because of the international scope of this IR, it was important to differentiate between Canadian and US studies because health insurance coverage can be an important determinant of patient engagement in CCS and Canada has a publicly-funded healthcare system (Fuzzell et al., 2021). Finally, preliminary comments on connections between each study and the overarching IR research question were included in the data extraction template. These comments were used as starting points for the Discussion chapter that follows. A completed data extraction summary for each study can be found in Appendix F.

Presentation

Overall findings were grouped into themes that represented areas of consideration across studies. Themes evolved based on similarities and differences across the studies and they became the basis for the Findings chapter that follows. A visual model was created to organize the data (see Figure 1). Interpretation and implications of these findings, within the BC primary care context is presented in the Discussion chapter.

Author Positionality

As a registered nurse (RN) and future NP, who practices in BC and who identifies as a cis-gendered woman, I am interested in this topic for multiple reasons. When I first learned that HPV self-collection would replace the need for Pap testing for CCS, I was both relieved and skeptical; the idea that patients could engage in CCS without the need for pelvic exams seemed too good to be true. Pap testing was part of the care that I offered as an RN who holds certified practice standing in reproductive health (British Columbia College of Nurses and Midwives, n.d.), and in this role I witnessed firsthand both physical and emotional discomfort that pelvic exams caused in patients. I also witnessed the importance that patients placed on CCS, as evidenced by their willingness to undergo Pap testing despite anxieties and hesitations.

As a future NP, I see it as my responsibility to understand current evidence-based best practice so that I may support patients in making informed decisions about their health care. When the BCCA introduced "HPV self-screening" (Ministry of Health, 2024, para. 1) over one year ago, I chose to explore the evidence behind this novel approach to CCS so that I would be prepared to answer patient questions and feel confident in recommending this modality. Since then, I have also taken it upon myself to inform colleagues and share resources from BCCA about its availability and validity. Thus, this IR was undertaken, in part, as a means to better understand barriers to and facilitators of successful implementation of self-collection, a practice that I believe will result in meaningful benefits for people who undergo CCS.

Chapter Four: Findings

According to Whittemore and Knafl (2005), the IR data analysis process involves data extraction, reduction, display, and comparison. A description of the dataset, including study designs, contexts, and outcomes follows. A visual summary of the dataset is included, as well as key themes that emerged from the literature.

Description of Dataset

Of the thirteen articles included in this IR, eight were qualitative studies, three were mixed methods studies, and two were cross-sectional quantitative studies. The majority of studies were conducted in the US (n=8) while two Australian studies, two French studies, and one Canadian study were also included.

The dataset reflected a wide range of provider types; all thirteen articles included PCP perspectives, and eleven studies included NP perspectives specifically (Table 2). As shown in Table 2, most studies included multiple provider types.

Table 2

Health Care Providers Represented in Dataset

Provider type	Number of studies
Family Physician	13
Nurse Practitioner	11
Obstetrician/Gynecologist	8
Midwife	6
Physician Assistant	3
Nurse	2
Other:	
• Internist	4
• Oncologist	1

The dataset also reflected a wide range of practice settings (Table 3). Multiple studies included participants who practiced in more than one type of clinical setting. Three studies did

not specify the practice settings of their research participants. Of the ten studies that did specify, the most common practice setting was a community health center.

Table 3

Practice Settings Represented in Dataset

Practice setting	Number of studies
Community health center	10
General practice	7
Private practice	7
Hospital	6
Academic health center	5
Aboriginal health organization	3
Gender-diverse clinic	2
Correctional center	1

Most studies (n=9) did not specify details about the patient population for whom the research participants provided care. Of those studies that did specify, three collected perspectives from providers who serve patients in geographic regions with notable socioeconomic disadvantage, geographic isolation and/or poor access to health care, and one study involved providers who serve patients living with HIV.

The dataset reflects a spectrum of approaches to CCS, and each study explored provider perspectives on different testing modalities. Figure 1 presents a visual summary of key characteristics of CCS interventions along with the identification of those studies that commented on each different approach. It is worth noting that only Creagh et al. (2021), Le Goff et al. (2023), and Zammit et al. (2023) explored provider perspectives on HPV self-collection post-implementation. Conversely, the other eleven studies sought to determine providers' perspectives on self-collection for CCS prior to it becoming available in their jurisdictions.

As described in the Methods chapter, all articles included in this IR explored provider perspectives on the use of HPV self-collection for CCS. However, the primary outcome

described by authors varied across the dataset (Table 4); the most common outcome was provider 'acceptability' (n=4).

Figure 1

Approaches to Cervical Cancer Screening Described in Dataset

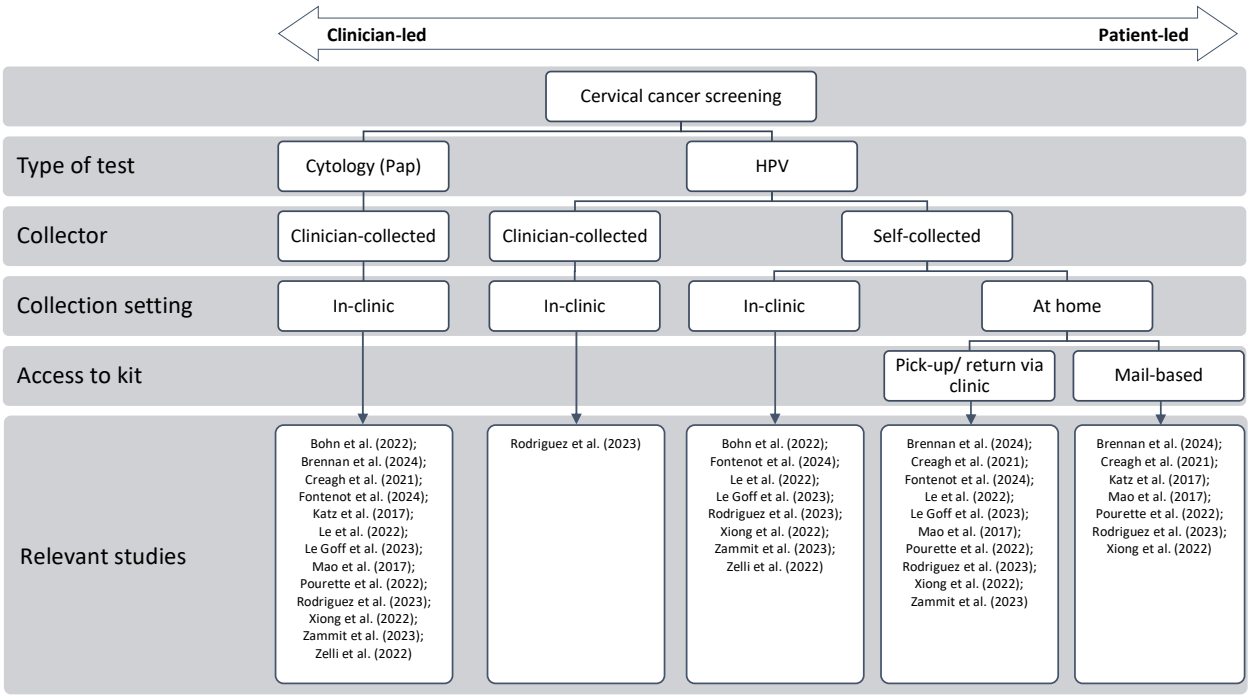


Table 4

Provider Outcomes Measured and Corresponding Studies

Provider outcome measured	Study
Acceptability (n=4)	Creagh et al. (2021); Katz et al. (2017); Le et al. (2022); Zelli et al. (2022)
Attitudes (n=3)	Bohn et al. (2022); Fontenot et al. (2024); Mao et al. (2017)
Willingness to adopt (n=2)	Brennan et al. (2024); Rodriguez et al. (2023)
Opinions (n=2)	Le Goff et al. (2023); Pourette et al. (2022)
Views (n=1)	Xiong et al. (2022)
Experiences (n=1)	Zammit et al. (2023)

Provider Perspectives

The thirteen studies selected for inclusion in this IR presented diverse provider perspectives on the use of self-collection for CCS. Perceived advantages and disadvantages of the self-collection option, as well as potential impacts of self-collection on providers' practices and the wider healthcare system, are discussed in this section. Finally, providers' reflections regarding their role in CCS are presented.

Advantages of Self-Collection

Providers identified numerous benefits of self-collection for CCS. The potential for self-collection to increase overall CCS rates was seen as beneficial by providers (Rodriguez, 2023; Zelli et al., 2022). In fact, Zelli et al. (2022) found that the potential to increase CCS rates was the most important benefit of self-collection identified by providers. Although some researchers differentiated between efforts to reengage patients who were overdue for screening and the ability to engage never-screened patients, self-collection was viewed by providers as a valuable strategy for achieving both goals (Bohn et al., 2022; Creagh et al., 2021; Pourette et al., 2022, Zammit et al., 2023).

From a provider perspective, self-collection is considered to be more convenient for patients than clinician-collected methods for CCS (Le et al., 2022; Rodriguez et al., 2023; Xiong et al., 2022). By reducing transportation challenges (Le Goff et al., 2023) and travel-related costs incurred by patients as part of going to and from their provider's clinic (Mao et al., 2017), providers identified the potential for self-collection to reduce geographic barriers to care (Bohn et al., 2022; Katz et al., 2017; Pourette et al., 2022). Zelli et al. (2022) also found that providers associated self-collection with efficiency and time savings for patients, and Le Goff et al. (2023)

highlighted the benefit described by providers of reduced wait times for patients who wish to access CCS.

Self-collection was described by providers as both patient-centred (Fontenot et al., 2024) and trauma-informed (Xiong et al., 2022). Importantly, self-collection offers patient choice in how they engage in CCS (Bohn et al., 2022; Zammit et al., 2023) and increases the level of control that patients have over their CCS experience (Xiong et al., 2022). Providers identified the potential for patient empowerment (Le Goff et al., 2022; Zammit et al., 2023) and "proaction in their own health" (Xiong et al., 2022, p. 6) as consequences of participation in self-collection.

Providers asserted that self-collection would improve the patient experience of CCS by offering increased privacy (Le et al., 2022; Le Goff et al., 2023; Xiong et al., 2022), and decreased pain and discomfort (Xiong et al., 2022; Zelli et al., 2022). Providers predicted that patients would experience less fear (Le Goff et al., 2022) and less embarrassment (Zelli et al., 2022) because self-collection is less invasive and less intrusive than clinician-collected CCS (Brennan et al., 2024; Fontenot et al., 2024; Le Goff et al., 2023; Xiong et al., 2022). Two studies highlighted the perception held by providers that patients prefer female providers for pelvic exams, suggesting that self-collection would be preferred by patients who have male primary care providers and by the male providers themselves (Brennan et al., 2024; Le Goff et al., 2023).

Three studies reported the strategic advantages that providers associated with self-collection; when patients contacted their PCPs to seek self-collection for CCS, this provided an opportunity for providers to address other health concerns or screening needs (Katz et al., 2017). Similarly, when patients sought other forms of healthcare from their provider, the provider could take the opportunity to offer self-collection to those due for CCS because specimen collection

could be completed without the need for a separate appointment (Brennan et al., 2024; Xiong et al., 2022).

Several studies highlighted the importance that providers placed on self-collection for specific patient populations. Fontenot et al. (2024) reported that some providers would support self-collection only in special patient populations for whom traditional Pap tests had proven challenging. For example, providers supported self-collection for patients with histories of sexual or other trauma (Fontenot et al., 2024; Le et al., 2022), gender diverse populations (Fontenot et al., 2024; Le et al., 2022), and those with anatomical variations such as vulvar structural abnormalities or imperforate hymens (Fontenot et al., 2024; Xiong et al., 2022). Providers also perceived that younger patients may prefer self-collection and saw it as strategy to promote CCS in the younger population (Bohn et al., 2022; Xiong et al., 2022).

Interestingly, providers had divergent views with respect to self-collection for patients with low literacy or language barriers. Some providers believed self-collection would increase engagement in this population (Xiong et al., 2022) and that self-collection could be used as a tool to increase health literacy regarding the connection between HPV and cervical cancer (Le et al., 2022). Conversely, other providers saw low literacy as a barrier to patients engaging in self-collection and did not think that pursuing self-collection would be worthwhile in this population since those patients would not be motivated to participate in CCS (Katz et al., 2017). For example, in one study, providers thought that low educational attainment among their patients would result in a patient preference for clinician-collected CCS, due to discomfort with their own anatomy (Pourette et al., 2022).

Similarly, there were disparate provider views on the use of self-collection among patients with mobility or dexterity challenges. Some providers saw self-collection as reducing

barriers for patients with physical disabilities or mobility challenges (Fontenot et al., 2024), while other providers thought that requiring patients to collect their own samples would increase health disparities experienced by those for whom self-collection would be physically challenging (Xiong et al., 2022).

Disadvantages of Self-Collection

Providers also identified a number of related concerns and risks associated with self-collection. One of the most common provider concerns associated with self-collection was the potential for missed opportunities to provide care. Providers were concerned that they would not be able to conduct other components of a physical exam that would typically be included at the same time as a Pap test (Bohn et al., 2022; Brennan et al., 2024) and that they would not have the opportunity to visualize pathology (Brennan et al., 2024; Fontenot et al., 2022; Rodriguez et al., 2023; Zelli et al., 2022). Additionally, providers noted they would have fewer opportunities to review other health concerns with their patients or recommend other types of health screening (Brennan et al., 2024; Mao et al., 2017; Rodriguez et al., 2023; Zelli et al., 2022).

Providers identified potential risks to patients associated with self-collection. According to Le Goff et al. (2023), providers believed that self-collection would unduly increase the burden on the patient, especially for those models that would require patients to complete self-collection at home and return samples by mail. Providers also raised concerns related to patients being unable to collect an adequate sample (Fontenot et al., 2024; Mao et al., 2017), which may require them to undergo repeat testing (Xiong et al., 2022). Katz et al. (2017) also reported provider-identified risks for physical harm to patients due to the potential for kits breaking and the patient unknowingly retaining a foreign body in their vagina.

Providers worried that the availability of self-collection for CCS would change the health care behaviours and expectations of patients. Some providers anticipated that self-collection would make patients more reluctant to receive other care in-person (Mao et al., 2017) and that patients might feel that other important physical exams or screening were unnecessary (Le Goff et al., 2023). Some providers believed that self-collection would also make patients less likely to complete necessary follow-up, such as further testing and treatment related to cervical cancer (Fontenot et al., 2024; Mao et al., 2017).

Reluctance from Providers

Providers reported that there is insufficient awareness amongst their colleagues of the availability of self-collection for CCS (Creagh et al., 2021; Zammit et al., 2023; Zelli et al., 2022). While providers were familiar with other applications of patient self-collection, such as colorectal cancer screening (Le et al., 2022), Group B Strep in pregnancy (Fontenot et al., 2024), bacterial vaginitis (Rodriguez et al., 2023), and COVID-19 testing (Rodriguez et al., 2023), the availability of self-collection for CCS remained largely unknown and providers were therefore skeptical of its use.

Despite published evidence to the contrary, providers believed that self-collection methods are less reliable than clinician-collected CCS (Le Goff et al., 2023). Providers expected that results from self-collected tests would be less accurate due to user error (Katz et al., 2017; Le et al., 2022; Mao et al., 2017). Additionally, providers believed that patients would not perceive self-collection as being ‘as valid’ as clinician-collected testing (Xiong et al., 2022), and that patients simply would not wish to engage with a self-collection option (Fontenot et al., 2024). Providers also questioned specific aspects of the test’s validity, including sensitivity, specificity, and accuracy of the result (Bohn et al., 2022; Creagh et al., 2021; Fontenot et al.,

2024; Xiong et al., 2022). According to Bohn et al. (2022), providers believed that more evidence demonstrating the validity and accuracy of self-collection would improve uptake. Two articles discussed the erroneous comments made by providers about the use of self-collection for CCS; Fontenot et al. (2024) and Le Goff et al. (2023) highlighted providers' concerns about the patient successfully reaching their own cervix. However, as the authors pointed out, HPV self-collection involves a vaginal swab, not a cervical specimen for cytology, suggesting that the concerns of those providers were likely based on incorrect assumptions or misinformation (Fontenot et al., 2024; Le Goff et al., 2023); this finding reinforced concerns related to lack of provider knowledge about self-collection (Creagh et al., 2021; Zammit et al., 2023; Zelli et al., 2022).

Providers identified ambiguity and confusion as barriers to their adoption of self-collection for CCS (Creagh et al., 2021; Le et al., 2022). According to Xiong et al. (2022), providers did not demonstrate a clear understanding of the intention or scope of self-collection, such as whether it could be used for all persons with a cervix or whether it would only be appropriate for those who had declined a Pap test. Similarly, Bohn et al. (2022) reported that providers did not feel confident about their interpretation of patient eligibility criteria for self-collection, and Creagh et al. (2021) found that, according to providers, the eligibility criteria were too inflexible and too narrow. Overall, providers expressed confusion with existing guidance on the use of self-collection for CCS (Creagh et al., 2021; Le et al., 2022). One provider stated that, while they were able to recognize the benefits of self-collection, they would not use it yet and would instead "wait for further guidance" (Fontenot et al., 2024, p. 513). Providers noted that national guidelines (Bohn et al., 2022) and recommendations from

professional organizations (Fontenot et al., 2024) would be needed to support their acceptance of self-collection as a reliable and safe tool for CCS.

Workflow and Logistical Considerations

Many providers described concerns related to the ways in which introduction of self-collection for CCS could change the workflow of their practices. Some providers perceived workflow benefits associated with self-collection, such as reducing stress on clinicians (Xiong et al., 2022) and improved efficiency and time savings (Zelli et al., 2022). Conversely, Creagh et al. (2021) and Zammit et al. (2023) reported concerns expressed by providers that self-collection for CCS would increase workload for clinic staff. Providers in the Le at el. (2022) study expressed concern that the coordination of self-collection kit pick-up, drop-off, and processing (for patients who preferred to collect their sample at home), and scheduling clinic space to allow patients to self-collect their sample in the clinic, all had the potential to cause significant disruption to their existing practices. The additional burden on clinic support staff who would likely become responsible for determining patient eligibility for self-collection was identified by providers in two articles (Creagh et al., 2021; Zammit et al., 2023). Providers also expressed concerns related to patients not returning their self-collected specimens and suggested that competing priorities within their clinical practices would make it unreasonable for staff to follow-up with patients individually to remind them to return their specimens (Fontenot et al., 2024; Rodriguez et al., 2023).

Providers identified challenges related to the costs associated with self-collection. While some providers suggested that self-collection would be more cost-effective than clinician-collected CCS (Mao et al., 2017), other providers worried that self-collection would increase system-level costs. Some providers anticipated that patients would request self-collection kits,

but would not return the sample, thereby increasing costs due to waste. Other providers suggested that self-collection would result in increased rates of user error and the need for repeat collection, which would increase the cost per completed screen (Xiong et al., 2022).

Unlike clinician-collected approaches to CCS, it was unclear to some providers if and how they would be compensated for facilitating self-collection and who would be responsible for the costs of the self-collection kits (Xiong et al., 2022). In providing context for their study, Xiong et al. (2022) pointed out that, at the time their article was published, self-collection was not covered by the US National Breast and Cervical Cancer Early Detection Programs or health insurance plans. Providers identified this as a barrier to CCS because patients would need to pay out-of-pocket for this service (Xiong et al., 2022). According to Bohn et al. (2022) and Fontenot et al. (2024), providers described existing compensation models for self-collection as inadequate; as one provider explained, "our practice only gets paid when we see patients face to face" (Bohn et al., 2022, p. 1521), and suggesting that facilitating self-collection would not become a priority until "it's part of the basic way that primary care clinicians are paid" (p. 1521).

Provider Influence

Several studies highlighted the impact that PCPs have on patient health behaviours and explored how providers' beliefs about self-collection may influence patient participation in CCS. For example, a provider's endorsement of self-collection had a positive impact on an individual patient's decision to participate in CCS (Le et al., 2022). Similarly, a provider's previous experience with self-collection has the potential to shape their attitudes towards other self-collection applications, which could in turn affect whether or not they offered self-collection to other patients (Brennan et al., 2024). Specifically, Brennen et al. (2024) found that providers who had previous positive experiences with self-collection for COVID-19 or colorectal cancer

screening, for example, were more likely to support self-collection for CCS. Conversely, providers who had had previous negative experiences “had more reservations” (Brennan et al., 2024, p. 9) about the use of self-collection for CCS.

As described by Zammit et al. (2023), the former Australian “practitioner-supported model” (p. 2) required that a PCP facilitate access to CCS. Under this model, the provider was responsible for determining eligibility for self-collection based on guidelines published by the National Cervical Screening Program (NCSP; Zammit et al., 2023). Despite revisions to the NCSP guidelines in 2022 that increased eligibility for self-collection, Zammit et al. (2023) highlighted the important role that providers assume in settings where self-collection is only available to specific patient subpopulations. Similarly, in their study of the former Australian NCSP, Creagh et al. (2021) described the advocacy role that PCPs took on in promoting the use of self-collection and calling for expanded access to self-collection as an option for CCS.

PCPs have the opportunity to shape how health care is delivered through advocacy and health system leadership. Similarly, as trusted health experts, PCPs can significantly influence how individual patients receive care and what care they access. Understanding the provider perspective on self-collection for CCS has the potential to inform practice, policy, and future research, as will be discussed in the next chapter.

Chapter Five: Discussion

Building on the themes identified in Chapter Four, this chapter relates the findings back to important contextual elements in order to synthesize implications for practice, policy, and further research. Each section concludes with a commentary on local implications, in which findings from the literature are briefly discussed relative to BC's self-collection-based model for CCS. Finally, the limitations of this IR are discussed.

The results of this IR indicate that, in many jurisdictions, the use of self-collection for CCS remains a controversial aspect of care. Overall, there is interest from providers in learning how self-collection may benefit providers and patients, with the clear goal of increasing CCS rates and early diagnosis and treatment of precancerous cervical lesions. However, many providers remain skeptical about the role of self-collection. Several studies described providers' concerns about the accuracy of self-collection as compared to clinician-collected samples (Fontenot et al., 2024; Katz et al., 2017; Le et al., 2022; Rodriguez et al., 2023; Xiong et al., 2022). In addition, some providers were reluctant to support self-collection because it would eliminate the opportunity to visualize pathology during a pelvic exam (Bohn et al., 2022; Brennan et al., 2024; Fontenot et al., 2024; Zelli et al., 2022). Providers worried that self-collection would lead to fewer direct patient-provider interactions and could lead to less in-person care overall (Le Goff et al., 2023). Despite widespread systemic shifts towards health care delivery models that are integrating virtual and telehealth options, as well as other applications of specimen self-collection, there continues to be a preference for in-person patient visits expressed by many PCPs and there are concerns about the risk associated with missed opportunities for physical assessment (Mao et al., 2017; Rodriguez et al., 2023).

When the literature search for this IR was conducted, only three eligible studies reported on provider perspectives from jurisdictions actively using self-collection for CCS (Creagh et al., 2021; Le Goff et al., 2023; Zammit et al., 2023). The other ten studies included in this IR reported providers' perspectives on the potential use of HPV testing, and thus self-collection for CCS, if and when it were to become available in their jurisdiction. Many of these studies specified that a key barrier to self-collection was that this modality had not yet received regulatory approval in their practice locations (Bohn et al., 2022; Fontenot et al., 2024; Mao et al., 2017; Xiong et al., 2022). Despite this significant obstacle, study participants shared valuable insights regarding the perceived benefits and risks of self-collection and highlighted important clinical practice considerations. By identifying and addressing provider needs proactively, health system leaders are likely to be more successful in implementing or expanding self-collection programs.

Guidelines and Resources

Providers who work in areas with established self-collection services articulated a need for additional practice resources to support them in offering this new approach to CCS. Specific provider needs included clarification of the provider's responsibility when facilitating self-collection. For example, providers were unsure whether specimen self-collection had to be completed in the clinic or whether patients could take their kit home and return it later (Creagh et al., 2021). This perspective was also shared by pre-implementation providers; updated national, provincial, or state guidelines were seen as a necessity for provider buy-in (Bohn et al., 2022), and targeted provider education to support the transition from Pap testing to HPV self-collection was identified as a priority (Le et al., 2022; Mao et al., 2017). In addition to clear clinical guidance for providers, they also anticipated the need for patient-specific materials that would

provide simple illustrated instructions for successful sample collection (Katz et al., 2017; Le Goff et al., 2023; Xiong et al., 2022).

In BC, the BCCA coordinates "the full spectrum of cancer care from prevention, screening, diagnosis and treatment, to research and education, to supportive and palliative care" (PHSA, 2025a, para. 1). With respect to CCS, the BCCA establishes and updates provincial clinical guidelines (Gentile et al., 2024). In support of the January 2024 launch of BC's "HPV self-screening" program (Ministry of Health, 2024, para. 1), the BCCA developed print resources including posters, pamphlets, and written instructions for both patient and provider audiences (PHSA, 2025b). These resources are gender-inclusive, published in multiple languages, and are available free, either as virtual resources that can be downloaded from the BCCA website or as print resources that can be ordered by mail. Additionally, a series of videos was created to provide further details about CCS, including who should be screened, how to request and return a self-collection kit, how to collect a sample, and how to follow-up for results (ScreeningBC, 2024).

In order to support primary care practice change across BC, the BCCA has also published care pathways for a number of different CCS scenarios, including patients who are immunocompromised and those who have had cervical cancer before (PHSA, 2025c). These pathways consist of step-by-step algorithms that inform clinical decision making based on individual patient needs (PHSA, 2024b). Within their online resource library, the BCCA also lists relevant scientific publications that provide informed updates about the provincial CCS program so that evidence that supports practice change is readily available to providers (PHSA, 2025d).

As a result of the coordinated provincial approach to cancer screening and the practice resources developed by BCCA, many of the gaps identified by providers in the literature are unlikely to be perceived as challenges in the BC context. However, provider perspectives on the use of self-collection in BC as well as early provider experiences have not yet been published. It remains possible that, despite the BCCA's best efforts, implementation of the provincial self-collection program for CCS may still not meet providers' needs or may cause unforeseen challenges in PCP practices. Recently, Gentile et al. (2024) reported that, between February 1 and June 30, 2024, 1100 practices across BC ordered self-collection kits to have available for their patients. While the authors do not differentiate between primary care and speciality practices, this early finding suggests that there is interest in offering self-collection for CCS. Ongoing evaluation of the BC CCS program will hopefully include provider experiences and perspectives on self-collection.

Capacity Considerations

Logistical considerations related to the implementation of self-collection for CCS also caused concerns for some providers. Even those providers who identified myriad benefits of self-collection expressed hesitation in offering it due to an anticipated increased workload for themselves and their teams (Le et al., 2022; Zammit et al., 2023). This concern is somewhat paradoxical given that, with self-collection, the act of collecting the specimen is shifted from the provider to the patient, which would potentially free up providers to provide those aspects of care that patients cannot complete themselves (Xiong et al., 2022; Zelli et al., 2022). However, studies that explored this challenge identified administrative tasks, such as identifying eligible patients and coordinating self-collection kit pick-up and return, as most burdensome for PCP

practices (Bohn et al., 2022; Creagh et al., 2021; Le et al., 2022; Le Goff et al., 2023; Zammit et al., 2023).

One area that was largely unaddressed in the literature was CCS result follow-up. Multiple studies highlighted the need for clear processes to guide the distribution and return of self-collection kits; however, less attention was paid to how results from self-collection would be handled by PCPs and whether this new approach to CCS would require different care pathways. When a clinician collects a specimen for CCS, that provider assumes the responsibility for the follow-up of results (Le et al., 2022). However, providers expressed concern that, when a patient engages in self-collection, who holds the responsibility for follow-up becomes less clear (Le et al., 2022; Zammit et al., 2023). Two articles identified specific provider concerns related to follow-up of screening results. The possibility of increased access to screening without a corresponding increase in follow-up or treatment was identified by providers as decreasing barriers to CCS, but not the full spectrum of cancer care (Le et al., 2022). In discussing existing self-collection methods for CCS in Australia, providers described a well-established screening pathway and an unsolved need to ensure follow-up for positive HPV results (Zammit et al., 2023).

As previously discussed, the BCCA coordinates the provincial CCS program in BC and works in collaboration with the patient's PCP, if they have one (PHSA, 2025a; 2025e). In BC, patients may self-refer to BCCA to determine eligibility for CCS and can receive a self-collection kit by mail if they are due for CCS, all without the need for a PCP appointment (PHSA, 2025e). Additionally, the BCCA maintains a provincial database for CCS, and proactively sends reminders to patients when they are due for screening (PHSA, 2025e). Based on the provider perspectives captured in the literature, this approach seems desirable because it

shifts the tasks of determining patient eligibility, coordinating specimen collection, and following-up on results from individual providers to a provincial agency. This approach is particularly important in the current climate of PCP shortages across BC and Canada because it decreases demands on PCPs and it allows all BC residents to access CCS if they need it, even if they do not have a regular PCP (Canadian Institute for Health Information, 2024; PHSA, 2025e). In situations where unattached patients require follow-up based on screening results, BCCA will connect the patient with a clinic in their home community (PHSA, 2025e).

Resource Allocation

Cost considerations were cited by providers as potential barriers to successful implementation of self-collection for CCS. For example, uncertainty around insurance coverage for self-collection (Fontenot et al., 2024; Xiong et al., 2022) and a lack of a clear compensation model for providers who facilitate self-collection (Bohn et al., 2022), were of particular concern in the US, where there is no universal healthcare coverage system (Fuzzell et al., 2021). Conversely, in Canada, CCS is universally available to eligible patients at no cost (CPAC, 2024). In BC specifically, self-collection supplies are provided to eligible patients free of charge, along with a prepaid return envelope so that patients can mail the sample back for analysis (PHSA, 2025e). However, Canadian PCP perspectives on compensation for clinician-collected versus self-collected CCS specimens remains unknown.

Resource allocation and policy considerations for CCS will need to evolve alongside HPV vaccination patterns. Prior to widespread availability of HPV vaccination, CCS was the primary strategy to prevent cervical cancer-related morbidity and mortality (CPAC, 2024). Theoretically, as HPV vaccination coverage increases, rates of HPV infection will decrease, as will resultant cervical cancer. With this in mind, it is possible that patients could overestimate the

protection conferred by the HPV vaccine and then not see the need for CCS. Public health messaging will need to continue to be responsive to such trends and will likely rely on PCPs to support health promotion activities. Currently, PHAC (2024) continues to recommend CCS for both vaccinated and unvaccinated individuals:

> While HPV vaccine has been shown to be highly effective against cervical cancer caused by the HPV types contained within the vaccine, vaccine recipients remain susceptible to infection from other high-risk HPV types. In addition, sexually active [individuals] may have been infected with the HPV types contained within the HPV vaccine prior to receiving the vaccine. ("Cervical Cancer Screening in Women" section)

As a result, CCS remains a priority strategy to prevent cervical cancer. The BCCA has successfully established coordinated and comprehensive clinical guidelines, logistical supports, and policy frameworks to support the implementation of self-collection for CCS. Many of the barriers identified by providers in the literature have been addressed by the BCCA's CCS program, and future research into provider perspectives on its implementation is needed to provide local data.

Limitations

In their discussion of the IR method, Whittemore and Knafl (2005) described its value as well as the complexities of including diverse methodologies for informing evidence-based nursing practice. The challenges of combining studies that employed different methodologies and made different comparisons led to limitations in this IR. As was introduced in Chapter Four (Figure 1), while all thirteen articles explored health care providers' perspectives on the use of self-collection for CCS, the variables and research methods differed. As a result, it was difficult to determine which specific variables contributed to providers' perspectives and in what ways.

For example, if all of the articles had compared at-home versus in-clinic HPV self-collection, it would be relatively straightforward to draw conclusions about how independent variables, such as collection setting, may have impacted the outcome of interest, namely provider perspectives. Conversely, it was much more challenging to compare providers' perspectives on traditional Pap testing with perspectives on mail-based HPV self-collection, for example, because there were so many variables that differed between studies. As a result, it is much more likely that confounding variables may have obscured true relationships between conditions and outcomes. As the familiar idiom illustrates, we cannot compare apples and oranges. In some cases, the characteristics were too dissimilar to allow for meaningful comparison across studies. This is not a reflection of the quality of each individual study; rather, it is a reflection of the breadth of potential approaches to studying this topic.

Additionally, the current literature lacks perspectives specific to Canadian NPs. The dataset included only one Canadian study, and while other Canadian research informed the background of the IR, overall conclusions cannot be directly applied to Canadian NP role in CCS. While it was necessary to include international literature, important jurisdictional differences in NP scope may have confounded the findings.

Finally, because the studies included in the dataset employed non-experimental designs, the conclusions presented by the researchers were necessarily based on their interpretations, and thus are impacted by their biases. The narrative analysis undertaken for this IR involved secondary analysis of the published data, and the conclusions presented herein are subject to the author's own biases and frames of reference (Whittemore & Knafl, 2005). While the author has endeavoured to position herself relative to the research question (see Chapter Three), this IR represents only one interpretation of the available data.

Chapter Six: Conclusion

This review sought to answer the question "What are the perspectives of PCPs toward specimen self-collection for CCS?" using the Whittemore and Knafl (2005) IR methodology. Previous studies have suggested that, by eliminating the need for a pelvic exam, self-collection has the potential to improve CCS rates, especially amongst patients who are unwilling or reluctant to undergo a pelvic exam. Given the potential impacts on their patients' health behaviours, PCP perspectives on self-collection for CCS are critical factors in informing best practices and implementation strategies to support the expansion of this evidence-based and patient-centred aspect of preventative healthcare.

Findings from the thirteen studies reviewed suggest that PCPs have identified a mix of advantages and disadvantages associated with self-collection for CCS, and thus, hold both positive and negative perspectives on self-collection for CCS. However, in many contexts, PCPs remain unfamiliar with self-collection for CCS. This suggests that further research is needed to identify facilitators and barriers related to PCP knowledge of self-collection.

The scope of this IR did not allow for in-depth analysis of similarities and differences across international healthcare contexts reflected in the dataset. Differences in healthcare provider roles across study contexts, along with a deficit of NP-specific literature, limited conclusions pertaining to NP practice. Additionally, themes related to healthcare access and patient-centre care were identified and warrant more fulsome investigation.

References

Barger, M. K., Howe-Heyman, A., & Harris, N. R. (2023). Systematic reviews to inform practice, May/June 2023. *Journal of Midwifery & Women's Health, 68*(3), 395–403. https://doi.org/10.1111/jmwh.13507

Bohn, J. A., Fitch, K. C., Currier, J. J., & Bruegl, A. (2022). HPV self-collection: What are we waiting for? Exploration of attitudes from frontline healthcare providers. *International Journal of Gynecological Cancer*, *32*(12), 1519–1523. https://doi.org/10.1136/ijgc-2022-003860

Brennan, L., Adekunle, T., Kasting, M., Forman, M. R., Champion, V., & Rodriguez, N. M. (2024). Factors associated with clinician willingness to adopt HPV self-sampling and self-testing for cervical cancer screening. *Journal of Clinical and Translational Science*, *8*(1), Article e118. https://doi.org/10.1017/cts.2024.604

British Columbia College of Nurses and Midwives. (n.d.). *Certified practice.* https://www.bccnm.ca/RN/learning/certified-practice/Pages/Default.aspx

Canadian Institute for Health Information. (2024, December 5). *Access to primary care: Many Canadians face challenges.* https://www.cihi.ca/en/primary-and-virtual-care-access-emergency-department-visits-for-primary-care-conditions/access-to-primary-care-many-canadians-face-challenges

Canadian Partnership Against Cancer. (2024). *Cervical screening in Canada: 2023-2024*. https://www.partnershipagainstcancer.ca/topics/cervical-screening-canada-2023-2024/programs/

Creagh, N. S., Saunders, T., Brotherton, J., Hocking, J., Karahalios, A., Saville, M., Smith, M., & Nightingale, C. (2024). Practitioners support and intention to adopt universal access to

self-collection in Australia's National Cervical Screening Program. *Cancer Medicine*, *13*(10), e7254. https://doi.org/10.1002/cam4.7254

Creagh, N. S., Zammit, C., Brotherton, J. M., Saville, M., McDermott, T., Nightingale, C., & Kelaher, M. (2021). Self-collection cervical screening in the renewed National Cervical Screening Program: A qualitative study. *Medical Journal of Australia*, *215*(8), 354–358. https://doi.org/10.5694/mja2.51137

Critical Appraisal Skills Programme. (2024a). *CASP checklist: For descriptive/cross-sectional studies.* https://casp-uk.net/casp-checklists/CASP-checklist-cross-sectional-study-2024.pdf

Critical Appraisal Skills Programme. (2024b). *CASP checklist: For qualitative research.* https://casp-uk.net/casp-checklists/CASP-checklist-qualitative-2024.pdf

Critical Appraisal Skills Programme. (2024c). *FAQs*. https://casp-uk.net/faqs/

Danan, E. R., Amundson, E. C., Gowdy-Jaehnig, A., Friedman, J. K., Pratt, R., Krebs, E. E., Spoont, M., & Ackland, P. E. (2024). "It feels like health care with the patient in mind": VA patient and staff perspectives on self-collected HPV testing. *Women's Health Issues*, *34*(5), 518–527. https://doi.org/10.1016/j.whi.2024.05.003

Davies-Oliveira, J. C., Smith, M. A., Grover, S., Canfell, K., & Crosbie, E. J. (2021). Eliminating cervical cancer: Progress and challenges for high-income countries. *Clinical Oncology, 33*(9), 550-559. https://doi.org/10.1016/j.clon.2021.06.013

Delpero, E., & Selk, A. (2022). Shifting from cytology to HPV testing for cervical cancer screening in Canada. *Canadian Medical Association Journal, 194*(17), E613-E615. https://doi.org/10.1503/cmaj.211568

Devictor, J., Burnet, E., Henriot, T., Leclercq, A., Ganne-Carrie, N., Kilpatrick, K., & Jovic, L. (2023). Implementing advanced practice nursing in France: A country-wide survey 2 years after its introduction. *Nursing Open, 10*(3), 1437–1448. https://doi.org/10.1002/nop2.1394

Fontenot, H. B., Fuzzell, L., Brownstein, N. C., Lake, P., Michel, A., Vadaparampil, S. T., & Perkins, R. B. (2024). Health care provider willingness to recommend self-collected tests for human papillomavirus: A mixed methods examination of associated factors. *Women's Health Issues*, *34*(5), 506–517. https://doi.org/10.1016/j.whi.2024.05.005

Fullerton, M. M., Ford, C., D'Silva, C., Chiang, B., Onobrakpor, S.-I., Dievert, H., Yang, H., Cabaj, J., Ivers, N., Davidson, S., & Hu, J. (2024, August 27). HPV self-sampling implementation strategies to engage under screened communities in cervical cancer screening: A scoping review to inform screening programs. *Frontiers in Public Health, 12*, Article 1430968. https://doi.org/10.3389/fpubh.2024.1430968

Fuzzell, L. N., Perkins, R. B., Christy, S. M., Lake, P. W., & Vadaparampil, S. T. (2021, March). Cervical cancer screening in the United States: Challenges and potential solutions for underscreened groups. *Preventive Medicine, 144*, Article 106400. https://doi.org/10.1016/j.ypmed.2020.106400

Gentile, L., Smith, L. W., Smith, B., Ogilvie, G., & Proctor, L. (2024). Implementation of human papillomavirus primary screening for cervical cancer in BC. *British Columbia Medical Journal, 66*(10), 375-380. https://bcmj.org/articles/implementation-human-papillomavirus-primary-screening-cervical-cancer-bc

Geoffrey R. Weller Library. (2025, Apr 2). *Nursing: Articles.* https://libguides.unbc.ca/nursing/articles

Guidelines and Protocols Advisory Committee. (2016). Genital tract cancers in females: Human papillomavirus related cancers (cervical, vaginal & vulvar). *BC Guidelines.* https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/fgt_hpv.pdf

Gupta, S., Barnes, A., Brenner, A. T., Campbell, J., Davis, M., English, K., Hoover, S., Kim, K., Kobrin, S., Lance, P., Mishra, S. I., Oliveri, J. M., Reuland, D. S., Subramanian, S., & Coronado, G. D. (2024). Mail-based self-sampling to complete colorectal cancer screening: Accelerating colorectal cancer screening through implementation science. *Preventing Chronic Disease, 20*, E112. https://doi.org/10.5888/pcd20.230083

Hawkes, D., Keung, M. H. T., Huang, Y., McDermott, T. L., Romano, J., Saville, M., & Brotherton, J. M. L. (2020). Self-collection for cervical screening programs: From research to reality. *Cancers, 12*(4), Article 1053. https://doi.org/10.3390/cancers12041053

Health Evidence. (2021). *Developing an efficient search strategy using PICO*. http://www.healthevidence.org/practice-tools.aspx

HealthLinkBC. (2024). *Human papillomavirus (HPV) vaccines*. https://www.healthlinkbc.ca/healthlinkbc-files/human-papillomavirus-hpv-vaccines

Hong, Q. N., Pluye, P., Fabregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P, Gagnon, M.-P., Griffiths, F., Nicolau, B., O'Cathain, A., Rousseau, M.-C., & Vedel, I. (2018). *Mixed methods appraisal tool (MMAT) version 2018: User guide.* http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/fetch/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf

Huntington, S., Sudhir, K. P., Schneider, V., Sargent, A., Turner, K., Crosbie, E. J., & Adams, E. J. (2023). Two self-sampling strategies for HPV primary cervical cancer screening

compared with clinician-collected sampling: An economic evaluation. *BMJ Open, 13,* Article 068940. http://dx.doi.org/10.1136/bmjopen-2022-068940

Garcia, C., Lothamer, H., & Mitchell, E. M. (2016). Provider-identified barriers to cervical cancer screening and perceptions toward self-collection of human papillomavirus in Southwest Virginia. *Public Health Nursing*, *33*(6), 539–546. https://doi.org/10.1111/phn.12285

Ingamells, S., Bell, R., Nip, J., Innes, C., Whaiti, S. T., Tino, A., McMenamin, J., Hudson, B., Gibson, M., Lawton, B., & Sykes, P. (2024). Perceived barriers to self-collected HPV testing for cervical cancer screening, and knowledge of HPV: A survey of primary healthcare smear- takers across Aotearoa New Zealand. *New Zealand Medical Journal*, *137*(1590), 57-76. https://doi.org/10.26635/6965.6308

Katz, M. L., Zimmermann, B. J., Moore, D., Paskett, E. D., & Reiter, P. L. (2017). Perspectives from health-care providers and women about completing human papillomavirus (HPV) self-testing at home. *Women & Health*, *57*(10), 1161–1177. https://doi.org/10.1080/03630242.2016.1243608

King, E. M., & Busolo, D. S. (2022). The role of primary care Nurse Practitioners in reducing barriers to cervical cancer screening: A literature review. *Canadian Oncology Nursing Journal*, *32*(2), 233–244. https://doi.org/10.5737/23688076322233244

Le, D., Ciceron, A. C., Jeon, M. J., Gonzalez, L. I., Jordan, J. A., Bordon, J., & Long, B. (2022). Cervical cancer prevention and high-risk HPV self-sampling awareness and acceptability among women living with HIV: A qualitative investigation from the patients' and providers' perspectives. *Current Oncology*, *29*(2), 516–533. https://doi.org/10.3390/curroncol29020047

Le Goff, J., Le Duc-Banaszuk, A.-S., Lefeuvre, C., Pivert, A., Ducancelle, A., De Pauw, H., Arbyn, M., Vinay, A., & Rexand-Galais, F. (2023). Acceptability to healthcare professionals of home-based HPV self-sampling for cervical screening: A French qualitative study conducted in an area with low access to health services. *Cancers*, *15*(21), Article 5163. https://doi.org/10.3390/cancers15215163

Mao, C., Kulasingam, S. L., Whitham, H. K., Hawes, S. E., Lin, J., & Kiviat, N. B. (2017). Clinician and patient acceptability of self-collected human papillomavirus testing for cervical cancer screening. *Journal of Women's Health*, *26*(6), 609–615. https://doi.org/10.1089/jwh.2016.5965

Ministry of Health. (2017, January 6). *B.C. extends free HPV coverage to boys*. https://news.gov.bc.ca/releases/2017HLTH0003-000027

Ministry of Health. (2024, January 9). *New self-screening program will help detect cervical cancer sooner*. https://news.gov.bc.ca/releases/2024HLTH0001-000015

Ministry of Health. (2025). *BC's primary care system.* https://www2.gov.bc.ca/gov/content/health/accessing-health-care/bcs-primary-care-system

National Cancer Institute. (2024). *HPV and Pap test results: Next steps after an abnormal cervical cancer screening test*. https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results

National Cervical Screening Program. (2022). *Cervical screening in Australia.* https://www.health.gov.au/sites/default/files/documents/2022/07/national-cervical-screening-program-cervical-screening-in-australia.pdf

Nitkowski, J., Giuliano, A. R., Ridolfi, T., Chiao, E., Fernandez, M. E., Schick, V., Swartz, M. D., Smith, J. S., & Nyitray, A. G. (2024). Acceptability of anal human papillomavirus

home self-sampling and clinician sampling among sexual and gender minority individuals in Milwaukee, Wisconsin: The prevent anal cancer self-swab study. *LGBT Health, 11*(1), 47-56. https://doi.org/10.1089/lgbt.2023.0012

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021, March). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *British Medical Journal, 372*, Article n71. https://doi.org/10.1136/bmj.n71

Polman, N. J., Ebisch, R. M. F., Heideman, D. A. M., Melchers, W. J. G., Bekkers, R. L. M., Molijn, A. C., Meijer, C. J. L. M., Quint, W. G. V., Snijders, P. J. F., Massuger, L. F. A. G., van Kemenade, F. J., & Berkhof, J. (2019). Performance of human papillomavirus testing on self-collected versus clinician-collected samples for the detection of cervical intraepithelial neoplasia of grade 2 or worse: A randomised, paired screen-positive, non-inferiority trial. *Lancet Oncology, 20*(2), 229-238. http://dx.doi.org/10.1016/S1470-2045(18)30763-0

Pourette, D., Cripps, A., Guerrien, M., Desprès, C., Opigez, E., Bardou, M., & Dumont, A. (2022). Assessing the acceptability of home-based HPV self-sampling: A qualitative study on cervical cancer screening conducted in Reunion Island prior to the RESISTE trial. *Cancers*, *14*(6), Article 1380. https://doi.org/10.3390/cancers14061380

Provincial Health Services Authority. (2024a). *Cervix self-screening at the clinic: Instructions for health care providers*. http://www.bccancer.bc.ca/screening/Documents/Cervix-Self-Screening-Clinic-Instructions.pdf

Provincial Health Services Authority. (2024b). *Should my patient self-screen or get a provider-collected liquid-based cytology (LBC) sample?* http://www.bccancer.bc.ca/screening/Documents/Cervix-SelfScreen-Or-LBC.pdf

Provincial Health Services Authority. (2025a). *A comprehensive cancer control program for BC*. http://www.bccancer.bc.ca/

Provincial Health Services Authority. (2025b). *BC cancer screening: Cervix*. http://www.bccancer.bc.ca/screening/cervix

Provincial Health Services Authority. (2025c). *Health professionals: Cervix screening*. http://www.bccancer.bc.ca/screening/health-professionals/cervix

Provincial Health Services Authority. (2025d). *HPV: The science*. http://www.bccancer.bc.ca/prevent/hpv/the-science

Provincial Health Services Authority. (2025e). *What is cervix self-screening?* http://www.bccancer.bc.ca/screening/cervix/how-it-works/what-is-cervix-self-screening

Public Health Agency of Canada. (2012). Update on human papillomavirus (HPV) vaccines. *Canada Communicable Disease Report, 38*(1). https://doi.org/10.14745/ccdr.v38i00a01

Public Health Agency of Canada. (2024). *Canadian immunization guide: Human papillomavirus (HPV) vaccines*. https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-9-human-papillomavirus-vaccine.html

Rodriguez, N. M., Brennan, L. P., Claure, L., Balian, L. N., Champion, V. L., & Forman, M. R. (2023). Leveraging COVID-era innovation for cervical cancer screening: Clinician awareness and attitudes toward self-sampling and rapid testing for HPV detection. *PLoS ONE*, *18*(3), Article e0282853. https://doi.org/10.1371/journal.pone.0282853

ScreeningBC. (2024, January 26). *Cervix self-screening* [YouTube video playlist]. https://www.youtube.com/playlist?list=PL5xuSF2N71Csv0RvSh-qcCezkXlC43Cga

Senkomago, V., & Saraiya, M. (2017). Examining acceptability of self-collection for human papillomavirus testing among women and healthcare providers with a broader lens. *Journal of Women's Health, 26*(6), 597–599. https://doi.org/10.1089/jwh.2017.6384

Shaw, P. A. (2000). The history of cervical screening I: The Pap. test. *Journal SOGC, 22*(2), 110-114. https://doi.org/10.1016/S0849-5831(16)31416-1

Vilos, G. A. (1998). The history of the Papanicolaou smear and the odyssey of George and Andromache Papanicolaou. *Obstetrics & Gynecology, 93*(3), 479-83. https://doi.org/10.1016/s0029-7844(97)00695-9

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, *52*(5), 546–553. https://doi.org/10.1111/j.1365-2648.2005.03621.x

Winer, R. L., Lin, J., Anderson, M. L., Tiro, J. A., Green, B. B., Gao, H., Meenan, R. T., Hansen, K., Sparks, A., & Buist, D. S. M. (2023). Strategies to increase cervical cancer screening with mailed human papillomavirus self-sampling kits: A randomized clinical trial. *Journal of the American Medical Association*, *330*(20), 1971–1981. https://doi.org/10.1001/jama.2023.21471

World Health Organization. (2020). *Cervical cancer.* https://www.who.int/news-room/fact-sheets/detail/cervical-cancer

World Health Organization. (2024). *Global strategy to accelerate the elimination of cervical cancer as a public health problem.* https://iris.who.int/bitstream/handle/10665/336583/9789240014107-eng.pdf

Xiong, S., Lazovich, D. A., Hassan, F., Ambo, N., Ghebre, R., Kulasingam, S., Mason, S. M., & Pratt, R. J. (2022). Health care personnel's perspectives on human papillomavirus (HPV) self-sampling for cervical cancer screening: A pre-implementation, qualitative study. *Implementation Science Communications*, *3*(1), Article 130. https://doi.org/10.1186/s43058-022-00382-3

Zammit, C., Creagh, N., Nightingale, C., McDermott, T., Saville, M., Brotherton, J., & Kelaher, M. (2023, April 27). 'I'm a bit of a champion for it actually': Qualitative insights into practitioner-supported self-collection cervical screening among early adopting Victorian practitioners in Australia. *Primary Health Care Research & Development*, *24*, Article e31. https://doi.org/10.1017/S1463423623000191

Zelli, J., Hum, S., Lofters, A., & Dunn, S. (2022). Clinician acceptability of self-collected human papillomavirus swabs as a primary cervical cancer screening method. *Canadian Family Physician*, *68*(2), e31–e38. https://doi.org/10.46747/cfp.6802e31

Appendix A

Search Concepts and Terms

Concepts	CINAHL Subject Heading*	MeSH (Medline)+	Google Scholar
Health care providers' perspectives	• attitudes or perceptions or opinions or thoughts or feelings or beliefs • **Attitude of Health Personnel** • **Nurse Attitudes** • **Physician Attitudes** • **Midwife Attitudes** • **Physician Assistant Attitudes** • **Attitude to Medical Treatment**	• primary care provider or pcp or practitioner or nurse practitioner • providers of health care or physicians or advance practice nurses • **Nurse Practitioners** • **Family Nurse Practitioners** • **General Practitioners** • **Physicians, Primary Care** • **Access to Primary Care** • **Health Personnel** • attitude or health personnel or experiences or perspective or nurse attitudes • **Attitude of Health Personnel** • **Health Knowledge, Attitudes, Practice**	• "HPV self-testing provider perspectives" • "primary care provider self-testing cervical cancer" • "physician perspectives self-testing cervical cancer" • "nurse practitioner perspectives self-testing cervical cancer"
Specimen self-collection	• self-sampling or hpv testing or home or kit • **Self-testing** • **Home diagnostic tests** • **Diagnostic test kits approval**	• self-sampling or hpv testing or home or kit • self-sampling hpv testing • **Self-Testing** • **Specimen Handling** • **Human Papilloma Viruses** • **Human Papillomavirus DNA Tests**	
Cervical cancer screening	• screening or early detection or early diagnosis or early identification • **Cancer Screening** • **Health Screening** • **Early detection of cancer** • **Early diagnosis** • **Early intervention** • hpv or humanpapillomavirus or human papilloma virus • **Human Papillomavirus Viruses** • pap smear screening or cervical cancer screening • **Cervical smears (Cervical smears, automated)** • Papanicolau • **Papillomavirus infections** • cervical cancer screening or cervical screening or smear test or pap smear • cervix cancer or cervix neoplasm or cervical cancer • cervical cancer or cervical neoplasm or cervical carcinoma • **Cervix neoplasms**	• cancer screening or early detection • **Early Detection of Cancer** • **Early Diagnosis** • human papillomavirus or human papilloma virus or hpv • **Human Papillomavirus Viruses** • cervical cancer screening or cervical screening or cervical screening programme or smear test or pap smear • **Papanicolaou Test** • **Uterine Cervical Neoplasms** • **Diagnostic Screening Programs**	
Search Results	9 articles	4 articles	11 articles
Removal of Duplicates	-4 duplicates		
Additional Hand Searching	+1 articles		
Results to be Screened	21 articles		

*Bolded terms are exact subject headings (MH); non-bolded terms are keyword searches (as suggested by CINAHL via EBSCO)

+Bolded terms are medical subject headings (MeSH); non-bolded terms are keyword searches (as suggested by MEDLINE via EBSCO)

Appendix B

Search Results using CINAHL (via EBSCO)

Tue, February 25, 2025 1:22:13 PM

#	Query	Limiters/Expanders	Last Run Via	Results
S11	S1 AND S9 AND S10	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	75
S10	S6 OR S7	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	19,273
S9	S2 OR S3 OR S4	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	126,779
S8	(MH "Physician Assistant Attitudes") OR "attitudes or perceptions or opinions or thoughts or feelings or beliefs" OR (MH "Attitude of Health Personnel") OR (MH "Physician Attitudes") OR (MH "Midwife Attitudes") OR (MH "Nurse Attitudes")	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	120,399
S7	(MH "Cervix Neoplasms") OR "cervix cancer or cervix neoplasm or cervical cancer"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	19,273
S6	(MH "Cervix Neoplasms") OR "cervix cancer or cervix neoplasm or cervical cancer"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	0
S5	(MH "Cervical Smears") OR "papanicolaou"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	7,507
S4	(MH "Cancer Screening") OR (MH "Cervical Smears") OR (MH "Cervical Smears,	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases	24,196

	Automated") OR "pap smear screening or cervical cancer screening"		Search Screen - Advanced Search Database - CINAHL Complete	
S3	(MH "Human Papillomavirus Viruses") OR "hpv or human papillomavirus or human papilloma virus" OR (MH "Papillomavirus Infections")	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	11,611
S2	(MH "Early Detection of Cancer") OR (MH "Early Diagnosis") OR (MH "Early Intervention") OR "screening or early detection or early diagnosis or early identification" OR (MH "Health Screening") OR (MH "Cancer Screening")	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	114,341
S1	(MH "Self-Testing") OR (MH "Home Diagnostic Tests") OR (MH "Diagnostic Test Kits Approval") OR "self-sampling or hpv testing or home or kit"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Complete	1,379

Appendix C

Search Results using MEDLINE (via EBSCO)

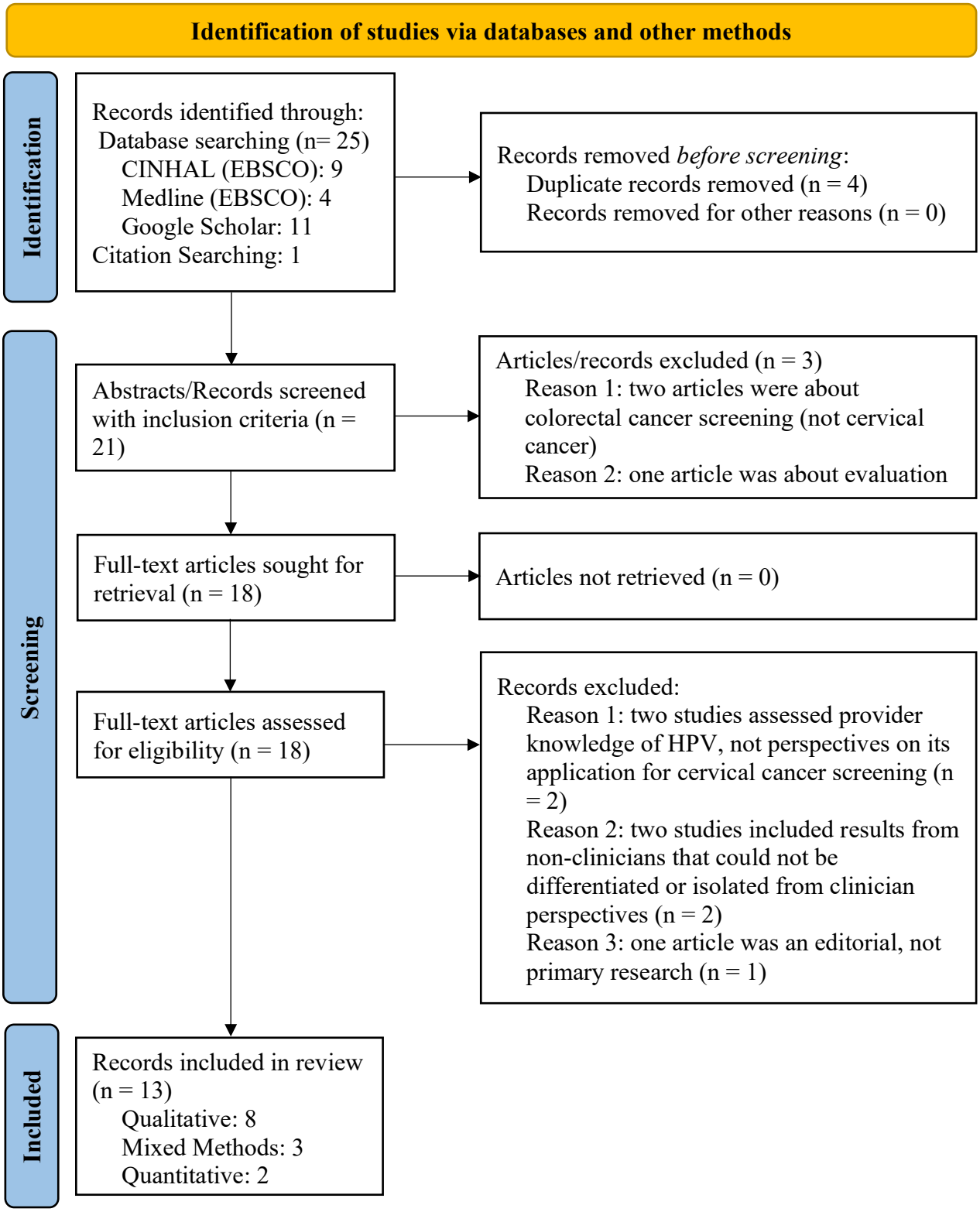
Tue, February 25, 2025 1:54:29 PM

#	Query	Limiters/Expanders	Last Run Via	Results
S14	S4 AND S12 AND S13	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	50
S13	S5 OR S6	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	32,687
S12	S7 OR S8 OR S9 OR S10 OR S11	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	431,456
S11	(MH "Health Personnel") OR "providers of health care or physicians or advance practice nurses" OR (MH "Attitude of Health Personnel") OR (MH "Physicians, Primary Care") OR (MH "Health Knowledge, Attitudes, Practice")	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	320,779
S10	(MH "Attitude of Health Personnel") OR "attitude of health personnel or experiences or perspective or nurse attitudes"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	137,501
S9	(MH "Nurse Practitioners") OR (MH "Family Nurse Practitioners") OR (MH "Primary Health Care") OR "primary care provider or pcp or practitioner or nurse practitioner" OR (MH "General Practitioners") OR (MH "Physicians, Primary Care")	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	126,715
S8	"health professionals or healthcare professionals or health personnel or healthcare	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases	201,882

	personnel or nurses or physicians" OR (MH "Health Personnel") OR (MH "Attitude of Health Personnel")		Search Screen - Advanced Search Database - MEDLINE with Full Text	
S7	(MH "Nurse Practitioners") OR (MH "Family Nurse Practitioners") OR (MH "Advanced Practice Nursing") OR "nurse practitioner or advanced practice nurse or apn or np"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	21,507
S6	"self-sampling hpv testing"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	7
S5	(MH "Self-Testing") OR (MH "Specimen Handling") OR "self-sampling or hpv testing or home or kit"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	32,682
S4	S1 OR S2 OR S3	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	160,192
S3	(MH "Human Papillomavirus Viruses") OR "human papillomavirus or human papilloma virus or hpv"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	1,871
S2	(MH "Early Detection of Cancer") OR (MH "Papanicolaou Test") OR (MH "Uterine Cervical Neoplasms") OR (MH "Diagnostic Screening Programs") OR "cervical cancer screening or cervical screening or cervical screening programme or smear test or pap smear"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	128,070
S1	(MH "Early Detection of Cancer") OR (MH "Early Diagnosis") OR "cancer screening or early detection"	Expanders - Apply equivalent subjects Search modes - Proximity	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - MEDLINE with Full Text	74,447

Appendix D

PRISMA Flow Diagram



(adapted from Page et al., 2021)

Appendix E

Data Appraisal Summaries

Article	Bohn, J. A., Fitch, K. C., Currier, J. J., & Bruegl, A. (2022). HPV self-collection: What are we waiting for? Exploration of attitudes from frontline healthcare providers. *International Journal of Gynecological Cancer, 32*(12), 1519–1523. https://doi.org/10.1136/ijgc-2022-003860				
Study Location	Oregon, USA			**Sample Size**	N=18
Study Design	Qualitative			**Implementation Stage**	☒ Pre ☐ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Goal of research is to examine Oregon provider attitudes towards HPV self-collection in order to increase uptake/availability of cervical cancer screening. Authors clearly state context, including need for low barrier method for cervical cancer screening, and this method's proven clinical effectiveness, cost-effectiveness.	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Authors sought to examine attitudes held by a group of health care providers.	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Observational study. Authors used semi-structured focus groups and individual interviews. Grounded theory for analysis.	
4. Was the recruitment strategy appropriate to the aims of the research?	☐ Yes	☐ No	☒ Can't tell	Authors invited all members of Oregon Rural Practice-based Research Network via email. State-wide Network was intentionally used to include providers from varied geographic locations within state. However, it is unclear whether providers in urban areas were included as well.	
5. Was the data collected in a way that addressed the research issue?	☐ Yes	☐ No	☒ Can't tell	The preferred data collection method was via focus groups, but individual interviews were arranged for participants who could not attend 1 of 3 FGs. The authors do not address whether/how participation in a focus group versus individual interview may have impacted data collected. Additionally, the authors intended to examine providers' "knowledge" of HPV self-collection (p. 1519), but only assessed for familiarity using Likert scale, which may or may not equate to their knowledge.	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☒ No	☐ Can't tell	Authors were obstetrician/gynecologist (n=2), gynecologic oncologist, health services researcher (p. 1520). All authors were affiliated with the Department of Obstetrics & Gynecology and/or Knight Cancer Institute in Portland. It is unclear how the authors' own perspectives on the topic may have impacted the research design or results.	
7. Have ethical issues been taken into consideration?	☐ Yes	☐ No	☒ Can't tell	Ethics approval was granted. "Study participants gave informed consent to participate in the study before taking part" (p. 1523). The study topic relates to health equity and health care access, however the ethical implications of the research itself are not discussed.	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	The authors describe the "comparative, iterative, and interactive" (p. 1520) phases of data collection and analysis, and the component steps involved in grounded theory. The whole study team was involved in coding data, and together identified themes (sub-, meta-, macro- and overarching themes).	
9. Is there a clear statement of findings?	☐ Yes	☐ No	☒ Can't tell	Findings include a "strong desire" (p. 1521) to implement HPV self-collection, as well as multiple concerns held by health care providers. However, the authors did not present the themes clearly. For example, they identified barriers to cervical cancer screening broadly, not only specific to HPV self-collection (i.e., theme #5 identified barriers to current standard practice, not the proposed change to practice, which was the purpose of the study).	
10. How valuable is the research?				The study is valuable because it suggests an overall willingness to embrace this new practice, as well as ambivalence towards change. The results of this study include provider concerns as well as barriers to implementation that are concordant with the wider literature on this topic. For Oregon, this study provides local perspectives on potential challenges for implementation.	
Overall Appraisal	☐ Low quality		☒ Medium quality		☐ High quality

(CASP, 2024b)

Article	Brennan, L., Adekunle, T., Kasting, M., Forman, M. R., Champion, V., & Rodriguez, N. M. (2024). Factors associated with clinician willingness to adopt HPV self-sampling and self-testing for cervical cancer screening. *Journal of Clinical and Translational Science, 8*(1), Article e118. https://doi.org/10.1017/cts.2024.604				
Study Location	"Midwest" USA			**Sample Size**	248 surveys, 23 interviews
Study Design	Mixed methods			**Implementation Stage**	☒ Pre ☐ Post
5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	☒ Yes	☐ No	☐ Can't tell	"convergent mixed-methods approach that included a survey and in-depth interviews" (p. 2)	
5.2. Are the different components of the study effectively integrated to answer the research question?	☒ Yes	☐ No	☐ Can't tell	Qualitative data collection tool developed based off of quantitative tool "to contextualize and provide reasoning behind the findings from the quantitative survey." (p. 3)	
5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	☒ Yes	☐ No	☐ Can't tell	Clear presentation of results, and integrated discussion as related to topics/themes.	
5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	☒ Yes	☐ No	☐ Can't tell	Multiple examples in which quant/qual results diverged, which were elaborated upon in discussion section. Some hypotheses presented, in addition to highlighting areas for future study.	
5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	☒ Yes	☐ No	☐ Can't tell	Adequate description of data analysis for each type of data. Inclusion of raw data and syntehsized data in results and discussion sections, respectively.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(Hong et al., 2018)

Article	Creagh, N. S., Zammit, C., Brotherton, J. M., Saville, M., McDermott, T., Nightingale, C., & Kelaher, M. (2021). Self-collection cervical screening in the renewed National Cervical Screening Program: A qualitative study. *Medical Journal of Australia, 215*(8), 354–358. https://doi.org/10.5694/mja2.51137				
Study Location	Victoria, Australia			**Sample Size**	N=18
Study Design	Qualitative			**Implementation Stage**	☐ Pre ☒ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Goal of study was to evaluate implementation of self-collection and assess acceptability of the new practice according to both patients and providers.	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Authors sought to understand the experiences of participants.	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Semi-structured individual interviews were conducted.	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Providers were contacted by mail via registry held by the lab that tests self-collected specimens. Follow-up phone calls were made to those who had not opted-out following initial contact. Recruitment was ongoing throughout the data collection phase.	
5. Was the data collected in a way that addressed the research issue?	☐ Yes	☐ No	☒ Can't tell	Limited information is provided about the semi-structured interviews; the interview guide was not provided, and information about the interviews (e.g., duration) were not included in the article.	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☒ No	☐ Can't tell	Author affiliations are included, but individual author professions (i.e., clinician vs. academic) are not included and the article does not describe individual author contributions. Interestingly, the publication was dedicated to a deceased member of the research team. However, there is no discussion of potential for bias, etc.	
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure. Additional consent was sought to audio record the interview, and the authors describe accommodations that were made for one participant who did not consent to recording.	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	NVivo software used for template analysis. Initial thematic codes based in literature, then revised multiple times by research team, with cross-checking for consistency amongst individual researchers.	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell	Article concludes that self-collection is "feasible and acceptable" (p. 357). Additionally, the authors highlight priority barriers to implementation.	
10. How valuable is the research?				The research is valuable because it builds on a prior pilot study. Importantly, it demonstrates feasibility outside of the pilot context (i.e., without the additional supports that were available to implement the practice). It also highlights barriers to success and identifies resources that are needed to support success of this practice change.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024b)

Article	Fontenot, H. B., Fuzzell, L., Brownstein, N. C., Lake, P., Michel, A., Vadaparampil, S. T., & Perkins, R. B. (2024). Health care provider willingness to recommend self-collected tests for human papillomavirus: A mixed methods examination of associated factors. *Women's Health Issues, 34*(5), 506–517. https://doi.org/10.1016/j.whi.2024.05.005				
Study Location	USA (national)			**Sample Size**	1251 surveys, 51 interviews
Study Design	Mixed methods			**Implementation Stage**	☒ Pre ☐ Post
5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	☒ Yes	☐ No	☐ Can't tell	Sought to identify provider and practice characteristics, preferences (quant) and provider attitudes, perceived concerns and perceived benefits (qual).	
5.2. Are the different components of the study effectively integrated to answer the research question?	☒ Yes	☐ No	☐ Can't tell	"Quantitative measures included provider and practice characteristics, willingness to recommend, and preferences related to self-collection. Qualitative interviews further elucidated provider perspectives." (p. 506)	
5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	☒ Yes	☐ No	☐ Can't tell	Survey questions and results, along with analysis in Results section. Interview themes and subthemes, as well as quotations (raw data) included in Results section. Integrated discussion, drawing on quant/qual sources.	
5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	☒ Yes	☐ No	☐ Can't tell	Good discussion of both convergence and divergence between qual/quant data. Interesting analysis of divergence in 'special populations' vs general population.	
5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	☒ Yes	☐ No	☐ Can't tell	Appropriate smapling strategies, efforts to minimize bias/confounding.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024a)

Article	Katz, M. L., Zimmermann, B. J., Moore, D., Pasket, E. D., & Reiter, P. L. (2017). Perspectives from health-care providers and women about completing human papillomavirus (HPV) self-testing at home. *Women & Health, 57*(10), 1161–1177. https://doi.org/10.1080/03630242.2016.1243608				
Study Location	Oregon, USA			**Sample Size**	N=28
Study Design	Qualitative			**Implementation Stage**	☒ Pre ☐ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Goal of research is to examine provider perspectives on the practice of mailing HPV self-collection kits to rural patients.	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Authors sought to examine attitudes held by a group of health care providers.	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Conducted focus groups; intention to "foster dynamic group discussions and a broader range of themes" than individual interviews (p. 3). Individual interviews used if only one participant available.	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Convenience sample intended to provide local, non-generalizable findings.	
5. Was the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Extensive description of data collection protocols.	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☒ No	☐ Can't tell	Author affiliations are included, but individual author professions (i.e., clinician vs. academic) are not included. The article does describe individual author contributions to data analysis.	
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure.	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	Article includes appendices with themes and data to support transparency in how themes were developed.	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell	Overall acceptance of the use of mail-in HPV self-testing for rural patients. Extensive "Results" section consisted of 9 themes; may have been clearer or more effective to group these into a smaller number of total themes.	
10. How valuable is the research?				This research is valuable for program planning purposes. The FGs showed participants multiple potential devices and sought perspectives on a range of hypothetical options. Seeking perspectives prior to implementation has the potential to mitigate challenges and increase engagement/buy-in. The research is conducted in a particularly underserved population with high disease burden.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024b)

Article	Le, D., Ciceron, A. C.., Jeon, M. J., Gonzalez, L. I., Jordan, J. A., Bordon, J., & Long, B. (2022). Cervical cancer prevention and high-risk HPV self-sampling awareness and acceptability among women living with HIV: A qualitative investigation from the patients' and providers' perspectives. *Current Oncology, 29*(2), 516–533. https://doi.org/10.3390/curroncol29020047				
Study Location	Washington DC, USA			**Sample Size**	N=10
Study Design	Qualitative			**Implementation Stage**	☒ Pre ☐ Post
1. Was there a clear statement of the aims of the research?	☐ Yes	☐ No	☒ Can't tell	Yes, 2 interrelated research questions (patient perspectives, provider perspectives), but unclear links between findings.	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Objective is to identify perspectives of patients and providers. Involves exploration of individual experiences.	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	"In-depth interviews with providers" (p. 518)	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Purposive sampling of healthcare providers who serve women living with HIV.	
5. Was the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Interview questions based on theoretical model (Health Belief Model).	
6. Has the relationship between researcher and participants been adequately considered?	☒ Yes	☐ No	☐ Can't tell	Followed principles of "community-engaged research" (p. 519), including community advisory board and member checks throughout process. Acknowledgment that academic researchers as outsiders, relying on community members.	
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure. Remuneration for participants.	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	Specific description "goal of this study was to achieve thematic saturation" (p. 519). Described analysis process and researcher roles therein.	
9. Is there a clear statement of findings?	☐ Yes	☐ No	☒ Can't tell	Clear statement of findings related to the patient perspectives, but less clear with respect to providers.	
10. How valuable is the research?				Valuable because of specific patient sub-population (women living with HIV) and health care providers who care for them.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024b)

Article	Le Goff, J., Le Duc-Banaszuk, A.-S., Lefeuvre, C., Pivert, A., Ducancelle, A., De Pauw, H., Arbyn, M., Vinay, A., & Rexand-Galais, F. (2023). Acceptability to healthcare professionals of home-based HPV self-sampling for cervical screening: A French qualitative study conducted in an area with low access to health services. *Cancers, 15*(21), Article 5163. https://doi.org/10.3390/cancers15215163				
Study Location	Mayenne & Sarthe, Pays de la Loire, France			**Sample Size**	N=59
Study Design	Qualitative			**Implementation Stage**	☐ Pre ☒ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Exploring perspectives in effort to improve access in underserved geographic areas. "Although healthcare professionals play a major role, little is known about their opinions on cervical screening and self-sampling" (p. 2)	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Aim of study: "explore viewpoints of health professionals" (p. 3)	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	This is part of a larger mixed methods study.	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes	☐ No	☐ Can't tell	All eligible providers were invited via public cancer screening organization. Invitations send via email, with spaced reminder emails sent.	
5. Was the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Profession-specific interview guides developed by local affiliate Dept of Psychology. Data collected by 1 trained interviewer (assuming good consistency). Interview guides included in publication, available to reader.	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☐ No	☒ Can't tell	Author affiliations are included, but individual author professions (i.e., clinician vs. academic) are not included.The article does describe individual author contributions to data analysis. Conflict of interest statement (negative).	
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure.	
8. Was the data analysis sufficiently rigorous?	☐ Yes	☐ No	☒ Can't tell	"Constant comparison" (p. 4) method used to identify saturation. However, insufficient description of how saturation was identified, how themes were identified/developed	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell		
10. How valuable is the research?				Valuable because offers international perspective. Attuned to "low physician density … medical deserts" (p. 2).	
Overall Appraisal	☐ Low quality		☒ Medium quality		☐ High quality

(CASP, 2024b)

Article	Mao, C., Kulasingam, S. L., Whitham, H. K., Hawes, S. E., Lin, J., & Kiviat, N. B. (2017). Clinician and patient acceptability of self-collected human papillomavirus testing for cervical cancer screening. *Journal of Women's Health, 26*(6), 609–615. https://doi.org/10.1089/jwh.2016.5965				
Study Location	Washington, USA			**Sample Size**	N=118
Study Design	Quantitative (cross-sectional)			**Implementation Stage**	☒ Pre ☐ Post
1. Did the study address a clearly focused issue?	☒ Yes	☐ No	☐ Can't tell	Study sample inclusion criteria were specific enough to clearly focus the question. The study sought the perspectives of specific health professions employed within a specified healthcare system who had performed Pap exams within specified timeframe and had publicly listed email address.	
2. Did the authors use an appropriate method to answer their question?	☒ Yes	☐ No	☐ Can't tell	The authors used a type of cross-sectional study (online survey), which provides a one-time 'snapshot' of the participants' opinions and perspectives and is an appropriate method to answer their research question.	
3. Were the subjects recruited in an acceptable way?	☒ Yes	☐ No	☐ Can't tell	The authors recruited participants via email, which is a common and widely accepted practice to invite participation in an online survey. This approach allows the researchers to quickly target all members of a specified group. However, there are potential drawbacks to this approach given that individuals may have multiple email addresses and may not actively check their employer-assigned address, or high email volume may results in messages being missed or ignored.	
4. Were the measures accurately measured to reduce bias?	☐ Yes	☐ No	☒ Can't tell	Both objective and subjective data were collected. Participant demographics including age, gender, profession, type of clinical practice/specialty were collected. Additionally, the study sought participants' perspectives on various clinical situations and characteristics, which was appropriate to answer the research question. However, the survey itself was not published, so it is impossible to fully assess the potential for measurement or classification bias (i.e., the wording of survey questions cannot be assessed).	
5. Were the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Data collection setting (online) and method (survey) are justified. While the specific wording of survey questions is unknown, the results suggest that participants had the option to select multiple pre-populated responses and could indicate "Other" if their desired answer was not available. However, it is unclear whether indicating "Other" would prompt or permit the participant to type an explanation.	
6. Did the study have enough participants to minimize the play of chance?	☒ Yes	☐ No	☐ Can't tell	The relatively small sample size (n=118) is appropriate to answer the question given the specific inclusion criteria for the study population. The response rate (49.6%) is sufficient to minimize the impact of chance. However, the response rates for subgroups varied considerably, suggesting that a number of likeminded participants may have skewed the results disproportionately.	
7. How are the results presented and what is the main result?				The results are presented as the proportion of respondents with shared/differing perspectives. Some data points are further analyzed for subgroups based on linked demographic data, however this is not reported consistently, which makes interpretation of the findings challenging. The main result is that the majority of respondents "would recommend a self-collected HPV test" (p. 609) if specific criteria were met.	
8. Was the data analysis sufficiently rigorous?	☐ Yes	☒ No	☐ Can't tell	The majority of results are descriptive statistics. The data analyzed via Chi square and Mantel-Haenszel tests are not included in the article; the authors include three points of analysis, only one of which has p-value <0.05. There is insufficient description of the analysis process.	
9. Is there a clear statement of findings?	☐ Yes	☐ No	☒ Can't tell	The findings are clearly stated and are informed by sufficient discussion. However, because this study is based on a pre-implementation survey, the findings are somewhat hypothetical. The main conclusion is: "Home self-collected HPV screening tests are acceptable to … clinicians if the test is shown to be accurate, cost effective, and does not impact access to a healthcare provider for other health concerns." (p. 614).	
10. Can the results be applied to the local population?	☐ Yes	☒ No	☐ Can't tell	In their discussion of the methodological limitations of their study, the authors describe the study population as mostly "academic clinicians who may be more willing to adopt new approaches to cervical cancer screening than those outside of an academic setting" (p. 613). The authors caution that the results are unlikely to be generalizable.	
11. How valuable is the research?				The authors assert that their study is "one of the first studies to also determine acceptability in clinicians" (p. 613) (i.e., in addition to patient perspectives). However, they also acknowledge that additional research is needed to inform implementation at the system and individual provider levels.	
Overall Appraisal	☒ Low quality		☐ Medium quality		☐ High quality

(CASP, 2024a)

Article	Pourette, D., Cripps, A., Guerrien, M., Desprès, C., Opigez, E., Bardou, M., & Dumont, A. (2022). Assessing the acceptability of home-based HPV self-sampling: A qualitative study on cervical cancer screening conducted in Reunion Island prior to the RESISTE trial. *Cancers, 14*(6), Article 1380. https://doi.org/10.3390/cancers14061380				
Study Location	Reunion Island (French territory in Indian Ocean)			**Sample Size**	N=20
Study Design	Qualitative			**Implementation Stage**	☒ Pre ☐ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Pre-implementation assessment of knowledge and perspectives. Part or larger program of research.	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Seeking to explore awareness, interest, perceptions of barriers, etc. led to results related to knowledge, attitudes, practices, past experiences .	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Sought perspectives of health professionals (and patients).	
4. Was the recruitment strategy appropriate to the aims of the research?	☐ Yes	☐ No	☒ Can't tell	Authors state that "a diverse sample of health professionals" (p. 4) was "selected", but provide no details about approach to sampling.	
5. Was the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Interview guides included in publication with relevant/ appropriate questions.	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☒ No	☐ Can't tell		
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure. Interviews conducted in multiple languages appropriate to context.	
8. Was the data analysis sufficiently rigorous?	☐ Yes	☐ No	☒ Can't tell	Discussion focused on data from patient interviews, not providers. Reader to assume that similar approach to analysis for provider interviews, but unclear.	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell	"The professionals interviewed were unanimous in recognizing that sending a selfsampling kit to women's homes should make it possible to reach women whom they are unable to screen" (p. 13)	
10. How valuable is the research?				International perspectives in context with diverse cultures (language, "medical pluralism" (p. 3), history), increased disease burden, inadequate access to health services.	
Overall Appraisal	☐ Low quality		☒ Medium quality		☐ High quality

(CASP, 2024b)

Article	Rodriguez, N. M., Brennan, L. P., Claure, L., Balian, L. N., Champion, V. L., & Forman, M. R. (2023). Leveraging COVID-era innovation for cervical cancer screening: Clinician awareness and attitudes toward self-sampling and rapid testing for HPV detection. *PLoS ONE, 18*(3), Article e0282853. https://doi.org/10.1371/journal.pone.0282853				
Study Location	Indiana, USA			**Sample Size**	224 surveys, 20 interviews
Study Design	Mixed methods			**Implementation Stage**	☒ Pre ☐ Post
5.1. Is there an adequate rationale for using a mixed methods design to address the research question?	☒ Yes	☐ No	☐ Can't tell	"This convergent mixed-methods study was designed as an online cross-sectional survey and in-depth interviews with clinicians who conduct cervical cancer screening in Indiana. (p. 3)	
5.2. Are the different components of the study effectively integrated to answer the research question?	☒ Yes	☐ No	☐ Can't tell	Quant (survey) to explore "clinician awareness, perceived benefit, and willingness to adopt" (p. 3) Qual (interviews) sought additional depth on perceptions of benefits/limitations, reasons individual providers were un/willing to adopt, and "whether COVID pandemic influenced their overall perspective of rapid testing as a screening modality" (p. 3)	
5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	☒ Yes	☐ No	☐ Can't tell	The way the results section was organized (qualitative theme with quant data to support/expand) demonstrates thoughtfulness towards how data was integrated to paint comprehensive picture.	
5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	☒ Yes	☐ No	☐ Can't tell	Some discordance within quant data (i.e., think it's beneficial, but not willing to adopt), which was then interpreted using qual.	
5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	☐ Yes	☐ No	☒ Can't tell	Largely, yes, it seems that there was good adherence. However, missing from the methods section is a comment on response rate for survey data. We know 224 surveys were completed, but it is not clear how many were eligible.	
Overall Appraisal	☐ Low quality		☒ Medium quality		☐ High quality

(Hong et al., 2018)

Article	Xiong, S., Lazovich, D. A., Hassan, F., Ambo, N., Ghebre, R., Kulasingam, S., Mason, S. M., & Pratt, R. J. (2022). Health care personnel's perspectives on human papillomavirus (HPV) self-sampling for cervical cancer screening: A pre-implementation, qualitative study. *Implementation Science Communications, 3*(1), Article 130. https://doi.org/10.1186/s43058-022-00382-3				
Study Location	"Midwest" USA			**Sample Size**	N=30
Study Design	Qualitative			**Implementation Stage**	☒ Pre ☐ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Description of current challenges; seeking perspectives on proposed solution.	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Seeking perspectives of "health care personnel (providers, leaders, and clinic staff)" (p. 1)	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Qualitative key informant interviews to seek participants' "views" on potential implementation (p. 1)	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Recruited via email plus snowball sampling. Screened with pre-interview survey.	
5. Was the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Pre-interview demographics survey plus individual interviews.	
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☒ No	☐ Can't tell		
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure. Remuneration for participants.	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	Publication includes detailed description of analysis process, as well as references to theoretical model used to develop data collection instrument.	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell	Provides nuanced but clear conclusions, which inform recommendations for future directions.	
10. How valuable is the research?				Provides good 'snapshot in time' of pre-implementation concerns, need for information, and considerations to support implementation success. Also identifies future research needs.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024b)

Article	Zammit, C., Creagh, N., Nightingale, C., McDermott, T., Saville, M., Brotherton, J., & Kelaher, M. (2023, April 27). 'I'm a bit of a champion for it actually': Qualitative insights into practitioner-supported self-collection cervical screening among early adopting Victorian practitioners in Australia. *Primary Health Care Research & Development, 24,* Article e31. https://doi.org/10.1017/S1463423623000191				
Study Location	Victoria, Australia			**Sample Size**	N=18
Study Design	Qualitative			**Implementation Stage**	☐ Pre ☒ Post
1. Was there a clear statement of the aims of the research?	☒ Yes	☐ No	☐ Can't tell	"This study aimed to describe the experiences of practitioners in Victoria, Australia, who used human papillomavirus (HPV)-based self-collection cervical screening during the first 17 months of its availability" (p. 1)	
2. Is a qualitative methodology appropriate?	☒ Yes	☐ No	☐ Can't tell	Seeking to "describe experiences" (p. 1).	
3. Was the research design appropriate to address the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Individual interviews using guide (published) that had been piloted.	
4. Was the recruitment strategy appropriate to the aims of the research?	☒ Yes	☐ No	☐ Can't tell	Purposive sampling of healthcare providers who were actively providing this service. Providers were contacted by mail via registry held by the lab that tests self-collected specimens. Follow-up phone emails/calls were made to those who had not opted-out following initial contact. Total of 3 rounds of communication. Interesting, third round of recruitment "over sampled male practitioners to maximize their representation as study participants." (p. 2)	
5. Was the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell		
6. Has the relationship between researcher and participants been adequately considered?	☐ Yes	☐ No	☒ Can't tell	Author affiliations are included, but individual author professions (i.e., clinician vs. academic) are not included.The article does describe individual author contributions to data analysis. Conflict of interest statement indicated that authors' employer received free test kits from manufacturer.	
7. Have ethical issues been taken into consideration?	☒ Yes	☐ No	☐ Can't tell	REB, informed consent, funding disclosure. Incentive (movie voucher) for participants. Statement re: conflict of interest (researchers had previously received free kits from manufacturers).	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	Authors state that Nvivo software used. Description of "thematic template analysis" approach included (p. 2), as well as development of coding framework, iterative revisions, efforts to ensure consistency.	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell	"Practitioners were overwhelmingly supportive of self-collection cervical screening because it was acceptable to their patients and addressed patients' barriers to screening." (p. 1)	
10. How valuable is the research?				Potentially very limited application given: 1) includes perspectives of early adopters (those who have used in first 17 months of availability), therefore introduces (self-)selection bias; 2) availability of self-testing very limited to specific population (e.g., "only available to those aged 30 years <, who were overdue for cervical screening and refused practitioner-collected test." (p. 2)	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024b)

Article	Zelli, J., Hum, S., Lofters, A., & Dunn, S. (2022). Clinician acceptability of self-collected human papillomavirus swabs as a primary cervical cancer screening method. *Canadian Family Physician, 68*(2), e31–e38. https://doi.org/10.46747/cfp.6802e31				
Study Location	Toronto, Canada			**Sample Size**	N=58
Study Design	Quantitative (cross-sectional)			**Implementation Stage**	☒ Pre ☐ Post
1. Did the study address a clearly focused issue?	☒ Yes	☐ No	☐ Can't tell	The study was focused based on participants (primary care providers and obstetrician-gynecologists) at two urban hospitals.	
2. Did the authors use an appropriate method to answer their question?	☒ Yes	☐ No	☐ Can't tell	The authors describe the study design as "descriptive, cross-sectional, anonymous, online pilot survey" (p. 31), which is an appropriate method to answer their research question.	
3. Were the subjects recruited in an acceptable way?	☒ Yes	☐ No	☐ Can't tell	The authors specify that they used the Dillman et al. (2014) approach to survey recruitment, which is a validated comprehensive approach to virtual survey recruitment. The authors invited all "staff physicians and nurse practitioners" (p. 34) in the relevant departments at the two participating hospital sites within a defined time frame (2 months). Additionally, the authors specify that "residents and trainees were excluded" (p. 34) because they were seeking only the perspectives of experienced clinicians.	
4. Were the measures accurately measured to reduce bias?	☒ Yes	☐ No	☐ Can't tell	Objective data were collected using a 5-point Likert scale, which is an appropriate measurement tool for the research question. The survey design is adequately described (i.e., wording of questions) in the narrative, and the authors note that the survey tool is available upon request.	
5. Were the data collected in a way that addressed the research issue?	☒ Yes	☐ No	☐ Can't tell	Data collection setting (online) and method (survey) are justified. The data collection tool was reviewed and piloted prior to implementation. The results section (pp. 34-35) provides a fulsome representation of the data collected, supporting transparency.	
6. Did the study have enough participants to minimize the play of chance?	☐ Yes	☐ No	☒ Can't tell	The authors acknowledge their findings are not generalizable due to small sample size (n=58), low response rate (30.9%) and selection bias (based on urban academic hospital setting only). As a result, they were unable to identify statistically significant differences between groups, which limits the conclusions that can be drawn from this study. However, because the study was framed as an "online pilot study" (p. 31), this suggests that subsequent studies may be planned to contribute to the knowledge base.	
7. How are the results presented and what is the main result?				Demographic data were summarized. The remaining results are presented in two ways: (1) the relative importance of different features of HPV self-screening; (2) comparison between different clinical specialties (i.e., PCP vs. OB-GYN). The main result is that most respondents would offer their patients "HPV self-sampling for cervical cancer screening" (p. 38). There are statistically significant differences between PCPs' and OB-GYNs' opinions on HPV self-swabbing vs. Pap testing.	
8. Was the data analysis sufficiently rigorous?	☒ Yes	☐ No	☐ Can't tell	Descriptive analyses of the study sample are presented. Additionally, Chi-square testing was used to assess differences between clinician characteristics (specialty, age, etc.) and their perspectives on HPV self-sampling. All p-values are reported ($p < 0.05$ considered statistically significant).	
9. Is there a clear statement of findings?	☒ Yes	☐ No	☐ Can't tell	There is a clear statement of findings, which reflects the results as well as the limitations of the study (i.e., poorly generalizable due to selection bias).	
10. Can the results be applied to the local population?	☐ Yes	☐ No	☒ Can't tell	The authors adapted the original survey tool developed by Mao et al. (2017) for the Canadian context. However, importantly, the study site was two large urban hospitals in Toronto. It is unlikely that this study reflects the experiences and perspectives of clinicians in northern BC.	
11. How valuable is the research?				The authors piloted the use of an adapted survey tool for use in a Canadian context. They also acknowledge that additional research (i.e., with a larger, more diverse sample) is needed.	
Overall Appraisal	☐ Low quality		☐ Medium quality		☒ High quality

(CASP, 2024a)

Appendix F

Data Extraction Summaries

Article	Bohn, J. A., Fitch, K. C., Currier, J. J., & Bruegl, A. (2022). HPV self-collection: What are we waiting for? Exploration of attitudes from frontline healthcare providers. *International Journal of Gynecological Cancer, 32*(12), 1519–1523. https://doi.org/10.1136/ijgc-2022-003860		
Study Location	Oregon, US	**Sample Size**	N=18
Provider Types	☒ FP ☒ OB-GYN ☒ Midwife ☐ PA ☒ NP ☐ Other: ☐ Nurse	**Practice Setting(s)**	☒ Aboriginal health organization ☒ General practice ☒ Academic health center ☐ Hospital ☒ Community health center ☒ Private practice ☐ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☐ HPV, self-collected, at home, kit pick-up in-person ☐ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Unspecified
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	Provider knowledge and attitudes
Study Design	Qualitative	**Overall Appraisal**[1]	Medium quality
Relevant Context	• At the time of publication, American guidelines were available to support HPV testing for CCS, but only for provider-collected specimens, not self-collected. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** "Nearly all providers stated they will offer HPV self-collection to most of their patients once available" (p. 1519) **Benefits of self-collection** • Effective for reaching "inadequately screening populations" (p. 1519). • Preferred by patients (especially younger patients). • Increased access for geographically isolated patients. • Potential value in sustaining CCS in the context of disruptions to health care, as was seen with the COVID-19 pandemic. **Risks of self-collection** • Concerns related to accuracy and sensitivity of test, and validity of results. • Missed opportunity for other components of a physical exam. • Confusion regarding patient eligibility criteria. • Insufficient infrastructure (e.g., kit availability, lab processing availability/readiness, clinical and administrative support for patient and provider questions). **Facilitators of implementation** • Additional evidence demonstrating non-inferiority of self-collection. • National guidelines would support provider confidence in use of self-collection. **Barriers to implementation** • Practice culture: some providers expressed "hesitation to relinquish control of cervical cancer screening" (p. 1521). • Competing interests: time constraints, prioritization of other acute care concerns (including patient priorities and provider priorities). • Compensation model: "Our practice only gets paid when we see patients face to face. And so, until the payment structure is such that there's infrastructure payments that come in on a regular basis to do all of the work that's not fee for service, face-to-face work, then this will always sit on the back burner. And we'll get to it when we get to it, but it won't be front and center until it's part of the basic way that primary care clinicians are paid." (p. 1521)		
Significance to RQ	• Providers have mixed views of how they think patients will perceive self-collection (i.e., some think that patients will be keen to have an alternative to Pap tests, others think patients will still prefer clinician-collected samples). This relates to a theme in this IR related to perceived patient concerns that become articulated as provider concerns.		

Article	Brennan, L., Adekunle, T., Kasting, M., Forman, M. R., Champion, V., & Rodriguez, N. M. (2024). Factors associated with clinician willingness to adopt HPV self-sampling and self-testing for cervical cancer screening. *Journal of Clinical and Translational Science, 8*(1), Article e118. https://doi.org/10.1017/cts.2024.604		
Study Location	Indiana, Kentucky, Ohio, Michigan, US (collectively referred to as "Midwest")	**Sample Size**	248 surveys, 23 interviews
Provider Types	☒ FP ☐ Midwife ☒ NP ☐ Nurse ☐ OB-GYN ☐ PA ☒ Other: Internist, Oncologist	**Practice Setting(s)**	☐ Aboriginal health organization ☐ Academic health center ☒ Community health center ☐ Gender-diverse clinic ☒ General practice ☒ Hospital ☒ Private practice ☒ Other: Unspecified
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☐ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☒ Other: HPV point-of-care testing ("self-testing")	**Specific Patient Population**	Unspecified
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	"which clinician characteristics are associated with willingness to adopt HPV self-sampling and self-testing?" (p. 2)
Study Design	Mixed methods	**Overall Appraisal**[1]	High quality
Relevant Context	• This study includes provider perspectives on HPV self-collection for CCS as well as "patient-operated rapid HPV tests (self-testing)" (p. 1), which, at the time of publication, are currently under development. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** The majority of providers expressed support for using self-collection (83%) in the clinic or at home (52%). **Benefits of self-collection** • Opportunistic CCS: providers can offer CCS to eligible patients when they present for different health needs. • Removes concern related to gender discordance previously documented in the literature (i.e., patients tend to prefer female providers for Pap tests). The authors suggest that this would translate to increased access to CCS for patients of male providers who are able to access CCS without need for pelvic exam performed by male provider. **Risks of self-collection** • There is the potential to miss lesions or other signs of pathology when a pelvic exam is not performed. • Missed opportunity for provider to perform a "complete physical exam and complete well-woman's exam" (p. 5). • Missed opportunity for provider to gain more health history, identify other screening needs, and build therapeutic relationship/trust. **Facilitators of implementation** • Male providers tended to be more supportive of self-collection than their female counterparts. The authors attribute this to discomfort experienced by male providers and female patients undergoing pelvic exams. **Provider characteristics** • Primary care providers were 3.16 times more likely to support self-collection than OB-GYN and internal medicine specialists. • Support for self-collection at home was positively associated with rural practice setting (as compared to urban setting). • Providers' previous experience with self-collection for other applications (e.g., FIT, COVID testing) informed their attitudes towards self-collection. Providers who had previous positive experiences were more likely to support self-collection for CCS. Conversely, providers who had previous negative experiences "had more reservations" (p. 9) about the application of self-collection to CCS.		
Significance to RQ	• "Clinicians constitute a key group whose attitudes, beliefs, and practices are consequential for primary and secondary HPV prevention" (p. 2) • "Clinicians are a key stakeholder group for the implementation of novel approaches to screening" (p. 8)		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Creagh, N. S., Zammit, C., Brotherton, J. M., Saville, M., McDermott, T., Nightingale, C., & Kelaher, M. (2021). Self-collection cervical screening in the renewed National Cervical Screening Program: A qualitative study. *Medical Journal of Australia, 215*(8), 354–358. https://doi.org/10.5694/mja2.51137		
Study Location	Victoria, Australia	**Sample Size**	N=18
Provider Types	☒ FP ☐ OB-GYN ☒ Midwife ☐ PA ☒ NP ☐ Other: ☐ Nurse	**Practice Setting(s)**	☒ Aboriginal health organization ☒ General practice ☐ Academic health center ☐ Hospital ☒ Community health center ☒ Private practice ☒ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☐ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Unspecified
		Implementation Stage	☐ Pre ☒ Post
		Primary Outcome	"acceptability [among providers] of the self-collection cervical screening pathway" (p. 354)
Study Design	Qualitative	**Overall Appraisal**[1]	High quality
Relevant Context	• Shortly before data collection, national guidelines for cervical screening changed: from patients receiving a Pap once every 2 years to HPV-based screening once every 5 years. • In Australia, HPV self-collection must be facilitated by a primary care provider; the provider determines whether the patient meets eligibility criteria and arranges for specimen self-collection. This workflow differs from other jurisdictions in which patients can request an HPV self-collection kit without needing to contact their primary care provider.		
Findings	**Overall:** Self-collection was "highly acceptable" (p. 354) to most study participants. **Benefits of self-collection** • "a progressive change" (p. 356) from traditional clinician-collected cytology (i.e., Pap smears). • effective way to reengage patients who had previously declined clinician-collected tests for CCS, or to engage new patients who have never completed CCS. **Barriers to implementation** • Lack of awareness of self-screening amongst primary care providers, including evidence for validity of the test. • Belief that self-collection is inferior to traditional clinician-collected specimen. • Increased workload for providers/clinic staff to determine patient eligibility (i.e., change in screening frequency without consideration of administrative implications). • Eligibility criteria for self-collection was described as too "inflexible" and "narrow" (p. 357). • Ambiguity within existing clinical practice guidelines regarding provider responsibilities in facilitating self-collection (i.e., must collection be completed in-clinic or can patients take kit home?). **Recommendations** • Need resources for providers to support integration of self-collection into routine practice, including supports for identifying patients in need of CCS and clarity regarding eligibility and provider responsibility.		
Significance to RQ	• Because all options for CCS (including self-collection) are facilitated through primary care providers in Australia, their knowledge and attitudes play an important role in whether and how patients engage in CCS. • Providers who are not supportive of HPV self-collection for the purpose of CCS may limit the options available to their patients, while providers who are supportive of its use are more likely to offer it as an option for eligible patients. • According to patients, the provider's "approach" (p. 355) to discussing options for CCS was the strongest predictor of whether patients agreed to CCS and which modality they preferred (i.e., clinician-collected or self-collected).		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States

[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

<table>
<tr><td>Article</td><td colspan="3">Fontenot, H. B., Fuzzell, L., Brownstein, N. C., Lake, P., Michel, A., Vadaparampil, S. T., & Perkins, R. B. (2024). Health care provider willingness to recommend self-collected tests for human papillomavirus: A mixed methods examination of associated factors. Women's Health Issues, 34(5), 506–517. https://doi.org/10.1016/j.whi.2024.05.005</td></tr>
<tr><td>Study Location</td><td>US (national)</td><td>Sample Size</td><td>1251 surveys, 56 interviews</td></tr>
<tr><td>Provider Types</td><td>☒ FP
☒ Midwife
☒ NP
☐ Nurse
☒ OB-GYN
☒ PA
☒ Other: Internist</td><td>Practice Setting(s)</td><td>☐ Aboriginal health organization
☒ Academic health center
☒ Community health center
☐ Gender-diverse clinic
☒ General practice
☒ Hospital
☒ Private practice
☐ Other:</td></tr>
<tr><td rowspan="3">Screening Modalities Discussed</td><td rowspan="3">☒ Traditional Pap
☐ HPV, clinician-collected
☒ HPV, self-collected, in-clinic
☒ HPV, self-collected, at home, kit pick-up in-person
☐ HPV, self-collected, at home, kit pick-up via mail
☐ Other:</td><td>Specific Patient Population</td><td>Unspecified</td></tr>
<tr><td>Implementation Stage</td><td>☒ Pre ☐ Post</td></tr>
<tr><td>Primary Outcome</td><td>Provider "attitudes (perceived benefits and concerns) toward using human papillomavirus self-collection for cervical cancer screening" (p. 506)</td></tr>
<tr><td>Study Design</td><td>Mixed methods</td><td>Overall Appraisal[1]</td><td>High quality</td></tr>
<tr><td>Relevant Context</td><td colspan="3">• Data collection took place prior to regulatory approval of HPV self-collection for CCS in 2021. At the time of data collection, CCS guidelines were being revised. With this in mind, survey questions were frames as hypothetical: "If HPV self-sampling were an available (FDA-approved) option for cervical cancer screening, would you recommend that patients who are due for cervical cancer screening and do not have any gynecological symptoms, utilize self-sample HPV tests instead of undergoing a speculum examination?" (p. 508)
• In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.</td></tr>
<tr><td>Findings</td><td colspan="3">Overall: 62% of survey respondents would potentially be willing to recommend self-collection (33.4% definitely or probably + 28.6% maybe; p. 510). Additionally, there was overwhelming support of the use of self-collection in special populations (i.e., "persons with a history of trauma, gender minorities, and others for whom speculum examinations are difficult" (p. 511)).
Benefits of self-collection
• Seen as less invasive and more patient-centred.
• Increased access to CCS for specific patient populations:
  ○ 58.8% of providers think self-collection will increase access to CCS for those with geographic/travel barriers and those who cannot take time away from competing priorities (e.g., stay at home moms).
  ○ 63.7% […] with 'challenging' pelvic exams (e.g., "with a health condition or trauma history"; p. 510).
  ○ 59.2% […] who cannot tolerate speculum/pelvic exam due to anatomical variations (e.g., "vulvar or vaginal conditions"; p. 510).
  ○ 60.0% […] with physical disability or mobility challenges.
  ○ 50.2% […] who are uncomfortable with exam because they identify as nonbinary or transgender.
Risks of self-collection
• 59.6% of providers have concerns about accuracy and adequacy of specimens collected by patients.
• Concern about missing pertinent exam findings due to not examining the patient.
• Belief that patients cannot or will not engage in self-collection.
• 60.0% of providers believe that patients who participate in HPV self-collection at home would be less likely to return their specimen and/or follow-up after abnormal results.
• Providers perceive increased workload without adequate compensation: "the prescription is being written by the provider, patients are being brought to by the provider, but the revenue is being shifted to the pharmaceutical company" (p. 513).
Facilitators of implementation
• Providers are already familiar with patient self-collection for vaginitis testing and testing for group B streptococcus in pregnancy.
• Openness to adoption when guidelines are available: "I think it's a great addition and whether it should be routinely used, I would wait for further guidance" (p. 513). "Providers with ambivalent attitudes focused on educational factors, the need for and guidelines and protocols for practice, and national endorsements" (p. 511)
• Location of specimen self-collection is an important consideration: 43.6% of survey respondents "would offer self-collection either at home or in the office, depending on patient preference, 22.3% would offer self-collection only in the office, and 11.0% only at home" (p. 510).
•</td></tr>
</table>

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States

[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

	Barriers to implementation • Providers may not understand technical aspects of the test and how it differs from clinician-collected cervical tests: "A few [providers] expressed that the patient would not be able to reach the cervix, which underscored confusion related to the self-sample; reaching the cervix is not required because exfoliated cervical cells are collected from the vagina" (p. 511). **Provider characteristics** • Male providers were 1.53 times more likely than female providers to be willing to recommend self-collection. • OB-GYN were least likely to recommend self-collection: o "Advanced practice providers" (NP, Certified nurse midwife, PA) were 1.53 times more likely than OB-GYNs to be willing to recommend self-collection (p. 510) o Internal medicine physicians were 6.26 times more likely than OB-GYNs to be willing to recommend self-collection (p. 510) o Family medicine physicians were 5.83 times more likely than OB-GYNs to be willing to recommend self-collection (p. 510) **Recommendations** • 'Very important" considerations as reported by at least 70% of survey respondents: o Ability of patient to obtain adequate sample o Acceptability of self-collection to patients and providers o Insurance coverage o Recommendations from professional organizations (p. 510)
Significance to RQ	• Widespread implementation of HPV self-collection will require practice-specific considerations and adaptations. This mixed methods study provides specialty-specific insights into what information and infrastructure different providers are seeking.

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Katz, M. L., Zimmermann, B. J., Moore, D., Pasket, E. D., & Reiter, P. L. (2017). Perspectives from health-care providers and women about completing human papillomavirus (HPV) self-testing at home. *Women & Health, 57*(10), 1161–1177. https://doi.org/10.1080/03630242.2016.1243608		
Study Location	Ohio, US	**Sample Size**	N=28
Provider Types	☒ FP ☐ OB-GYN ☐ Midwife ☐ PA ☒ NP ☐ Other: ☒ Nurse	**Practice Setting(s)**	☐ Aboriginal health organization ☐ General practice ☐ Academic health center ☐ Hospital ☒ Community health center ☐ Private practice ☐ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☐ HPV, self-collected, in-clinic ☐ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Residents of Appalachian Ohio county (a region notable for socioeconomic disadvantage, geographic isolation).
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	"perceived acceptability of mailed HPV self-tests" (p. 1)
Study Design	Qualitative	**Overall Appraisal**[1]	High quality
Relevant Context	• Study participants were asked about the hypothetical use of mail-based self-collection because at-home HPV self-collection had not yet been approved in this jurisdiction at the time of data collection. As a result, the study explores the proposed use of HPV self-collection in conjunction with Pap testing. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** Healthcare providers consider the use of HPV self-collection to be an acceptable approach to CCS for patients in Appalachian Ohio. **Benefits of self-collection** • Self-collection could be used to reengage patients with health services, broadly. The approach described in this study would involve self-collection kits mailed to patients, and interested patients bringint their completed kits to a clinical facility, which would provide an opportunity for addressing other health concerns. • Mail-based delivery of self-collection kits is a way to address geographic barriers to CCS access in rural areas. **Risks of self-collection** • Potential for inaccurate screening results due to user error (i.e., patients not completing the test properly). • Pre-existing distrust of the medical system by patients in Appalachian Ohio; unexpectedly receiving a CCS kit in the mail may raise suspicion about purpose of the test. • Physical harm to patients: providers feared that part of the self-collection device would break off and be retained inside the patient. **Barriers to implementation** • Low levels of health literacy in the target population. **Recommendations** • To address concerns related to mistrust, low health literacy, and to prevent user error, the authors highlight the need for written resources that clearly articulate the importance of CCS and explain how to complete the self-collection process.		
Significance to RQ	• While the distribution of self-collection kits by mail has the potential to reduce geographic barriers to CCS, the approach proposed herein is problematic and may be seen as misleading and unethical. The proposed process requires that patients attend a clinic to complete a Pap test and receive their HPV results because HPV self-collection had not yet been approved for CCS. It seems that having patients attend an in-person medical visit and Pap test negates the potential benefits of doing the test remotely. Additionally, without knowing how the self-collection process is described to patients, the reader is unable to determine whether the practice is misleading patients (i.e., is it clear that patients will need a Pap test in addition to the self-collected HPV test?). • The authors' description of "withholding the HPV self-test results to capitalize on women's related anxiety as a method to bring women into the office" (p. 7) is very concerning and certainly not patient-centred.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Le, D., Ciceron, A. C.., Jeon, M. J., Gonzalez, L. I., Jordan, J. A., Bordon, J., & Long, B. (2022). Cervical cancer prevention and high-risk HPV self-sampling awareness and acceptability among women living with HIV: A qualitative investigation from the patients' and providers' perspectives. *Current Oncology, 29*(2), 516–533. https://doi.org/10.3390/curroncol29020047		
Study Location	Washington DC, US	**Sample Size**	N=10
Provider Types	☒ FP ☐ OB-GYN ☐ Midwife ☐ PA ☒ NP ☐ Other: ☐ Nurse	**Practice Setting(s)**	☐ Aboriginal health organization ☐ General practice ☐ Academic health center ☐ Hospital ☐ Community health center ☐ Private practice ☐ Gender-diverse clinic ☒ Other: Unspecified
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☐ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Women living with HIV in urban Washington-Baltimore Metropolitan Area.
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	Awareness; feasibility and acceptability of self-sampling
Study Design	Qualitative	**Overall Appraisal**[1]	High quality
Relevant Context	• The use of HPV screening for the purpose of CCS in patients 25 years and older was approved in the US in 2014; however, this did not include HPV self-collection. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** Providers expressed "mixed opinions" (p. 523) about the use of self-collection for CCS in women living with HIV. **Benefits of self-collection** • Potential to increase patient knowledge of link between high risk-HPV and cervical cancer. • Seen as more convenient for patients. • Allows for CCS without compromising patient privacy. • Increase access to CCS for patients with "gender dysphoria or a history of sexual abuse" (p. 523) **Risks of self-collection** • Inaccurate results due to "incorrect use of the kit" (p. 523). • For take-home kits, concern that patients would not return kit promptly or at all. **Facilitators of implementation** • Providers have familiarity with "self-sampling" (p. 523) as it is used for STI testing and colorectal cancer screening (i.e., FIT test). **Barriers to implementation** • Insufficient capacity for follow-up of abnormal test results (i.e., increase in access to screening without corresponding increase of available treatment). • Lack of guidance regarding processes: can patients take kits home or must they be completed in-clinic?, how long are kit valid?, how best to communicate results? • Increased administrative workload for clinic staff (i.e., coordinating kit pick-up and drop-off).		
Significance to RQ	• Providers recognized the impact of their role in recommending or endorsing screening practices. Providers also identified the potential for their bias on patients' health practices and decision-making. • The authors clearly describe the link between provider attitudes towards HPV self-collection and impacts on patient care: "Since providers of health care and social services directly influence their patients'/clients' decision making, health-seeking behaviors, and access, their perspectives will undoubtedly influence the acceptability and feasibility of HR-HPV self-sampling." (p. 524)		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Le Goff, J., Le Duc-Banaszuk, A.-S., Lefeuvre, C., Pivert, A., Ducancelle, A., De Pauw, H., Arbyn, M., Vinay, A., & Rexand-Galais, F. (2023). Acceptability to healthcare professionals of home-based HPV self-sampling for cervical screening: A French qualitative study conducted in an area with low access to health services. *Cancers, 15*(21), Article 5163. https://doi.org/10.3390/cancers15215163		
Study Location	Mayenne & Sarthe, Pays de la Loire, France	**Sample Size**	N=59
Provider Types	☒ FP ☒ OB-GYN ☒ Midwife ☐ PA ☐ NP ☐ Other: ☐ Nurse	**Practice Setting(s)**	☐ Aboriginal health organization ☐ General practice ☐ Academic health center ☐ Hospital ☐ Community health center ☐ Private practice ☐ Gender-diverse clinic ☒ Other: Unspecified
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☐ HPV, self-collected, at home, kit pick-up via mail ☒ Other: HPV urinary self-collection	**Specific Patient Population**	Residents of 2 geographic regions with low physician density and low screening rates.
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	"opinions of primary healthcare professionals on self-sampling" (p. 3)
Study Design	Qualitative	**Overall Appraisal**[1]	Medium quality
Relevant Context	• Since 2019, the French National Authority for Health has recommended vaginal self-sampling (VSS) as an alternative to clinician-collected samples for the purpose of CCS. • In addition to VSS, this study also explores potential use of urinary self-sampling (USS), which has been demonstrated to be effective in detecting precancerous and cancerous lesions of the cervix but was not being used in practice at the time of publication. • Providers who are involved in CCS in France include OB-GYNs, GPs), and midwives. At the time of publication, the NP role was not recognized nationally.		
Findings	**Overall:** Health care providers consider self-collection to be an acceptable approach to CCS in geographic regions with low screening rates. **Benefits of self-collection** • Increased access to CCS in geographically underserved areas (decreases transportation challenges, avoids wait times to see provider in-person). • Simpler, less medicalized approach that "avoids intrusive and invasive nature of [pelvic] examinations" (p. 9). • Less fear, embarrassment, and more privacy for patients. • Improves access for patients who are not comfortable with male provider doing Pap test. • Patient empowerment. **Risks of self-collection** • Seen as less reliable test. • Patients will opt-out of other components of the physical exam or be more reluctant to receive other care in-person. **Facilitators of implementation** • Familiarity with vaginal self-sampling (i.e., self-collection) as it is currently used for STI testing. **Barriers to implementation** • Competing priorities in primary care practices: "There's a distinction to be made between prevention, emergencies, and medical follow-up" (p. 6); "We're very busy with other issues; prevention takes second place" (p. 6). • No coordinated approach to self-collection kit distribution; patients may request kits from select labs only if they are aware of this option. • Low levels of health literacy in the target population. • Perception that some patient groups may not be able to complete test: older patients "just don't have that knowledge of their anatomy" (p. 7), obese patients may not be able to reach cervix (p. 8).		
Significance to RQ	• Perspectives from geographic context with low provider density outside of North America. • Concerns raised by providers regarding cervical vs. vaginal self-collection might illustrate a lack of familiarity or knowledge about self-collection for CCS (i.e., patients swab vagina, not cervix). While this was not highlighted by Le Goff et al. (2023), other authors cited in this IR have pointed out the need for provider education so that they may support patients in completing self-collection comfortably, effectively, and safely.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Mao, C., Kulasingam, S. L., Whitham, H. K., Hawes, S. E., Lin, J., & Kiviat, N. B. (2017). Clinician and patient acceptability of self-collected human papillomavirus testing for cervical cancer screening. *Journal of Women's Health, 26*(6), 609–615. https://doi.org/10.1089/jwh.2016.5965		
Study Location	Seattle, WA, USA	**Sample Size**	N=118
Provider Types	☒ FP ☐ Midwife ☒ NP ☐ Nurse ☒ OB-GYN ☒ PA ☒ Other: Internist	**Practice Setting(s)**	☐ Aboriginal health organization ☒ Academic health center ☐ Community health center ☐ Gender-diverse clinic ☐ General practice ☐ Hospital ☐ Private practice ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☐ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Unspecified
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	Provider attitudes towards home-based HPV self-collection for CCS.
Study Design	Cross-sectional	**Overall Appraisal**[1]	Low quality
Relevant Context	• The shift from cytology-based CCS to primary HPV testing was supported by national guidelines in the US at the time of publication. However, only clinician-collected samples were approved. The study explores HPV self-collection as a hypothetical area for expanding CCS. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** 78% of providers would recommend HPV self-collection but only "if the test had qualities such as high sensitivity and cost effectiveness" (p. 609). **Benefits of self-collection** • Increase CCS rates. • Potential to reduce costs. **Risks of self-collection** • Decrease opportunities to address other health concerns and decline in other preventative screening activities. o 75.7% of providers indicated "missed opportunity to address other health issues" (p. 613, table 5) was a reason to not recommend home HPV testing. o Patients and providers worry that a shift away from in-clinic care will lead to patients having decreased access to their healthcare provider for other concerns. • Inability for patients to adequately collect sample. • Inaccurate test result. • Perception that patients will be less likely to complete necessary follow-up. **Facilitators of implementation** • Providers indicated that patient acceptability is more important than clinician acceptability (93.2% vs 72.9%; p. 612). • Zero providers indicated that "provider should perform test" (p. 613, table 5) was a reason to not recommend home-based HPV self-collection. **Barriers to implementation** • Recent changes to CCS frequency guidelines were met with "significant push back by clinicians" (p. 610). Revisions to CCS that further reduce face-to-face contact with providers are likely to be met with additional skepticism. **Recommendations** • The development of provider education, and clinical pathways to determine eligibility and coordinate follow-up are important considerations for providers.		
Significance to RQ	• As a seminal study into provider perspectives on HPV self-collection for CCS, this article provides insights into which test characteristics were most important to providers. Subsequent efforts to implement self-collection have been impacted by these early findings. However, many of the concerns identified by providers persist into more recent literature.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Pourette, D., Cripps, A., Guerrien, M., Desprès, C., Opigez, E., Bardou, M., & Dumont, A. (2022). Assessing the acceptability of home-based HPV self-sampling: A qualitative study on cervical cancer screening conducted in Reunion Island prior to the RESISTE trial. *Cancers, 14*(6), Article 1380. https://doi.org/10.3390/cancers14061380		
Study Location	Reunion Island (French territory in Indian Ocean)	**Sample Size**	N=20
Provider Types	☒ FP ☒ Midwife ☐ NP ☐ Nurse ☒ OB-GYN ☐ PA ☐ Other:	**Practice Setting(s)**	☐ Aboriginal health organization ☐ Academic health center ☒ Community health center ☐ Gender-diverse clinic ☒ General practice ☒ Hospital ☒ Private practice ☒ Other: Correctional Centre
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☐ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Socioeconomically disadvantaged, geographically isolated
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	Health professionals' opinion and knowledge of HPV self-sampling
Study Design	Qualitative	**Overall Appraisal**[1]	Medium quality
Relevant Context	• In 2020, clinician-collected HPV testing replaced Pap tests as the primary method for CCS screening in France. At the time of publication, HPV self-collection had been proposed as an alternative to clinician-collection testing, but had not been widely implemented. • Reunion Island is a "French overseas department" (p. 2) where the prevalence of cervical cancer is 2-3 times higher than rates of mainland France. Cancer screening on Reunion is described as fragmented, which the authors attribute to the territory's "medical pluralism" (p. 3), a legacy of its history as a French colony.		
Findings	**Overall:** Providers are supportive of at-home HPV self-collection in particular patient populations (e.g., poorly connected to care, reluctant to undergo Pap test, geographically isolated). **Benefits of self-collection** • Increase access to CCS for some patient populations: poorly connected to care, reluctant to undergo Pap test, geographically isolated. **Barriers to implementation** • Perceived disinterest from patients: "reluctance to touch one's intimate parts amongst women, in particular those less educated." (p. 13) **Facilitators of implementation** • On-demand telephone or on-site support for patients when completing their self-collection may lead to better (i.e., more accurate) results and more efficient screening. **Recommendations** • Need for outreach efforts to engage socially isolated patients. • Provider education about self-collection so that providers can (1) present all CCS options to patients and (2) teach patients how to complete self-collection.		
Significance to RQ	• Relevance to Indigenous communities in Canada who a history of colonization, experience poverty and socioeconomic disadvantages including insufficient access to medical services, as well as disproportionately high rates of cervical cancer and low rates of screening.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Rodriguez, N. M., Brennan, L. P., Claure, L., Balian, L. N., Champion, V. L., & Forman, M. R. (2023). Leveraging COVID-era innovation for cervical cancer screening: Clinician awareness and attitudes toward self-sampling and rapid testing for HPV detection. *PLoS ONE, 18*(3), Article e0282853. https://doi.org/10.1371/journal.pone.0282853		
Study Location	Indiana, USA	**Sample Size**	224 surveys, 20 interviews
Provider Types	☒ FP ☒ OB-GYN ☐ Midwife ☐ PA ☒ NP ☒ Other: Internist ☐ Nurse	**Practice Setting(s)**	☐ Aboriginal health organization ☒ General practice ☐ Academic health center ☒ Hospital ☒ Community health center ☒ Private practice ☐ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☒ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☒ Other: HPV point-of-care testing	**Specific Patient Population**	Unspecified
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	clinician awareness, perceived benefits and limitations, and willingness to adopt point-of-care HPV testing, patient self-sampling, and rapid HPV self-testing with self-collected samples
Study Design	Mixed methods	**Overall Appraisal**[1]	Medium quality
Relevant Context	• The use of HPV testing for CCS has been available in the US since 2018, however HPV self-collection was not widely implemented at the time of publication. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** 50% of providers supported the adoption of HPV self-collection for CCS. **Benefits of self-collection** • Increase CCS rates. ○ 72% of respondents believed self-collection would "greatly or somewhat" improve CC screening "coverage" and/or follow-up (p. 10). • Increase patient comfort, convenience. **Risks of self-collection** • Inaccurate results due to user error or faulty test kit. • Decreased opportunity to examine/discuss non-HPV concerns **Facilitators of implementation** • 74% of respondents were using (or had used) or were familiar with self-collection for other applications: FIT, STI, BV. • Post-COVID expanded telehealth infrastructure and increased patient/provider familiarity and comfort with virtual care. • Increased patient demand for self-collection options. **Barriers to implementation** • Assumption that patients will not return kits.		
Significance to RQ	• This study connects patient expectations, provider perspectives, and diagnostic innovations with the undeniable impacts of the COVID-19 pandemic on health care delivery. • Lessons from COVID-19 testing may be applied to other screening or diagnostic testing, including both testing technology and workflow processes. • Providers' previous experiences with COVID-19 point-of-care testing, whether positive or negative, shape their perspectives on other applications of self-collection and emergent point-of-care testing for CCS.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Xiong, S., Lazovich, D. A., Hassan, F., Ambo, N., Ghebre, R., Kulasingam, S., Mason, S. M., & Pratt, R. J. (2022). Health care personnel's perspectives on human papillomavirus (HPV) self-sampling for cervical cancer screening: A pre-implementation, qualitative study. *Implementation Science Communications, 3*(1), Article 130. https://doi.org/10.1186/s43058-022-00382-3		
Study Location	"Midwest" US	**Sample Size**	N=30
Provider Types	☒ FP ☒ OB-GYN ☐ Midwife ☒ PA ☒ NP ☐ Other: ☐ Nurse	**Practice Setting(s)**	☐ Aboriginal health organization ☐ General practice ☒ Academic health center ☒ Hospital ☒ Community health center ☐ Private practice ☐ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Unspecified
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	"views on HPV self-sampling and its potential implementation." (p. 1)
Study Design	Qualitative	**Overall Appraisal**[1]	High quality
Relevant Context	• The use of HPV screening for the purpose of CCS was approved in the US in 2018. The American Cancer Society published guidelines for CCS using HPV testing in 2020. • In Canada, CCS is universally available to eligible patients at no cost. However, in the US, health insurance coverage and out-of-pocket payment are important determinants of patient engagement in CCS.		
Findings	**Overall:** Perception that "support for HPV self-sampling is growing" (p. 1), but provider skepticism persists. **Benefits of self-collection** • Higher patient acceptability: more convenient, less invasive, offers more comfort, privacy. • Perception that younger patients will readily adopt, therefore may increase CCS rates in younger population. • Patient-centred tool to reengage previously under-screened patients: "empower and cultivate diverse patients' interest and proaction in their own health" (p. 6). • "Important trauma-informed CCS tool given the full control patients would be able to have over their own screening experiences" (p. 6) • "Potential to narrow racial and ethnic disparities in cervical cancer screening" (p. 6) by reducing barriers for those with "limited English proficiency, low health literacy, and/or financial and structural barriers" (p. 5). • "Opportunistic advantage" (p. 6) of clinic-based self-collection: providers can readily offer CCS to patients when they may be in the clinic for a different purpose. • More efficient: "reducing [provider] stress and saving clinicians more time to conduct other clinical interaction" (p. 5) **Risks of self-collection** • Concern that patient will not see self-collection as 'as valid' as clinician-collected specimen. • User error would lead to repeat testing, increased patient burden, and increased cost. • Increases barriers to CCS, and therefore health disparities, in populations for whom self-collection is physically challenging: patients with "variable sexual anatomies, such as those with circumcisions and imperforate hymens" (p. 7) or with limited dexterity or mobility. • Potential for over-testing or over-screening leading to increased costs. **Barriers to implementation** • Lack of regulatory approval was the biggest barrier to implementation identified by providers. • Perceived lack of evidence around test's validity (sensitivity and specificity; accuracy of result) and viability. • Unclear who would be responsible for cost: not covered by the National Breast and Cervical Cancer Early Detection Programs or health plans at the time of publication. • Disparate opinions on role of self-collection: is it an alternative to Pap test for all patients, or should it only be used for those that decline/refuse Pap? **Recommendations** • Print or multimedia resources to support patient use of self-collection kits must be available for those with low literacy and non-English speakers. Otherwise, there is a risk for exacerbating existing CCS disparities based on race/ethnicity.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Significance to RQ	• The study presents a variety of pros and cons of HPV self-collection for CCS without clear consensus on whether providers support its use. This may reflect the breadth of modalities discussed. Each variation in CCS has its own benefits and drawbacks, so by comparing four different approaches to testing, the strength of the overall conclusion is diluted. • This article highlights the need for systems-level buy-in to ensure the successful implementation of HPV self-collection for CCS. While provider perspectives can directly impact patient interactions, endorsement from other parts of the healthcare system is also required. For example, regulating bodies, laboratory facilities, and clinical/practice organizations (e.g., American Cancer Society) must align to facilitate the use of self-collection.

Article	Zammit, C., Creagh, N., Nightingale, C., McDermott, T., Saville, M., Brotherton, J., & Kelaher, M. (2023, April 27). 'I'm a bit of a champion for it actually': Qualitative insights into practitioner-supported self-collection cervical screening among early adopting Victorian practitioners in Australia. *Primary Health Care Research & Development, 24,* Article e31. https://doi.org/10.1017/S1463423623000191		
Study Location	Victoria, Australia	**Sample Size**	N=18
Provider Types	☒ FP ☐ OB-GYN ☒ Midwife ☐ PA ☒ NP ☐ Other: ☒ Nurse	**Practice Setting(s)**	☒ Aboriginal health organization ☒ General practice ☐ Academic health center ☐ Hospital ☒ Community health center ☒ Private practice ☒ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☒ HPV, self-collected, at home, kit pick-up in-person ☒ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Unspecified
		Implementation Stage	☐ Pre ☒ Post
		Primary Outcome	"experiences of practitioners … who offered self-collection to their patients" (p. 1)
Study Design	Qualitative	**Overall Appraisal**[1]	High quality
Relevant Context	• Australia has a coordinated National Cervical Screening Program (NCSP) that was established in 1991. • In 2017, national guidelines introduced HPV testing as the primary means of CCS for patients aged 25 years and up. However, at the time of data collection, self-collection was "only available to people ≥ 30 years who were overdue for screening by ≥ 2 years or had never-screened and declined a clinician-collected test" (p. 1). • Australia has a "practitioner-supported model" (p. 2) of HPV self-collection for CCS, in which "[the test] must be ordered by a doctor or nurse practitioner who is responsible for follow-up" (p. 2).		

Findings	**Overall:** "Practitioners were overwhelmingly supportive of self-collection cervical screening" (p. 1)
	Benefits of self-collection
	• Patient-centred approach:
	  ○ Patient choice: "Practitioners saw their role as providing eligible participants with a choice between a clinician-collected or self-collected test, noting that the availability of self-collection centred around 'participant's choice'" (p. 3).
	  ○ Empowering for patients (perhaps particularly for those who identify as Aboriginal and Torres Strait Islander; p. 3).
	• Potential to increase engagement of patients who were previously resistant/reluctant to engage in CCS.
	• Builds trusting therapeutic relationship by proactively determining the patient's eligibility for preventative CCS and offering choice, the provider demonstrates commitment to patient wellbeing
	Risks of self-collection
	• Relative to clinician-collected specimen, self-collection is seen as "lesser alternative" and "less optimal" (p. 3).
	• Increased burden on providers to determine eligibility for self-collection (i.e., because only approved for under-screened patients, onus is on provider to access CCS histories via national registry to determine eligibility).
	• Potential for waste based on prior experience with sub-optimal kit return when using mail-based delivery.
	Barriers to implementation
	• Lack of knowledge and awareness of self-collection among providers.
	• Concern regarding capacity for follow-up (i.e., have a well-established screening pathway, but now need to invest in expanding follow-up).		

Significance to RQ	• While self-collection may be seen as desirable by many patient groups, its availability is limited to under-screened patients. There is potential for providers, who recognize benefits of self-collection, to advocate for increased access. Provider attitudes are particularly in the Australian context due to their "practitioner-supported model" (p. 2) of accessing HPV self-collection.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.

Article	Zelli, J., Hum, S., Lofters, A., & Dunn, S. (2022). Clinician acceptability of self-collected human papillomavirus swabs as a primary cervical cancer screening method. *Canadian Family Physician, 68*(2), e31–e38. https://doi.org/10.46747/cfp.6802e31		
Study Location	Toronto, Canada	**Sample Size**	N=58
Provider Types	☒ FP ☒ OB-GYN ☐ Midwife ☐ PA ☒ NP ☐ Other: ☐ Nurse	**Practice Setting(s)**	☐ Aboriginal health organization ☐ General practice ☒ Academic health center ☒ Hospital ☒ Community health center ☐ Private practice ☐ Gender-diverse clinic ☐ Other:
Screening Modalities Discussed	☒ Traditional Pap ☐ HPV, clinician-collected ☒ HPV, self-collected, in-clinic ☐ HPV, self-collected, at home, kit pick-up in-person ☐ HPV, self-collected, at home, kit pick-up via mail ☐ Other:	**Specific Patient Population**	Unspecified
		Implementation Stage	☒ Pre ☐ Post
		Primary Outcome	knowledge and acceptability of and opinions about HPV self-screening
Study Design	Cross-sectional	**Overall Appraisal**[1]	High quality
Relevant Context	• At the time of publication, Canadian screening programs used cytology-based Pap testing. • The authors note that some provincial jurisdictions were working towards incorporating HPV screening as a primary approach to CCS, a shift that would open the door to self-collection.		
Findings	**Overall:** Most providers would offer HPV self-collection for CCS. **Benefits of self-collection** • Increased rates of CCS completion. • Decreased "pain and embarrassment" (p. 35) for patients. • Increased efficiency and "time savings" (p. 35) for providers and patients. **Risks of self-collection** • Missed opportunity to examine patient, "to visualize pathology" (p. 38). • Missed opportunity to review other health concerns or recommended screening. **Barriers to implementation** • Lack of familiarity with "HPV self-swabs as alternative to Pap testing" (p. 35): only 48.3% of respondents had "fair, good, or very good" current knowledge of self-collection despite 94.8% performing CCS at least weekly. **Provider characteristics** • The potential for "missed diagnosis of pathology" (p. 35) was more concerning in younger physicians and those newer to practice than in older and more experienced providers. • There was consensus amongst providers regarding the most important advantage of self-collection over Pap test: self-collection would mean more patients would complete CCS. • OB-GYNs reported that "time-saving for patients" was the most important attribute of self-collection, whereas primary care providers identified "decreased pain and discomfort for patients" as most important (p. 35).		
Significance to RQ	• As the only Canadian study included in this IR, this article provides more relevant insights than those in other jurisdictions. However, the timing of the article relative to current practice limits its applicability, especially in British Columbia, where self-collection is in use across the province.		

Abbreviations: CCS = cervical cancer screening; FP = family physician; HPV = human papillomavirus; NP = Nurse Practitioner; OB-GYN = Obstetrician-Gynecologist; PA = Physician Assistant; US = United States
[1] Please see critical appraisal summaries in Appendix E for explanation of quality rating.