

## What can research evidence tell us about barriers for cervical cancer services uptake by women living with HIV/AIDS and its mitigation strategies? Rapid Evidence Review

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### Key findings

Systematic reviews from developing countries identified two broad barriers to cervical cancer services uptake, namely, demand-side barriers and supply-side barriers.

The demand-side barriers includes lack of awareness, illiteracy, challenges related with geographic access, permission required from family or lacking social support, and inability to pay, embarrassment, and fear of the screening procedure or outcome.

The supply-side barriers includes health workforce shortages or absenteeism of service providers, lack of outreach services, lack of supplies or infrastructure needed for screening and follow up.

Effective strategies or interventions to mitigate the barriers that hinder cervical cancer services uptake included mostly of cervical cancer services integration with HIV/AIDS programs and interventions such as: call-recall program, health education, mobile screening, and interaction with healthcare providers, access to healthcare system, invitation, and making use of mobile technologies (telephone support)

### How this Rapid Evidence Review was prepared?

The methods used to prepare in this rapid evidence review were adapted from the SURE Rapid Response Service.

In this review, we have searched for relevant evidence related to barriers for cervical cancer services uptake by women living with HIV/AIDS and their mitigation strategies.

The evidence in this summary comes from systematic reviews and guidelines.

It was prepared based on structured searches of the literature and selected evidence-based healthcare databases (SUPPORT Summaries, PDQ-Evidence, Epistemonikos, Health systems evidence, Medline, Cochrane Library, and JBI database for systematic reviews).

### What is Rapid evidence Review?

Rapid evidence review addresses the needs of policymakers and program managers for research evidence that has been appraised and contextualized to a specific context in a matter of hours or days. This rapid evidence review goes beyond research evidence and integrates multiple types and levels of evidence

### Where did this Rapid Evidence Review come from?

This document was created in response to the request from TB/HIV Research Directorate of EPHI to synthesize the best available evidence related to barriers for cervical cancer services uptake by women living with HIV/AIDS and their mitigation strategies. It was prepared by the Knowledge Translation Directorate and TB/HIV Research Directorate, Ethiopian Public Health Institute.

**Included:** Key findings from high quality research

**Not included:** Recommendations and detailed descriptions

### Introduction

Human papillomavirus (HPV) infection is a well-established cause of cervical cancer. Cervical intraepithelial neoplasia (CIN) is a premalignant lesion that may exist at any one of three stages: CIN1, CIN2, or CIN3. If left untreated, CIN2 or CIN3 (collectively referred to as CIN2+) can progress to cervical cancer.

Cervical cancer is caused by sexually acquired infection with certain types of HPV among which the two HPV types (HPV 16 and 18) cause 70% of cervical cancers and pre-cancerous cervical lesions (WHO 2018a).

According to the global cancer statistics released in 2018, cancer of the cervix uteri is the third most

common cancer among women worldwide, with an estimated 569,847 new cases and 311,365 deaths (GLOBOCAN, 2018). The WHO global burden of disease estimate also puts cervical cancer as fourth most frequent cancer in women with an estimated 570,000 new cases in 2018 representing 7.5% of all female cancer deaths (WHO 2018a).

Cervical cancer is the second most common cancer in women living in less developed regions with 84% of the new cases worldwide in 2018, approximately 311,000 women died from cervical cancer; more than 85% of these deaths occurring in developing countries (WHO 2018a).

With the increase in cervical cancer morbidity and mortality in developing countries, concern has shifted to how much can be done to prevent this public health challenge especially in those who are immunocompromised. With the advent of HIV in most of these developing countries especially those in sub-Saharan Africa, the burden, incidence and mortality due to cervical cancer are increasing (Chirenje 2005; WHO 2018b). HIV/AIDS in most developing countries has resulted in high cervical cancer incidence, and because of this, cervical cancer has been classified as an AIDS-defining disease. HIV-seropositive women have been found to be at higher risk of HPV infection due to their immune-compromised status and that they are 2 to 12 times more likely to develop cervical precancerous lesions that lead to cervical cancer than HIV-negative women (Chirenje 2005; Clifford et al. 2005).

In Ethiopia, women at risk of cervical cancer (Female population aged  $\geq 15$  years) are about 31.5 million with an annual number of cervical cancer cases & deaths of 6,294 & 4,884, respectively. The prevalence of HPV 16 and/or HPV 18 among women with: normal cytology, low-grade cervical lesions (LSIL/CIN-1), high-grade cervical lesions (HSIL/CIN-2/CIN-3/CIS) and cervical cancer are 4.7%, 30.0%, 63.6% and 96.6%, respectively. According to the same, cervical cancer ranks as the second most frequent cancer among women between 15 and 44 years of age in Ethiopia (ICO/IARC Information Centre, 2018).

WHO recommends a comprehensive approach to cervical cancer prevention and control. The recommended set of actions include interventions across the life course and it should be multidisciplinary, including components of community education, social mobilization, vaccination, screening, treatment and palliative care.

There are three different types of screening tests that are currently recommended by WHO: HPV testing for high-risk HPV types, Visual Inspection with Acetic

Acid (VIA) and conventional (Pap) test and liquid-based cytology (LBC) (WHO 2018a).

Screening strategies differ among various countries. Some countries have population-based programs, where in each round of screening women in the target population are individually identified and invited to attend screening. This type of program can be implemented nationwide or only in specific regions of the country. However, regardless of the available screening methods and considerable evidence in reducing the burden of cervical cancer, epidemiological and health system challenges and constraints still exist in most developing countries like Ethiopia that make it difficult for some cervical cancer screening strategies and initiatives to be implemented. In addition, there is a lack of both opportunistic and organized systematic population-based screenings amongst HIV-seropositive women due to limited resources, resulting in uncoordinated screening with any available screening method (ICO/IARC Information Centre, 2018).

Screening is a very key strategy for the identification of pre-cancerous and cancerous stages of the cervix among the general female population aged 15-44 years and women living with HIV/AIDS. Although vaccination against HPV is only at its pilot state, data in Ethiopia show that there are no well-established programs for cervical cancer screening (ICO/IARC Information Centre 2018).

The purpose of this rapid review is therefore,

1. To summarize the best available evidence related to the determinant factors that affect cervical cancer services uptake by women living with HIV/AIDS, and
2. To inform policy makers with the best available effective interventions or strategies that improve cervical cancer services uptake by women living with HIV/AIDS.

## Methods

Search for relevant evidence related to the determinants of cervical cancer services uptake among women living with HIV/AIDS and the effective interventions that mitigate the barriers was conducted. The search for relevant systematic reviews was to summarize the findings in our review from similar settings in low and middle-income countries. The methodological quality of the included systematic reviews was assessed using AMSTAR. For similar systematic reviews (with the same PICO), the one with highest AMSTAR score was included. Based on the search, it was found highly relevant systematic reviews that provide evidence on the issues mentioned above. The summary of the findings from these systematic reviews are presented below:

## Review Findings

***Determinant factors that affect cervical cancer services uptake by women living with HIV/AIDS in Ethiopia:*** It was not possible to find direct evidence on determinants that hinder cervical cancer services uptake among women living with HIV/AIDS. However, high quality evidence from systematic reviews on the possible barriers that hinder cervical cancer services uptake including screening services (Asonganyi et al. 2013; Rahman et al. 2019) was found. These systematic reviews were from developing countries and possible barriers in these studies were classified as demand-side barriers and supply-side barriers or determinants. The demand-side barriers includes lack of awareness, illiteracy, challenges related with geographic access, permission required from family or lacking social support, and inability to pay. In another systematic review conducted in Uganda, embarrassment and fear of the

screening procedure or outcome were also mentioned as a demand-side barriers (Black et al. 2019). The supply-side barriers revealed by Asonganyi et al. (2013) and Rahman et al. (2019) include health workforce shortages or absenteeism of service providers, lack of outreach services, lack of supplies or infrastructure needed for screening and follow up services.

### ***Effective intervention strategies to mitigate barriers that hinder cervical cancer services uptake***

Nine relevant interventions that highlight effectiveness were retrieved and broadly thematized into two areas, namely, intervention focusing on cervical cancer services integration into HIV/AIDS programs, and interventions that help enhance cervical cancer screening. Below are summary of key findings, evidence review, and authors' conclusion (Table 1).

**Table 1: Key findings from best available evidence related to strategies or interventions to mitigate the barriers that hinder cervical cancer services uptake**

| Document type                                                                                      | Focus Area                                                                                                                                                   | Key findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Authors' Conclusion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Interventions that focus on services integration to enhance cervical cancer services uptake</b> |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Systematic Review (Sigfrid et al. 2017)                                                            | Integration of services of cervical cancer screening and treatment with HIV/AIDS healthcare services                                                         | <ul style="list-style-type: none"> <li>Three distinct models of integration:               <ul style="list-style-type: none"> <li>✓ <b>Model one:</b> integration within the same clinic through training of existing staff</li> <li>✓ <b>Model two:</b> integration through co-location of services</li> <li>✓ <b>Model three:</b> programs of integration through complex coordination across the care pathway.</li> </ul> </li> <li>Integration of cervical cancer services with HIV services using all models was feasible and acceptable to patients</li> <li>However long-term effectiveness of these interventions are unknown</li> </ul> | <ul style="list-style-type: none"> <li>The links between cervical cancer and HIV are a reminder that the needs of women living with HIV/AIDS are complex and often demand integrated solutions.</li> <li>Those settings with the highest burden of HIV are often those with less integrated care services and health systems structured around provision of care for acute conditions.</li> </ul>                                                                                                                           |
| Systematic reviews (Johnson et al. 2018)                                                           | Implementation strategies to improve cervical cancer prevention in SSA                                                                                       | <ul style="list-style-type: none"> <li>Visual inspection with Acetic Acid (VIA) was used as the main prevention method more frequently than HPV DNA/mRNA testing, Pap smear and HPV vaccine.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Authors highlight the need to diversified strategies that improve implementation for cervical cancer prevention programs.</li> </ul>                                                                                                                                                                                                                                                                                                                                                 |
| <b>Intervention that focus on improvement of screening</b>                                         |                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Systematic review & thematic synthesis (Chorley et al. 2017)                                       | cervical screening in the context of an organised call-recall program                                                                                        | <ul style="list-style-type: none"> <li><b>Two broad themes were identified:</b> <ol style="list-style-type: none"> <li>Should I go for screening? And</li> <li>Screening is a big deal.               <ul style="list-style-type: none"> <li>In considering whether to attend, women discussed the personal relevance and value of screening</li> <li>Women who had previously attended described how it was a big deal, physically and emotionally, and the varied threats that screening presents.</li> </ul> </li> </ol> </li> <li>Practical barriers affected whether women translated screening intentions into action</li> </ul>           | <ul style="list-style-type: none"> <li>The variation in women's understanding and perceptions of cervical screening suggests that interventions tailored to decisional stage may be of value in increasing engagement with the invitation and uptake of screening in those who wish to take part</li> <li>There is also a need for further research with women who have never attended screening, especially those who remain unaware or unengaged, as their perspectives are lacking in the existing literature</li> </ul> |
| Systematic review (Agide et al. 2018)                                                              | Effectiveness of health education interventions to increase cervical cancer screening uptake                                                                 | <ul style="list-style-type: none"> <li>Almost all levels of interventions boosted the screening uptake and the Pap test</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>The review indicated that health education interventions have immense contributions in boosting the screening uptake.</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |
| Systematic review (Greenwald et al. 2017)                                                          | Mobile screening units for the early detection of cancer                                                                                                     | <ul style="list-style-type: none"> <li>Mobile screening units can be an important health system component to expand screening coverage to rural or urban areas who fail to be reached by health promotion messages or lack medical insurance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Authors conclude that mobile screening units have served to expand access to screening in diverse context.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                |
| Systematic review (Glick et al. 2012).                                                             | Patient navigation with Telephone support vs lay health educators for cervical cancer screening, diagnosis and treatment for racial and/or ethnic minorities | <ul style="list-style-type: none"> <li>A moderate strength of evidence that telephone support with navigation increases the rate of screening for cervical cancer in minority population</li> <li>A low strength of evidence that education delivered by lay health educators with navigation increases the rate of screening for cervical cancer in minority population</li> </ul>                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Authors conclude that patient navigation with telephone support or education may be effective at increasing screening diagnosis and treatment among racial and ethnic minorities.</li> <li>Research is needed to determine the applicability of findings beyond the populations studied.</li> </ul>                                                                                                                                                                                  |
| Systematic review and qualitative meta-synthesis (Health et al., 2019)                             | Women's preferences and experiences of cervical cancer screening in rural and remote areas                                                                   | <ul style="list-style-type: none"> <li>Two themes modulate women's access to cervical cancer screening: interaction with healthcare providers and healthcare system access.</li> <li>Furthermore the review found that women frequently expressed issues around patient-centered care in their interaction with healthcare providers.</li> </ul>                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>The authors conclude the review as a foundation for tailoring intervention and programming to increase cervical cancer screening in women who reside in rural and remote areas.</li> <li>The reviewers also clarified the factors of patient-centred care that may be adopted to enhance the quality of care in these settings.</li> </ul>                                                                                                                                           |
| Cochrane database of systematic reviews (Everett et al., 2011) (n=38)                              | Interventions targeted at women to encourage (invitation letter) the uptake of cervical screening                                                            | <ul style="list-style-type: none"> <li>Invitation appears to be effective method of increasing uptake</li> <li>There is limited evidence to support the use of educational materials.</li> <li>Evidence was limited on secondary outcomes cost data.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>There is evidence to support the use of invitation letter to increase the uptake of cervical screening.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |
| Systematic review (Zhang et al., 2020). (n=8)                                                      | Mobile Technologies and Cervical Cancer Screening in Low- and middle-Income Countries                                                                        | <ul style="list-style-type: none"> <li>Of the eight selected studies, five treated mobile telephone or message reminders as the exposure or intervention, and 3 compared the effects of different messages on screening uptake.</li> <li>Mobile technologies, particularly telephone reminders or messages, lead to increased Pap test uptake</li> </ul>                                                                                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Overall, the authors suggest that mobile technologies, particularly telephone reminders or messages, lead to increased Pap test uptake.</li> </ul>                                                                                                                                                                                                                                                                                                                                   |

**Conflicts of interest:** Authors don't have any conflict of interest to declare.

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