An outcomes evaluation of the Zim-TTECH cervical cancer intervention in Harare Metropolitan Province, Zimbabwe

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COMPULSORY DECLARATION:

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, cited and referenced.

Signature: Signed by candidate Date: 21 July 2022

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
CDC	Center for Disease Control
CHAI	Clinton Health Access Initiative
HIV	Human Immunodeficiency Syndrome
HPV	Human Papilloma Virus
LEEP	Loop Electro-excision Procedure
MOHCC	Ministry of Health and Child Care
MSF-OCB	Medesins San Frontiers – Operation Centre Belgium
NGO	Non-Governmental Organisation
OPHID	Organisation for Public Health Intervention and Development
PEPFAR	President's Emergency Plan for AIDS Relief
PSI	Population Services International
QALYs	Quality Adjusted Life Years
ZimPAAC	Zimbabwe Partnership to Accelerate AIDS Control
Zim-TTECH	Zimbabwe Technical Assistance, Training and Education for Health
VIAC	Visual Inspection with Acetic Acid Cervicography

Executive Summary

This report presents the findings of an outcomes evaluation of the Zimbabwe Technical Assistance, Training and Education for Health's (Zim-TTECH) cervical cancer intervention in Harare and Epworth districts (Harare Metropolitan province). This programme seeks to improve access and uptake of cervical cancer screening and treatment among women living with HIV through recruitment, training and mentorship of nurses, procurement of equipment and commodities, providing support for diagnosis and referral for treatment services, and quality assessment of cervical cancer services. The evaluation interrogated the plausibility of the programme theory of the Zim-TTECH intervention and assessed its short- and medium outcomes.

Methods

The evaluation used a mixed-methods approach with both qualitative and quantitative data collection methods. This comprised a desk review of programme documents and relevant literature, secondary analysis of programme routine data and collection of primary data. Quantative descriptive analysis was conducted to determine coverage (in percentage) of Zim-TTECH cervical cancer services between 2019-2021. Qualitative analysis was used to complement quantitative data and aid in the interpretation of programme results.

Key Results

This assessment showed that the Zim-TTECH cervical cancer intervention contributed to the increase in awareness among women living with HIV and health workers. The programme capacitated health workers to conduct effective health education and awareness-raising campaigns for cervical cancer. The evaluation revealed that the Zim-TTECH cervical cancer intervention improved access to cervical cancer services among women living with HIV. Additionally, the intervention did not deny women who were HIV-negative services though the reach for this group is not routinely documented and reported. Results from the evaluation showed that LEEP was the main treatment type used in Harare and Epworth followed by cryotherapy and thermablation techniques. This assessment also showed that the Zim-TTECH cervical cancer intervention contributed positively to the following areas: increasing access to cervical cancer services, early detection of pre-cancers and invasive disease and increased health education and awareness of cervical cancer among women and health workers. The evaluation also revealed some negative implications of the Zim-TTECH intervention on the health system which include the following: the programme's screening resulted in the detection of invasive cervical cancer cases which were referred to weak and ill-capacitated public health facilities, and most screening services are offered in HIV clinics

which results in some women who are not HIV positive not wanting to screen for fear of stigma and the programme also contributed to staff attrition in public health facilities as they search for better opportunities in the NGO sector and outside the country. The Zim-TTECH cervical cancer programme rapidly adjusted to the new COVID-19 protocols in 2020 to ensure continuity of services though the demand side was affected by protracted lockdowns. The programme has also been keeping in tandem with technological evolutions including the adoption of thermoablative techniques and planning for the rolling out of highly sensitive human papilloma virus (HPV) DNA testing in line with Ministry of Health strategies and WHO guidelines. However, discussions are still ongoing on the adoption of HPV screening as the primary method as it will negate the 'see and treat' approach. This evaluation showed that cervical cancer services were likely to continue in Harare and Epworth after the cessation of Zim-TTECH support albeit at a lower scale. The Zim-TTECH intervention is based in public health facilities that have been offering cervical cancer services even before partner support came through and these are likely to continue in their absence.

Conclusions

Findings from this evaluation showed that Zim-TTECH cervical cancer intervention was relatively effective with regards to short-medium term outcomes, although the COVID-19 pandemic saw disruptions of cervical cancer services which affected service delivery/uptake in 2020-2021. However, the key shortfalls of the intervention revealed in this evaluation showed systemic/structural gaps with the design of health interventions in the country as well as the vertical approaches which are also being perpetuated by donors. Additionally, given the huge resource shortfalls in the MoHCC due to protracted underfunding, there is evidence of limited coordination/leadership capacities to guide partners who come up with piecemeal interventions. Despite the revealed shortcomings of the intervention there are opportunities to improve services including treatment of invasive cervical cancer. Overall, better partnerships and coordination among government, NGOs and donors will be a game changer in ensuring continuity of services for cervical cancer in low-resource settings.

CHAPTER 1 - INTRODUCTION

This dissertation reports on an evaluation conducted for the Zimbabwe Technical Assistance, Training and Education for Health's (Zim-TTECH) cervical cancer intervention in Harare and Epworth, Zimbabwe. This programme seeks to improve access and uptake of cervical cancer screening and treatment among women living with HIV through recruitment, training and mentorship of nurses, procurement of equipment and commodities, providing support for diagnosis and referral for treatment services, and quality assessment of cervical cancer services. The evaluation interrogated the plausibility of the programme theory of the Zim-TTECH intervention and assessed its short- and medium outcomes. . .

This chapter provides a literature review of cervical cancer interventions followed by Zim-TTECH's programme description.

Literature Review

Cervical cancer is the fourth most diagnosed neoplasm among women worldwide (Zhang et al., 2021). In 2018, the World Health Organisation (WHO) estimated that 570 000 women were diagnosed with cervical cancer worldwide and about 311 000 women have died from the disease (Arbyn et al., 2020). Recent reports have indicated that about 87% of the 266,000 global cervical cancer deaths occur in developing countries (Wu et al., 2017). In Zimbabwe, cervical cancer is a major public health challenge and a cause of death among women (Kuguyo et al., 2017). Recent data shows that at least 2,270 cases of cervical cancer are diagnosed and about 1,451 deaths are recorded annually in the country (Bruno et al., 2016). The expansion of cervical cancer services peaked in the last few years with mostly PEPFAR-funded Non-Governmental Organisations (NGOs) supporting the Ministry of Health and Child Care.

The Ministry of Health in Zimbabwe has been working with different NGO partners to support its cervical cancer interventions across the country. The target group for the interventions are women living with HIV/AIDS in both urban and rural areas. The high cervical cancer burden is predominantly driven by the high prevalence of HIV/AIDS and limited screening and treatment services in the country (Tapera et al., 2019a; see also Kuguyo et al., 2017). This has seen the integration of cervical cancer services in HIV clinics. Scope of services for most partners is limited to screening, treatment of precancers, diagnosis and logistical support to tertiary facilities for women diagnosed with the invasive disease. All the partners working in the cervical cancer space use the Zimbabwe Cervical Cancer National guidelines which were developed and updated by subject experts in the country using WHO guidelines. These partners include

NGOs such as OPHID, PSI, CHAI, Newlands Clinic, MSF-OCB, local authorities, and JF Kapnek among others. The partners also present their work and challenges during regular quarterly technical working group workshops which are convened by the Ministry of Health. Recent reports have shown that cervical cancer services were negatively impacted by the COVID-19 pandemic in Zimbabwe (Murewanhema, 2021). This calls for the understanding of the adaptions of programmes to continue delivering services to preserve the gains and momentum realised in the last couple of years. It is against this background that the Zim-TTECH cervical cancer intervention was designed and is being implemented in targeted districts.

ZIM-TTECH Cervical Cancer Intervention- Programme Description

ZIM-TTECH is a Zimbabwean registered health trust established to improve clinical services and revitalise health systems as a partner of the Ministry of Health and Child Care. Zim-TTECH offices and headquarters are in Harare and their field presence is through the Ministry of Health facilities through which they implement cervical cancer activities. The Ministry of Health and Child Care is a government institution and is mandated to provide health care services to the population across the country. Zim-TTECH was established out of the University of Washington's International Training and Education Center for Health (I-TECH) which has been working in Zimbabwe since 2003. I-TECH contributed significantly to the Zimbabwe national response to the HIV epidemic and progress toward achieving HIV epidemic control. I-TECH, with PEPFAR funding administered by US Centers for Disease Control (CDC) formed a consortium, named the Zimbabwe Partnership to Accelerate AIDS Control (ZimPAAC).

In 2018, Zim-TTECH as a partner in the ZimPAAC consortium was requested by its main donor, PEPFAR to integrate cervical cancer screening and treatment into its HIV/AIDS programme. The cervical cancer intervention is funded until September 2023 but has the potential of being extended beyond 2023. The organisation implements cervical cancer screening and treatment in five provinces of Zimbabwe under the HIV treatment and care programme and this has been running for three years. The targeted provinces are Harare, Mashonaland East, Mashonaland Central, Mashonaland West and Matabeleland North. Within these provinces, 20 districts were prioritised for the programme. To date, about 66 health facilities which comprise clinics and hospitals are being supported across the five provinces/20 districts to provide cervical cancer screening and treatment services. All the intervention health facilities offer HIV/AIDS services, and this was the main criteria used in selecting them for inclusion in the project. The number of sites varies by province and ranges from 8-20. Cervical cancer screening and treatment services are provided mostly by nurses though some procedures such as Loop Electro-Excision Procedure (LEEP) and biopsies are performed by doctors. The overall goal of the programme is to implement high-quality

cervical cancer screening for HIV-positive women and treatment for women with cervical abnormalities. The main objective of the intervention is to reduce morbidities and mortalities resulting from cervical cancer among women living with HIV/AIDS.

Target group and selection of beneficiaries

Zim-TTECH implements cervical cancer screening and treatment services targeted at women living with HIV/AIDS as they are at a higher risk than non-HIV-infected women globally. The services are integrated into clinics that offer HIV services where eligible women living with HIV are referred. The following are the criteria used to identify the intervention target group; a) those women diagnosed with pre-cancerous lesions, b) suspected of cancer and c) those confirmed to have invasive cancer are referred for treatment services in the supported facilities or tertiary health facilities where specialised services are available. Based on the Zimbabwe Cervical Cancer National guidance lines women aged 25-49 years are targeted for services. While HIV-negative women are not refused services, priority is given to those living with HIV through integrating services in HIV/AIDS clinics.

Programme activities

The Zim-TTECH cervical cancer intervention can be categorised into four main activities listed below:

i) **Recruitment, training and mentorship of nurses to provide cervical cancer screening and treatment**

Zim-TTECH recruits, trains, and provides mentoring to nurses in cervical cancer screening using Visual inspection with Acetic Acid Cervicography (VIAC) and Human Papillomavirus (HPV) testing and treatment of precancers.

ii) **Procurement of equipment and commodities**

Zim-TTECH procures equipment and commodities for the provision of cervical cancer screening and treatment in intervention health facilities.

iii) **Supporting of diagnosis and referral for treatment of cervical cancer**

The project supports the diagnosis of cervical cancer among eligible women by referring and paying for histological investigations in contracted private laboratories.

iv) **Quality assurance of screening, treatment and diagnostic services**

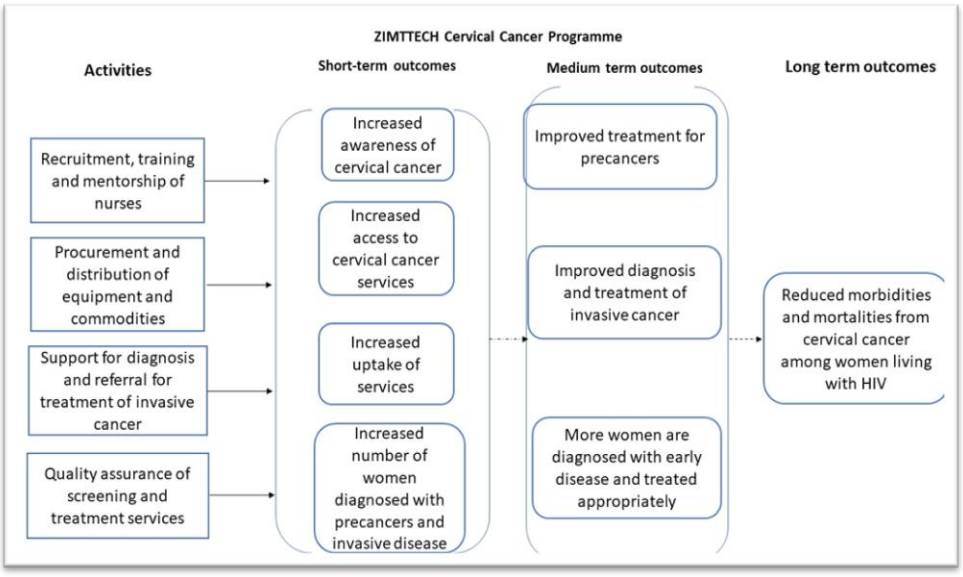
Last but not least, Zim-TTECH conducts regular quality assurance of cervical cancer screening and treatment services through regular support and supervision visits, quality audits and a review of histology results in the 66 targeted health facilities.

Zim-TTECH programme theory

Zim-TTECH did not have an articulated programme theory for the cervical cancer programme given the origin of the intervention. From the discussions conducted with one of the senior programme managers, the intervention was prescriptive from the donor's side (PEPFAR) and activities were elucidated from donor guidance documents. The programme theory depicted in Figure 1 was constructed by the evaluator based on the discussions with the client and complemented by programme documents prior to the plausibility assessment.

The framework presented in Figure 1 provides a draft variable-oriented insight into the proposed mechanisms of change for the desired outcomes/impact. In the framework, the four main activities are expected to lead to improved awareness of cervical cancer, screening (short term), and the treatment, early diagnosis and referral for treatment of invasive cervical cancer (long term). The framework which is also the theory of change of the programme is underpinned by programme staff building capacities of health workers (nurses and doctors) in the public health facilities and providing them with equipment and commodities to provide services to women living with HIV. The programme staff also create demand for cervical cancer services by raising awareness among women and health workers (see Figure 1).

Figure 1: *Draft Programme Theory of The Zim-TTECH Cervical Cancer Programme*



Plausibility of Programme Theory

The Zim-TTECH cervical cancer programme is underpinned by six causal assumptions for which a literature review was conducted (see below) to investigate their plausibility. The assumptions are as follows:

1. Training and capacitation of nurses will result in increased awareness among women living with HIV creating demand for cervical cancer services
2. Women living with HIV will accept cervical cancer awareness, screening and treatment services
3. Procurement of equipment and commodities for cervical cancer screening and treatment will result in increased service availability
4. Screening cervical cancer using the VIAC approach is effective at detecting precancerous lesions
5. Precancers detected using the VIAC approach will respond to treatment modalities available (cryotherapy, thermal ablation and LEEP)
6. Quality of screening and treatment services will be optimal in the programme

The literature review below judges these assumptions against the relevant literature on cancer programmes to determine the level of plausibility of the programme.

1. Training and capacitation of nurses will result in increased awareness among women living with HIV creating demand for cervical cancer services

Zim-TTECH cervical cancer programme involves training and capacity building of health workers who provide services to women. Studies have shown the importance of training health workers to improve community awareness and uptake of cancer services (Rick et al., 2019). Umuago et al (2020) noted in their Nigerian study that ignorance among health workers was one of the drivers of reduced demand for cervical cancer services among the general population. This was reviewed to have sustained high disease burden and mortalities among women (Umuago et al., 2020). In a Tanzanian study, researchers revealed that after a training programme, health workers had better care delivery, referral practices and education for the population (Singer et al., 2021). Ansari et al (2019) noted that training community health workers on cervical cancer would trickle to the general population thereby increasing demand for services.

In Zimbabwe, a recent review showed that at least every health facility had a nurse trained in cervical cancer screening and treatment across the country. This was achieved by regular training including on-the-job mentorship of health workers (Tapera et al., 2021). A recent evaluation also noted that health worker training and mentorship were effective at creating community awareness and demand for cervical cancer services. Health worker knowledge was also noted to dispel myths and misconceptions among women, and this has been shown to increase service utilisation (MSB-OCB, 2021). Zim-TTECH has been

training and capacitating health workers as part of their intervention. Thus, the programme can be expected to improve health workers' knowledge, awareness of cervical cancer and utilisation of services.

2. Women living with HIV will accept cervical cancer awareness, screening and treatment services

Some researchers have reported low cervical cancer knowledge levels among women living with HIV. However, they were interested in learning more about it (Kung et al., 2019). In an Ethiopian study, Eshete et al (2020) showed low knowledge of cervical cancer and acceptance of services among women. Cervical cancer screening acceptance was associated with having knowledge of cervical cancer among other factors (Eshete et al., 2020). Another study showed that among women living with HIV, fear of stigma was a barrier to the utilisation of cervical cancer screening. Findings suggested that reducing HIV-related stigma could increase cervical cancer screening (Gordon et al., 2019). A recent systematic review showed low utilisation of cervical cancer screening among women living with HIV and also reported knowledge of cervical cancer as a predictor of screening (Mekonnen, 2020). Another study showed that uptake of cervical cancer screening was associated with having been informed about cervical cancer at the HIV clinic (Tchounga et al., 2019). Zimbabwe has been scaling up the integration of cervical cancer in HIV clinics to reduce morbidities and mortalities from cervical cancer among women living with HIV (Tapera et al., 2021). The Zim-TTECH programme involves educating women living with HIV about cervical cancer and encouraging them to screen and take treatment if found to be eligible. The integration of cervical cancer services in HIV clinics being supported by Zim-TTECH may be effective in improving knowledge and uptake of services among women living with HIV.

3. Procurement of equipment and commodities for cervical cancer screening and treatment will result in increased service availability

Studies in low-middle income countries have shown significant gaps in cervical cancer service availability due to lack of equipment and commodities (Tapera et al.,2019b; see also Adebamowo et al., 2014). In a Ugandan study, researchers found that a lack of equipment and commodities such as acetic acid for cervical cancer screening compromised service delivery in health facilities. The challenges emanated from ineffective and inefficient government supply chain systems (Obol et al., 2020). An Ethiopian assessment noted limited cervical cancer diagnostic capacity, particularly in rural areas due to limited equipment, commodities, and human resources (Getachew et al., 2017). The Zimbabwe Cervical Cancer Strategy review showed significant gaps in equipment and commodity supply chains which affected service availability across the country (Tapera et al., 2019b). In the Gutu district, Medesins San Frontiers (MSF) scaled up cervical cancer screening and treatment by procuring equipment and commodities for six

intervention health facilities which resulted in a cumulative screening coverage of 44% versus 5% for other comparable districts (MSF-OCB, 2021). The procurement of equipment and commodities for cervical cancer screening and treatment under the Zim-TTECH programme could therefore result in increased service supply in intervention health facilities.

4. Screening cervical cancer using the VIAC approach is effective at detecting precancerous lesions

5. Precancers detected using the VIAC approach will respond to treatment modalities available (cryotherapy, thermal ablation and LEEP)

Studies have shown that the VIAC approach is cost-effective though its accuracy is low. The approach has been popular in low-middle income countries due to its cost-effectiveness and has been recommended by WHO when no other approach is available (Silkensen et al., 2018). Recent studies have noted the challenges of VIAC which include the fact that it is labour intensive and its low accuracy can result in overtreatment (Nkurunziza et al., 2021; see also Tapera et al.,2019b). A recent study in India, however, reported that VIAC is a less costly and reliable testing approach for the detection of cervical precancerous lesions (Rady et al., 2017). Another study showed that VIAC results were comparable to those of cytology though the specificity of VIAC was relatively low (Manisha et al., 2017). Recently the WHO recommended the use of highly sensitive and specific screening approaches to eliminate cervical cancer (Canfell, 2019). Zimbabwe has also started considering the WHO guidance though lack of resources and competing priorities may stand in the way of full implementation of the recommendations in the short to medium term. Zim-TTECH uses the VIAC approach for screening cervical cancer based on national and WHO guidelines and the intervention can be expected to detect precancers among most eligible women living with HIV. Detection of precancers and their treatment is important in reducing the risk of cervical cancer.

Research has shown the effectiveness of ablative approaches (cryotherapy and thermal ablation) in the treatment of precancerous lesions in low to middle-income countries. Cure proportions for cryotherapy were reported to be about 83% and for thermal ablation, the cure proportion was estimated to be 92% (de Fouw et al., 2019). Ablative techniques have enabled the 'see and treat' approach in low to middle-income countries, thereby reducing loss-to-follow-up which is detrimental to the current cervical cancer prevention strides. Furthermore, the techniques have also enabled resource-poor countries to provide appropriate and low-cost treatment for cervical precancers. However, ablative techniques are not appropriate for women aged at least 50 years and for lesions covering at least 75% of the ectocervix. The use of excisional approaches has been recommended and proven effective in the treatment of precancers in older women and for lesions covering ≥75% of the ectocervix (Wentzensen et al., 2021). Zim-TTECH

intervention uses all three approaches in the treatment of precancerous lesions as per the national and WHO guidelines. Therefore, the programme can be anticipated to be effective in the treatment of precancers detected among women living with HIV.

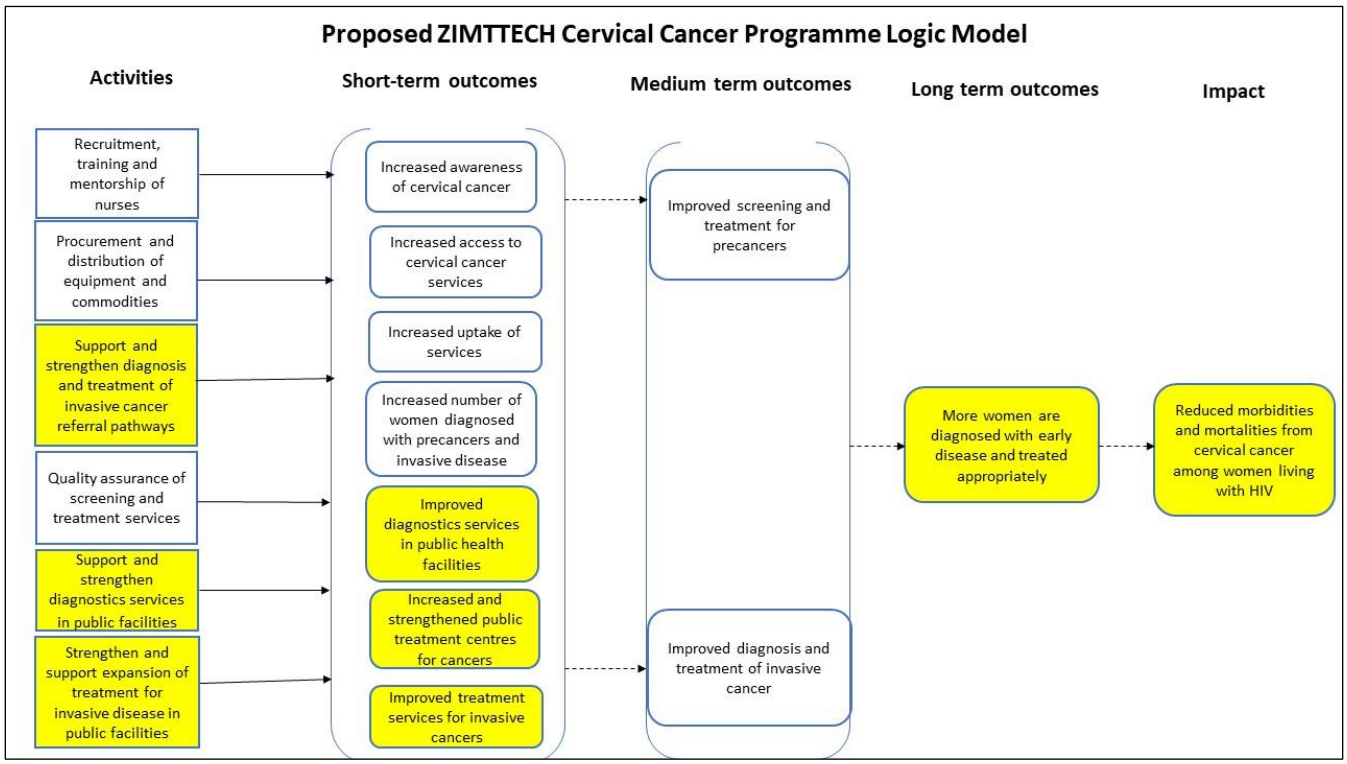
6. Quality of screening and treatment services will be optimal in the programme

Quality assurance is the mainstay of any cervical cancer screening and treatment programme. Studies have shown limited quality assurance measures in low to middle-income countries for cervical cancer interventions. The main goal of quality assurance for a cervical cancer programme is to develop and periodically monitor set key performance indicators. Quality assurance gold standards for cervical cancer screening using VIAC or HPV testing have not yet been established. Many countries in the global south are still to implement quality assurance systems within their programmes. However, in Central America, some countries have developed and implemented quality assurance measures, but these have not been uniformly adopted (Holme et al., 2017). A review of the Zimbabwe Cervical Cancer Strategy showed lack of a quality assurance system for screening and treatment of cervical precancers and invasive diseases (Tapera et al., 2021). The implementation of quality assurance measures by Zim-TTECH is likely to be donor-driven and without the Ministry of Health and Child Care establishing a standardised system, implementation of these measures will continue to be piecemeal and suboptimal. However, for purposes of the Zim-TTECH programme, the quality assurance measures implemented may be effective in line with the donor (PEPFAR) goals.

Proposed Programme Theory for Zim-TTECH intervention

The programme theory (Figure 1), shows some dotted arrows from short-term to medium- and long-term outcomes as the relationships are not linear. In addition, some key elements are missing to ensure the realisation of medium-long term outcomes and impact which lack in the Zim-TTECH model (see Figure 2). As outlined above, the Zim-TTECH programme focuses mainly on awareness, screening, treatment of precancers and support for diagnosis. Additionally, the Zim-TTECH cervical cancer programme is based in public health facilities and not all facilities have the capacity to provide all treatments, particularly LEEP and support for a diagnosis like a biopsy collection. Furthermore, treatment of invasive diseases is outside the scope of the Zim-TTECH programme and it also depends on the organisation and capacities of the public health facilities where patients are referred. Recent studies have shown significant organisation and capacity shortfalls in cancer public health facilities (Tapera et al., 2019; see also Tapera et al.,2021). A more plausible and holistic programme theory/model has been recommended below in Figure 2.

Figure 2: ***Proposed Zim-TTECH Cervical Cancer Programme's Logic Model***



Evaluation questions

The outcome evaluation component of this research assessed some of the key Zim-TTECH cervical cancer short and medium outcomes of the intervention namely: screening and treatment of precancers, and support for diagnosis and referral for treatment. Zim-TTECH has been implementing the cervical cancer intervention since 2018 and to date, no evaluation has been conducted for their programme. This evaluation may be a key assessment of their intervention and will be used as a midterm review given that their programme is expected to end in September 2023. The evaluation may also be helpful to the MoHCC and other partners working in the same spaces, to improve their programmes in Zimbabwe. An outcome evaluation measures the effects that a programme has on its target population or the social condition it seeks to address and aims to demonstrate whether those changes are attributable to the programme only (Rossi et al., 2019).

The questions related to the outcomes evaluation of the Zim-TTECH cervical cancer programme are:

1. Have the programme outcomes (short and medium term) been achieved?

    1.1 Are targeted women aware of cervical cancer?

1.2 Are targeted women accessing cervical cancer services?

1.3 Are targeted women utilising cervical cancer services?

1.4 Are targeted women being diagnosed and treated for precancers and early invasive disease?

2. What are the positive or negative, intended or unintended, changes brought about by the programme?

2.1 How did the programme respond to the evolving context- COVID-19 and technological/practice changes in the screening and treatment of cervical cancer?

2.2 Has the programme built sufficient capacity to allow for the continuation of the activities after ZIM-TTECH hands over the programme to the Ministry of Health and Child Health?

CHAPTER 2 - METHOD

This chapter presents the method for the evaluation of the Zim-TTECH cervical cancer intervention in the Harare and Epworth districts.

Evaluation Design

The evaluation used a mixed-methods approach (Creswell, 1998) with both qualitative and quantitative data collection methods. This comprised of a desk review of programme documents and relevant literature, secondary analysis of programme routine data and collection of primary data. For the quantitative part of the evaluation, secondary data from the project databases/records were analysed to calculate/estimate reach/coverage for different cervical cancer services. The qualitative inquiry utilised key informant interviews with relevant stakeholders and focus group discussions with some of the beneficiaries of the programme. Only data relevant for interventions in Harare and Epworth were collected and reviewed for the evaluation. Evaluation questions were used to guide the specific methods that were used to answer them (see summary in Table 1).

This evaluation utilised mixed methods to assess the performance of the outcomes as well as to understand some of the key issues that underpinned the programme's delivery of results. Mixed methods have been argued to increase the credibility of the research findings. Some scholars argue about the relevance of mixed methods in studying phenomena due to the differences in epistemological and ontological underpinnings of qualitative and quantitative research methods (Creswell, 1998; Creswell; 2013; Yauch, 2003). However, both paradigms are meant to understand a phenomenon of interest and hence their application in a single study is beneficial for balanced research findings. The use of qualitative and quantitative methods tends to neutralise the flaws of one method and increase the benefit of another method. Hussein (2009) has also argued that it increases the credibility of research findings by increasing internal consistency of the research outputs. Mixed methods are also a stronger research approach if conclusions are to be used in practice (Creswell, 2013; see also Yauch, 2003).

Participant selection

Key informants for this evaluation were selected using a snowball sampling technique (Parker et al., 2019). The evaluation targeted programme managers from Zim-TTECH and the Ministry of Health. Additionally, policymakers in the MoHCC were also selected purposively to participate in the study. Key informants who included Zim-TTECH programme managers, MoHCC policy makers and health professionals (nurses and doctors) from Zim-TTECH support health facilities), were selected in such a way as to ensure diverse

characteristics i.e., age, gender, position in organisation/community, number of years working in the targeted communities and from different organisations/departments/sections, were selected to participate in the study. Using the principle of theoretical saturation (Saunders et al., 2018), a total of 11 participants were selected and considered adequate based on literature (Creswell, 1998). A key informant interview guide was used for data collection.

Focus group discussion participants were selected purposively in Harare and Epworth from some of the women beneficiaries of the programme. Participants with homogeneous characteristics but with varying opinions were considered in each focus group. Key characteristics such as age, gender, level of education, occupation, type of services provided, area of residence etc. were considered for composing the focus groups. Based on the literature, six (6) participants were enrolled for each focus group (Morgan, 1997) and two (2) group discussions were convened (one in Harare and one in Epworth) based on the available resources (including time) to conduct the data collection. A discussion guide was used for data collection during the focus group discussions.

Measures and procedures

The measures and procedures that were used in the evaluation are summarised in Table 1.

Quantitative

The short- and medium-term outcomes of the Zim-TTECH cervical cancer intervention were assessed using service coverage (key performance indicators), calculated by dividing the number of eligible women reached and the target (including proxies) for that service in Harare and Epworth districts. Quantitative data were collected from programme databases (for both screening and treatment) from 2019 - 2021 and excel based calculations were conducted to obtain coverages. Given that the programme is at midterm (having started in 2019 and expected to end in 2023), the expectation was that the performance/coverage for each of the key indicators would be at least 50%. However, some of the service data and targets were missing from the programme databases. For some targets estimates from recent national/subnational statistics were used to provide a better picture of the performance of the Zim-TTECH intervention.

Qualitative

For the evaluation, positive and negative changes in the Zim-TTECH cervical cancer were assessed qualitatively using key informant interviews and FGDs with some of the beneficiaries. Additionally, the assessments of the evolution of the Zim-TTECH programme to change and how it had built sufficient capacity for the Ministry of Health to continue beyond its support were done qualitatively using key

informant interviews as no performance/coverage indicators had been defined for this aspect. Data collection was conducted using key informant interviews and FGDs guides (see Appendix B and C).

Table 1: *Summary of Evaluation Questions, Data Sources and Sampling Methods*

Evaluation questions	Data collection methods	Sources of data with approximate numbers	Sampling method
1. Have the programme outcomes (short and medium) been achieved? 1.1 Are targeted women aware of cervical cancer? 1.2 Are targeted women accessing cervical cancer services? 1.3 Are targeted women utilizing cervical cancer services? 1.4 Are targeted women being diagnosed and treated for precancers and early invasive disease?	Document review Informal interview/meetings Focus group discussions	Programme documents M&E programme database 2 FGDs of 6 people each conducted with beneficiaries	Systematic Purposive
2. What were the positive or negative, intended or unintended, changes brought about by the programme?	Key informant interviews Informal interviews/meetings	Programme documents M&E programme database 11 participants drawn from nurses, doctors, clinical officers, pharmacists, programme managers and policymakers 2 FGDs of 6 people each conducted with beneficiaries	Purposive and snowball
	Focus group discussions		Purposive
2.1 How did the programme respond to the evolving context- COVID-19 and technological/practice changes in screening and treatment of cervical cancer?	Key informant interviews Informal interviews/meetings	Programme documents 11 participants drawn from nurses, doctors, clinical officers, pharmacists, programme managers and policymakers	Purposive and snowball
2.2 Has the programme built sufficient capacity to allow for the continuation of the activities after ZIM-TTECH hands over the programme to the Ministry of Health and Child Health?	Key informant interviews Informal interviews/meetings	Programme documents M&E programme database 11 participants drawn from nurses, doctors, clinical officers, pharmacists, programme managers and policymakers	Purposive and snowball

Ethical considerations

This evaluation was conducted in a manner that protects the confidentiality, human rights, and individual dignity of participants, as espoused in the Belmont Declaration (Adashi et al., 2018). Permissions to conduct the study were sought and granted by the Ministry of Health and Child Care, City of Harare Department of Health and Mashonaland East Provincial Medical Directorate (see Appendix A). Approval from the Commerce Faculty's Ethics in Research Committee (**REC 2021/11/013**) was obtained for use of secondary data from the Zim-TTECH programme and the collection of primary data from key informants and beneficiaries. No ethical approval was required from the Medical Research Council of Zimbabwe (MRCZ) as evaluations are exempted since they are designed for programme improvements.

Verbal informed consent was obtained from all participants as well as approval to use audio-recording devices. Information sheets were used to provide relevant details to the participants concerning the purpose and expectations of the evaluation. For beneficiaries, the information sheet was translated into the main local language which is Shona. For key informants, the information sheet was in the English language. In addition, relevant authorities including the Director of Health, City of Harare, the Director of Family Health (MoHCC) and the Provincial Medical Director, Mashonaland East were notified of the evaluation project.

Data analysis

Table 2 shows the data analysis plan utilised for the evaluation.

Table 2: *Evaluation Data Analysis Plan*

Evaluation questions	Data sources	Method of analysis
1. Have the programme outcomes (short and medium) been achieved? 1.1 Are targeted women aware of cervical cancer? 1.2 Are targeted women accessing cervical cancer services? 1.3 Are targeted women utilizing cervical cancer services? 1.4 Are targeted women being diagnosed and treated for precancers and early invasive disease?	Programme documents M&E Databases Key informant interviews Focus group discussions	Descriptive statistics Document analysis Descriptive statistics, document analysis Thematic analysis
2. What were the positive or negative, intended or unintended, changes brought about by the programme?	Key informant interviews Focus group discussions	Thematic analysis
2.1 How did the programme respond to the evolving context?	Key informant interviews	Thematic analysis
2.2 Has the programme built sufficient capacity to allow for the continuation of the activities after ZIM-TTECH hands over the programme to the Ministry of Health and Child Health?	Key informant interviews	Thematic analysis

Quantitative analysis

Descriptive analysis was conducted to determine coverage (in percentage) of Zim-TTECH cervical cancer services between 2019-2021. Based on the key performance indicators provided by Zim-TTECH and in line with the Ministry of Health guidelines, programme data was used to calculate percentage coverage for different services. Since the focus of this evaluation was to evaluate the short- and medium-term outcomes, descriptive statistics were sufficient for the quantitative analysis (Rubin, 2012). Microsoft Excel was used to conduct the basic analysis using excel based programme datasets from Zim-TTECH. Additionally, graphs were also used to visualise trends to aid the interpretation of results for the evaluation.

Qualitative Analysis

Qualitative analysis was used to complement quantitative data and aid in the interpretation of programme results. In addition, the analysis was used to obtain an in-depth understanding of the programme outcomes and other issues such as adaptation to evolving context which cannot be explored quantitatively.

Transcription of the audio recordings was done by the evaluator. Transcripts were identified by the unique identifier previously assigned to each participant (and stated by each participant at the beginning of the

FGD) rather than by any personal information. Unique identifiers were used to link the FGDs, only after the conclusion of transcription.

All audio-recorded data from FGDs and key informant interviews were transcribed and translated verbatim into English. Any relevant non-verbal communications were included in the transcripts and interview summaries were then written for each FGD/interview. The interview summary was a descriptive and analytic synopsis of the FGD/interview. The evaluator conducted inductive thematic analysis of the interview summaries to come up with a provisional coding framework (Creswell, 1998). All key informant interviews and FGDs were then coded line by line manually to identify interview themes and code the interview transcripts. Transcripts were then coded using the modified coding framework; care was taken to identify any additionally emerging codes. This analysis was preferred for this evaluation as it was simpler and is based on literature from other evaluations/research studies (Creswell, 1998; see also Kumar, 1989). Furthermore, by using thematic analysis there was the possibility of linking various concepts and opinions of programme staff and/or key actors and comparing these with the quantitive programme data (Alhojailan, 2012).

Limitations of the evaluation

This evaluation had some limitations which would need to be reported to enable users of report to consider when interpreting the findings. Firstly, the unavailability of relevant programme data to answer some of the key evaluation questions was encountered. To address this limitation some of the targets for treatment, diagnosis and referrals of women diagnosed with invasive cervical cancer were estimated from national estimates extrapolated from recent literature. Missing programme data on some key indicators such as referrals for diagonosis, LEEP data and number of women referred for treatment of invasive disease had impact on the secondary analysis and the interpretation of the findings. However, triangulation with key informant and beneficiary interviews was used to bridge the limitation. Lastly, given the COVID-19 context, most key informant interviews were conducted using virtual platforms (Zoom). The use of virtual platforms limited the ability to obtain non-verbal cues which may have resulted in further probing of the interviewees. However, were possible some face-to-face interviews were conducted with some key informants (mostly nurses) and follow-up interviews/discussions were conducted to verify/validate some information.

CHAPTER 3 - RESULTS

This chapter presents the results/findings of the outcomes assessment of the Zim-TTECH cervical cancer intervention in the Harare and Epworth districts. It provides both the quantitative and qualitative findings obtained from the evaluation. Results are presented based on the evaluation questions utilised.

Have the programme outcomes (short and medium term) been achieved?

Are targeted women aware of cervical cancer?

Results from the key informmat and focus group discussion showed that the Zim-TTECH intervention contributed to an increase in awareness of cervical cancer among women and health workers. The training provided to health workers under the programme were also reported as having capacitated health workers with the knowledge to conduct effective health education and awareness sessions in health facilities. Zim-TTECH trained nurses in cervical cancer screening, treatment and general health education at different time points of the programme. This training was conducted with smaller groups (four-12 participants) in central/provincial hospitals over two-week periods. Trained nurses were observed over six weeks of practice in their respective health facilities and provided mentorship before they were certified as competent. Additionally, as part of quality control, random VIAC images (usually 10%) from each facility were periodically shared with independent quality assessors and where a high number of discordances were observed, support and supervision or further trainings were provided as reported by some key informants as quotes below:

- "Regular quality control measures are in place in each facility where about 10% of VIAC images are shared with independent assessor once a month as part of continuous improvement"

This evaluation collected primary data from the participants through focus group discussions and the following were found.

Some women beneficiaries also reported that they were provided with cervical cancer information during their routine visits for antiretroviral treatment, which influenced them to screen for cervical cancer. This is illustrated in the following quotations from the interviews conducted:

Beneficiaries:

- "Women on ART receive information at the OI department and in maternity clinic where they are encouraged to get screened for cervical cancer"

- "All women on ART are encouraged to screen once yearly for early detection of precancerous lesions"
- "Most of us are now aware of cervical cancer and the need to screen regularly "
- "Everytime we visit the clinic for our drug supplies, nurses provide us with awareness on cervical cancer screening and why we need to be checked every year"

In addition, some health workers also alluded that their knowledge and awareness of cervical cancer had improved after being trained and mentored under the Zim-TTECH programme. This is illustrated in the following quotations:

Key informants:

- " Health workers have also been capacitated with knowledge and skills through the intervention"
- "Information and educational materials are offered to make sure that women are aware of cervical cancer"
- "Yes, women are now aware of cervical cancer through routine health education offered during their ART resupply visits as part of the procedure for Zim-TTECH in support of the Ministry of Health and Child Care activities"
- "Most women especially the elderly are aware but young women and adolescent girls are less aware though this is being addressed through health education"
- "Zim-TTECH intervention has improved our knowledge of cervical cancer and this helps us to promote health education and awareness among patients"

However, it is difficult to quantify the extent to which the Zim-TTECH intervention alone influenced awareness of cervical cancer among women and health workers as the Ministry of Health and other partners have also been supporting nation-wide campaigns since 2012. Some senior managers in the Ministry of Health and Zim-TTECH also reported that while Zim-TTECH has contributed to awareness raising and health education other actors have also been working in the same spaces making it challenging to quantify the contribution of the Zim-TTECH programme specifically.

Summary of findings

Key informant interviews and focus group discussions showed that the Zim-TTECH cervical cancer intervention contributed to the increase in awareness among women living with HIV and health workers. The programme capacitated health workers to conduct effective health education and awareness-raising campaigns for cervical cancer. However, quantifying the unique contribution of the Zim-TTECH

intervention in Harare and Epworth was not possible given that the Ministry of Health and other partners have also been working on promoting awareness through campaigns since 2012.

Are targeted women accessing cervical cancer services?

Results from quantitative analysis revealed that access to cervical cancer services among women living with HIV had increased in Harare and Epworth because of the Zim-TTECH programme, relative to the baseline in 2018 (before Zim-TTECH started supporting MoHCC). In addition, even though the programme was targeted at women living with HIV, those who were HIV-negative could also access the services though they were not reported in the programme databases/reports.

Cervical cancer screening registers kept at health facilities showed increases in the number of women that had accessed cervical cancer services compared to previous years when Zim-TTECH had not been supporting the programme (see Table 3). Additionally, interviews with nurses also showed that more women were willing to be screened for cervical cancer in health facilities compared to a few years ago. However, the registers did not capture women who were HIV-negative which was a limitation in assessing whether they had equal access to the same facilities/services.

The following quotations support the increased access to services as reported by the key informants:

- "A number of health facilities are offering services with support from Zim-TTECH and outreaches are also being conducted to serve hard-to-reach areas "
- "The number of health facilities offering cervical cancer services have increased hence an improvement on coverage"

Women beneficiaries interviewed for this evaluation alluded to increased access to cervical cancer screening, treatment of pre-cancerous lesions using cryotherapy, LEEP and thermal ablative techniques, diagnosis of invasive cervical cancer and referral for treatment. This is illustrated in the following quotation:

- "Women are being reached through integrated services thereby increasing uptake or adherence to treatment"

However, all participants interviewed noted some gaps in accessing treatment of invasive cervical cancer as this was beyond the scope of Zim-TTECH programme and treatment is only available in two major hospitals in Zimbabwe (one in Harare which serves the northen part and one in Bulawayo which serves the southern part of the country). One other barrier reported by most women beneficiaries interviewed

was that by targeting women living with HIV, the programme could have created a misconception that women who are not HIV positive are not at risk of developing cervical cancer or pre-cancerous lesions. The following quotes illustrate the above reported barriers:

Key informants

- "Screening has resulted in detection of invasive disease but Zim-TTECH does not support treatment of cervical cancer which increases pressure on the two national cancer facilties"
- "All NGOs partners supporting the MoHCC are focusing on awareness, screening and treatment of pre-cancer but no one wants to invest in treatment invasive disease"

Beneficiaries

- "When you are suspected or diagnosed of cancer you will have to pay for everything from your pocket which is difficult for most women"
- "Women who are HIV negative don't think themselves as at risk of cervical cancer and messages on this condition at times only focus on us who are living with HIV"

Summary of findings

This evaluation revealed that the Zim-TTECH cervical cancer intervention improved access to cervical cancer services among women living with HIV. Additionally, the intervention did not deny women who were HIV-negative services though the reach for this group is not routinely documented and reported. The programme saw more women accessing cervical cancer screening, treatment of pre-cancers, diagnosis of invasive cervical cancer and referral for treatment of invasive disease. However, the major gap noted in this evaluation was the lack of support for the treatment of invasive cancer, which is beyond the scope of the Zim-TTECH programme and is only relatively available in two public health facilities across the entire country. Targeting women living with HIV may have also created misconceptions that women who are HIV-negative are not at risk of developing cervical cancer.

Are targeted women utilising cervical cancer services?

Qualitative analysis showed that cervical cancer service utilisation had increased especially among women living with HIV in Zim-TTECH-supported health facilities in Harare and Epworth. Health workers and senior managers who were interviewed for this evaluation reported that the major barrier to utilising cervical cancer services was limited availability of services in health facilities and that the Zim-TTECH

programme had increased service supply thereby influencing utilisation. This is illustrated in the following quotations below from key informants:

- "Most women are now aware of cervical cancer screening and its importance however, the services are not available everywhere and even in some of the big hospitals services may not be offered daily"
- "Women who live in rural or hard-to-reach areas may find it difficult to access the services especially for a condition that is asymptomatic in early stages"
- "If services could be made available routinely in all health facilities, most women would be able to access them but this is still a long way from happening'

Overall, based on the programme's annual work plans, the Zim-TTECH programme has a target of reaching 92,116 women living with HIV annually in five (5) priority provinces and a target of 37,352 (41% of the total programme target) women in Harare (30,059) and Epworth (7,293) districts (see section below for screening performance analysis).

Cervical cancer screening

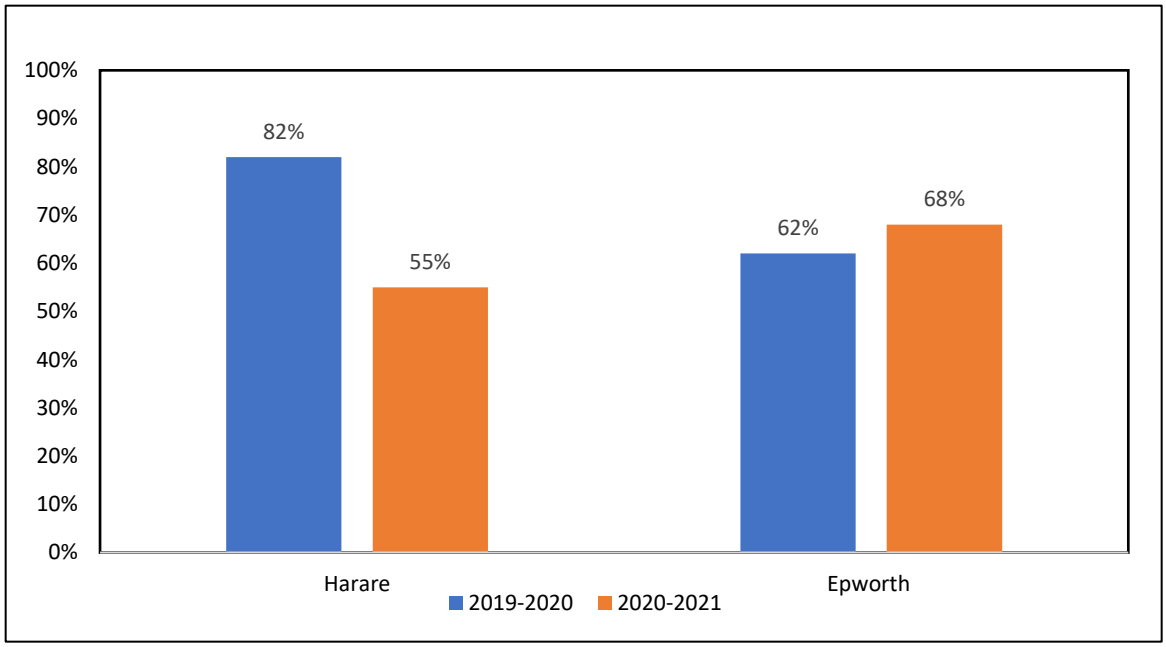
Table 3 and Figure 2 show the targets, results, and achievements (%) in cervical cancer screening in Harare and Epworth over two years. Screening programmatic coverage decreased by 27% in Harare between 2019/2020 and 2020/2021. For Epworth, screening coverage increased by 6% in 2020/2021, from 62% to 68%. Screening programmatic coverage was relatively higher in Harare in 2019/2020 and lower in 2020/2021 compared to Epworth. The results suggest that service supply for screening/utilisation was higher in Harare in 2019/2020 than in Epworth while the service disruption or low utilisation in the contexts of COVID-19 was higher in Harare compared to Epworth.

Table 3: *Cervical cancer screening statistics in Harare and Epworth from the Zim-TTECH programme database*

Year	Harare			Epworth		
	Target	Results	% Achieved	Target	Results	% Achieved
2018*	-	3,761	-		478	-
2019 -2020[&]	30,059	24,751	82	7,293	4,549	62
2020 – 2021	30,059	16,396	55	7,293	4,983	68

*There was no Zim-TTECH cervical cancer programme in 2018, this is being used as baseline to show the difference; [&]Zim-TTECH programme runs from October - September the following year

Figure 3: *Achievement (%) of Zim-TTECH programme in cervical cancer screening in Harare and Epworth*



Are targeted women being diagnosed and treated for precancers and early invasive disease?

Table 4 and Figure 3 show the percentage achievements in the treatment of precancers in Harare and Epworth respectively. Treatment coverage was relatively lower in Harare in 2019/2020 (37%) and slightly higher in 2020/2021 (14%) compared to Epworth (44% in 2019/2020; 12% in 2021/2022). Treatment programmatic coverages were also significantly lower in 2020/2021 compared to the 2019/2020 programme period. For both districts, treatment rates were much lower in 2020/2021 compared to

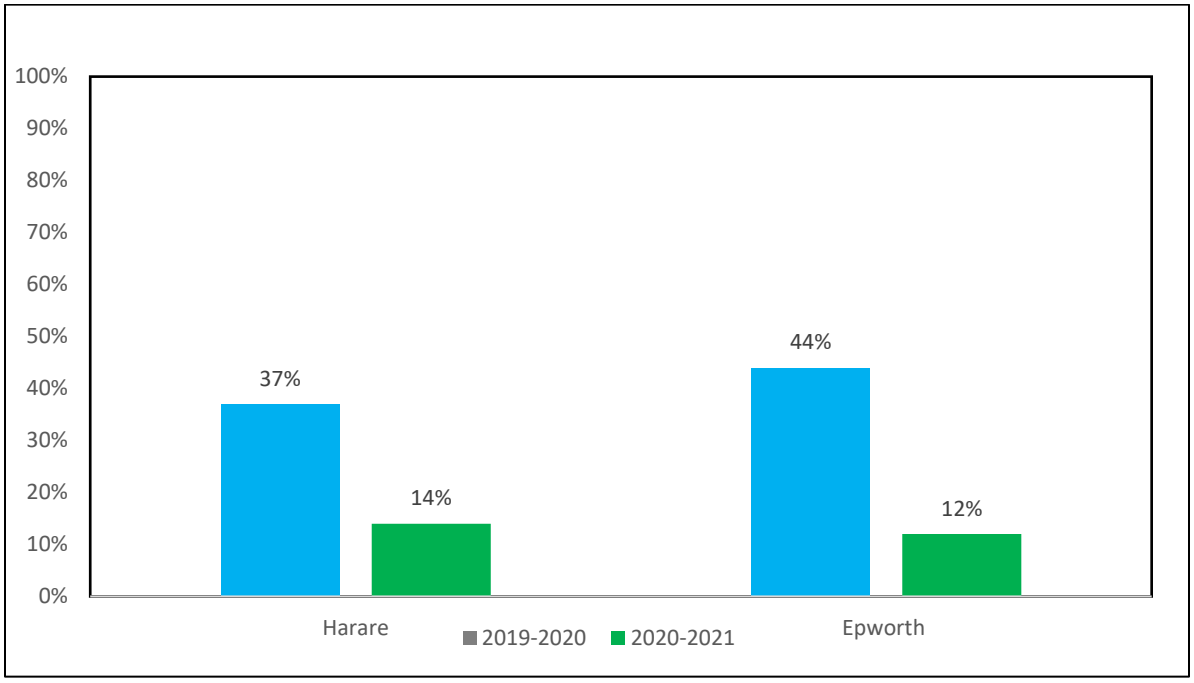
2019/2020. These results suggest disruption of services due to COVID-19 in 2020/2021 resulting in low utilisation/supply of services. Additionally, the findings suggest higher uptake of services among eligible women in Epworth compared to Harare which may be explained by awareness among women or service supply in Epworth.

Table 4*: Treatment of precancerous lesions statistics in Harare and Epworth from Zim-TTECH programme database*

Year	Harare			Epworth		
	Target*	**Results**	**% Achieved**	**Target***	**Results**	**% Achieved**
2019 -2020	1,954	717	37	474	705	44
2020 – 2021	1,954	279	14	474	316	12

*Targets based on an estimate of 6.5% derived from Gabaza et al (2019)

Figure 4: *Achievement (%) of Zim-TTECH programme in the treatment of pre-cancerous lesions in Harare and Epworth*



Results from the evaluation showed that LEEP was the main treatment type used in Harare and Epworth followed by cryotherapy and thermablation. Treatment coverage by LEEP or cryotherapy was significantly lower in 2020-2021 compared to 2019-2020 though treatment using thermoablation techniques increased slightly in the 2020-2021 period. Surprisingly, no LEEP treatments were reported in Harare in 2020-2021 (see Table 5). This may suggest that women who were eligible for LEEP were treated sub-optimally with other inappropriate methods such as cryotherapy/thermoablation or they were not treated at all, predisposing them to the risk of developing invasive disease.

Table 5: *Treatment of pre-cancerous lesions by type in Harare and Epworth from Zim-TTECH programme database*

Year	**Harare**			**Epworth**		
	Results by type of treatment			**Results by type of treatment**		
	Cryotherapy	LEEP	Thermoablation	Cryotherapy	LEEP	Thermoablation
2019-2020	83	252	0	23	186	0
2020-2021	30	0	7	15	19	24

Histological diagnosis of cervical cancer through biopsies and LEEP samples

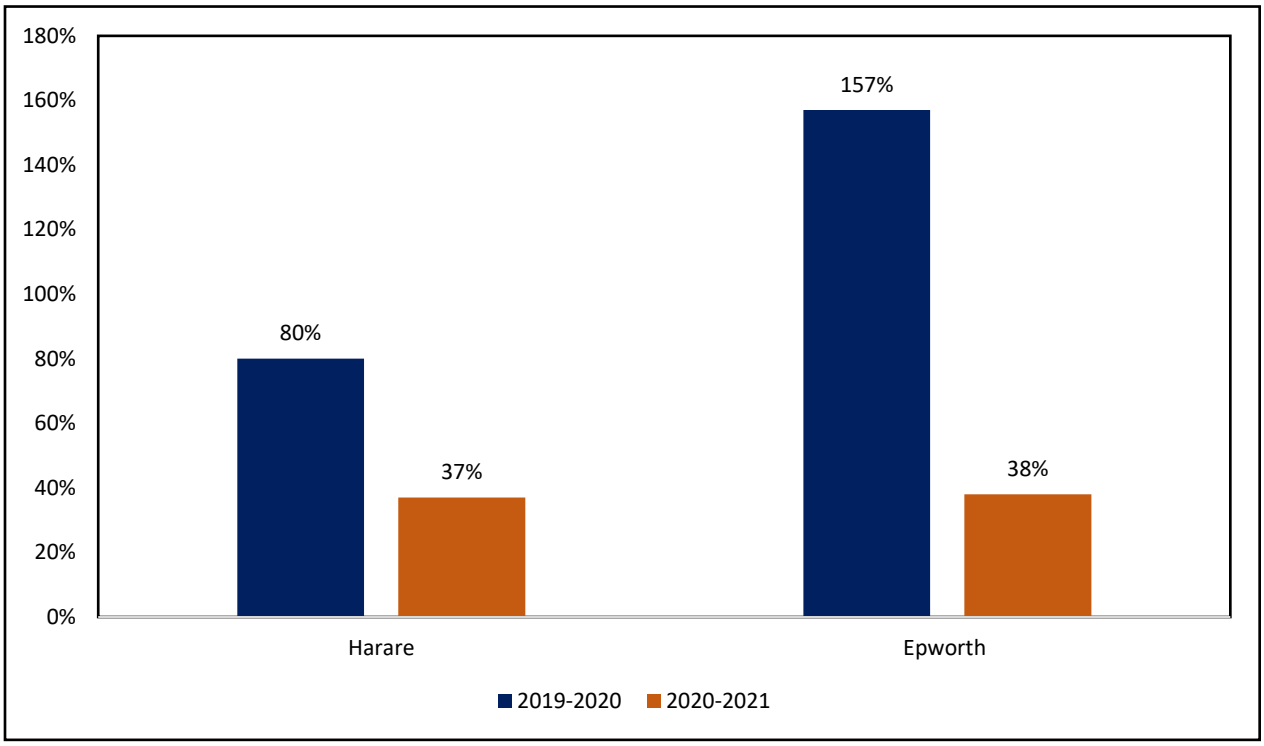
Performance for histological diagnosis referrals was high in both Harare and Epworth in 2019-2020 compared to the 2020-2021 period where it dropped significantly. In Epworth in the 2019-2020 period more women than the estimated eligible number were referred for histological diagnosis. The performance for Harare and Epworth in 2020-2021 were almost the same, 37% and 38% respectively (see Table 6 and Figure 4). These results suggest that access to diagnosis and treatment remains low among eligible women and this predisposes women to risks of advanced disease or early death.

Table 6: *Eligible women referred for histological diagnosis of cervical cancer in Harare and Epworth from Zim-TTECH programme database*

Year	**Harare**			**Epworth**		
	Target**	**Results**	**% Achieved**	**Target ****	**Results**	**% Achieved**
2019 - 2020	582	466	80	141	221	157
2020 – 2021	582	214	37	141	54	38

**Targets based on an estimate of 28.7% (LEEP) and 1.1% (biopsies for suspicious lesions) calculated from Gabaza et al (2019)

Figure 5: *Achievement (%) in histological diagnosis of cervical cancer in Harare and Epworth*



Referral for treatment of invasive cervical cancer

There was no data in the Zim-TTECH reports on the number of women diagnosed with cervical cancer who were referred for treatment, showing a gap in the programme monitoring data. Additionally, results from key informant interviews showed that there is high loss-to-follow-up among women suspected of cervical cancer from deaths, the pursuit of non-biomedical interventions i.e., traditional or spiritual and refusal of treatments due to misconceptions especially about radiotherapy and surgery which are associated with rapid disease progression or early deaths. The findings from this assessment showed that loss-to-follow-up is unquantified and those eligible women referred from the programme to be treated in public cancer treatment facilities are not followed up. This is demonstrated in the following key informant quotations below:

- "Most women are diagnosed in late stages of the disease and when referred for further investigations or treatment they take time and at times do not show up for services"
- "Cervical cancer is stigmatized, and women suspected or diagnosed of the disease may find it hard to face the reality of their health thereby preferring alternative interventions such as spiritual or traditional methods"

- "Some women have preferred not to get treated or get any assistance because of misconceptions/misinformation that some of the methods used like radiotherapy will accelerate dying or make one's situation even worse"

The estimated yearly number of women diagnosed and eligible for treatment of invasive cervical cancer from the Zim-TTECH programme were seven (7) and two (2) in Harare and Epworth respectively, based on estimates from Gabaza et al (2019).

Barriers to diagnosis and treatment of invasive cervical cancer

This evaluation showed, from key informant interviews and focus groups, some gaps in diagnosis but more so in the referral system for treatment of invasive cervical cancer in Harare and Epworth. While Zim-TTECH supports the diagnosis of cervical cancer among eligible women, loss to follow-up is also high due to the reasons cited in the section above. The referral system for treatment of invasive to public health facilities is also not monitored and once a patient is referred no follow-up is conducted under the programme.

Key informants had the following to say:

- "Our referral pathways are poor and not clear to patients such that when one is referred it may take even months to get services because of ill-structured systems"
- "There are only two major public health facilities that treat cervical cancer, and some women live in rural areas/far away places such that it may take a long time before they can engage with the treatment services they need"
- "Currently, private laboratories are providing most of the diagnosis and patients may not afford the services if they go there without a referral from an NGO supported programme"

Beneficiaries also alluded to the same barriers as above and this is illustrated in the following quotations:

- "One may be referred from one hospital to another and in some cases, you will be told that the machines are down and this will discourage us from going for treatment"
- "At times it takes a long time to obtain results from laboratories hence some women end up not following up their results"
- "Some health workers are not clear on the next steps and if you don't have some knowledge to help you, it is difficult to know where to go especially when you are suspected or have been confirmed to have cervical cancer"

Given the limited number of public cancer treatment facilities in Zimbabwe, the majority of women who are referred hardly get treated. Despite supply-side barriers to treatment mainly due to lack of resources, there are huge costs associated which are beyond the reach of many women. Furthermore, there are also misconceptions about radiotherapy and surgery which are associated with faster disease progress or early deaths. Beliefs that non-biomedical interventions such as traditional medicines or spiritual interventions are more effective are also rife in the country and these act as barriers to uptake of treatment modalities in public cancer facilities.

Summary of findings

This evaluation revealed that cervical cancer screening had increased in Harare and Epworth in 2019-2020 and 2020-2021. For Epworth, screening coverage increased by in 2020-2021. Screening programmatic coverage was relatively higher in Harare in 2019-2020 and lower in 2020-2021 compared to Epworth. Pre-cancer treatment coverage was relatively lower in Harare in 2019-2020 and slightly higher in 2020-2021 compared to Epworth. Treatment programmatic coverages were also significantly lower in 2020-2021 compared to the 2019-2020 programme period for both districts. Results from the evaluation showed that LEEP was the main treatment type used in Harare and Epworth followed by cryotherapy and thermablation. Treatment programmatic coverages for LEEP or cryotherapy were significantly lower in 2020-2021 compared to 2019-2021 though treatment using thermoablation techniques increased slightly in the 2020-2021 period. Performance for histological diagnosis referrals was high in 2019-2020 compared to 2020-2021 period where it dropped significantly. There was no data on the number of women diagnosed with cervical cancer who were referred for treatment from the Zim-TTECH reports, showing a gap in the programme. Additionally, this evaluation also showed that there is a high loss-to-follow-up among women suspected of cervical cancer from deaths and/or pursuit of non-biomedical interventions. The findings from this assessment also showed that loss-to-follow-up is unquantified and those eligible women referred from the programme to be treated in public cancer treatment facilities are not followed up. This evaluation showed some gaps/barriers in diagnosis but more so in the referral system for treatment of invasive cervical cancer which included: loss-to-follow-up, lack of monitoring of diagnosis and referrals for treatment, lack of resources in public cancer treatment/Ministry of Health to expand treatment services, high out-of-pocket costs of treatment and misconceptions about treatment modalities such as radiotherapy.

What are the positive or negative, intended or unintended, changes brought about by the programme?

As part of the outcome's assessment, the evaluation also considered positive and negative changes brought about by the Zim-TTECH cervical cancer intervention in addition to its contribution to capacity building in the Ministry of Health for the sustainability of intervention beyond the Zim-TTECH support.

Positive changes brought by Zim-TTECH intervention

This evaluation showed that the Zim-TTECH cervical cancer intervention contributed to increased screening and treatment of precancers among women, especially those living with HIV. The intervention also contributed to the early detection of pre-cancers and invasive diseases. Additionally, the programme is attributed to have increased health education and awareness of cervical cancer among women and health workers. Zim-TTECH contributed to the capacity building of health workers in screening and treatment of precancers in both Harare and Epworth.

The majority of participants reported that the Zim-TTECH project had contributed positively to cervical cancer services and this is illustrated below:

Key informants:

- "Zim-TTECH has been able to provide cervical cancer services free of charge to women who may not have afforded the services"
- "Early detection through routine screening for HIV positive women is preventing the presentation of cervical cancer at advanced stages"
- "Most women have gained more knowledge and acceptance of cervical screening and early treatment"
- "Health seeking behaviours among women have improved and in places like Mbare [Harare] women are now requesting for the services and not wait to be referred by health workers"

Beneficiaries:

- "Women have gained knowledge about the disease [cervical cancer], how it is contracted through early marriages and having multiple sexual partners"
- "……better health outcomes to many women as we are spreading more information and encouraging one another to get screened for cervical cancer"
- "Screening and treatment at health facilities are better and safer than traditional methods are used in the communities like the use of herbs"

Negative changes brought by Zim-TTECH intervention

This evaluation also showed some negative consequences of the Zim-TTECH intervention in the health care system of Zimbabwe. Firstly, the programme's screening resulted in the detection of invasive cervical cancer cases which were referred to weak and ill-capacitated public health facilities, where services are scarce. This results in psychological distress among patients and their families which has led to the entrenchment of misconceptions among some women. Some of the women beneficiaries interviewed reported that the unavailability of treatment services for cervical cancer results in some women not wanting to be screened for fear of the unknown upon diagnosis of invasive disease. Secondly, some of the women beneficiaries interviewed revealed that most screening services are offered in HIV clinics that results in some women who are HIV negative not wanting to screen for fear of stigma. For those living with HIV and are screened yearly, the targeting of HIV-positive women may also be predisposing them to stigma by society. Lastly, while Zim-TTECH has capacitated health workers, the programme also contributed to staff attrition in public health facilities as they search for better opportunities in the NGO sector and outside the country.

Some of the participants reported that the Zim-TTECH project had its negatives, and this is shown in the following quotations:

Key informants:

- "Zim-TTECH intervention is targeted at HIV positive women and not much attention is given to HIV negative women, who also need the services"
- "Women diagnosed with invasive cervical cancer are referred to Parirenyatwa Hospital [public health cancer treatment facility] and they are forced to use out-of-pocket payments as the services are not supported by the Zim-TTECH intervention or other partners"

Beneficiaries:

- "Referral pathway after diagnosis of precancerous or suspicious lesions is not clearly defined to a specific health facility such that it ends up being costly as we are referred to several health facilities before receiving treatment"
- "Women who are HIV negative do not have much information on cervical cancer compared to HIV positive women who frequently visit health facilities"

Summary of findings

This evaluation showed that the Zim-TTECH cervical cancer intervention contributed positively to the following areas: increasing access to cervical cancer services, early detection of pre-cancers and invasive

disease and increased health education and awareness of cervical cancer among women and health workers. The evaluation also revealed some negative implications of the Zim-TTECH intervention on the health system which include the following: the programme's screening resulted in the detection of invasive cervical cancer cases which were referred to weak and ill-capacitated public health facilities, and most screening services are offered in HIV clinics which results in some women who are not HIV positive not wanting to screen for fear of stigma and the programme also contributed to staff attrition in public health facilities as they search for better opportunities in the NGO sector and outside the country.

How did the programme respond to the evolving context; of COVID-19 and technological/practice changes in screening and treatment of cervical cancer?

In the context of COVID-19, this evaluation showed that the Zim-TTECH programme rapidly adjusted to the new protocols for infection control to ensure continuity of services. However, while the supply side was prepared for the COVID-19 pandemic in 2020, continuous lockdowns affected the logistics of women accessing services. Secondly, the Zim-TTECH intervention has followed national and international guidelines in terms of technological evolutions to improve services. Senior programme managers from Zim-TTECH and MoHCC reported that the programme had embraced new technologies including thermoablative techniques and is considering the Human Papilloma Virus (HPV) DNA testing with VIAC triaging as the primary screening approach. However, there are still ongoing debates on the adoption of the highly sensitive HPV testing as the primary screening approach as it will make the 'see and treat' approach impractical given the relatively longer turnaround times of HPV testing results.

Some key informants reported that the Zim-TTECH project had adapted to the COVID-19 protocols and technological/practice changes as shown below:

Key informants:

- "Cervical cancer services can only be offered in person which was challenging at the beginning of the COVID-19 pandemic but now people have learnt to live with it. Both patients and health workers are masking up and health facilities are trying to reduce contact times with patients"
- "Screening of cervical cancer was not stopped [during COVID-19 pandemic] but Zim-TTECH embraced COVID-19 preventive measures and encouraged women to be vaccinated"
- "Zim-TTECH is embracing new technologies such HPV DNA testing though they work hand-in-glove with the Ministry of Health and discussions have started on the potential adoption of the

HPV DNA screening. Pilots have also started among women aged above 50 years old as they are not eligible for VIAC screening"

- "Due to the mobility of outreach activities, measures were put in place to maintain privacy and thermal ablation techniques were advocated for due to the portability of the ablation machines"

Summary of findings

The Zim-TTECH cervical cancer programme rapidly adjusted to the new COVID-19 protocols in 2020 to ensure continuity of services though the demand was affected by protracted lockdowns. The programme has also been keeping in tandem with technological changes including the adoption of thermoablative techniques and planning for the rolling out of highly sensitive HPV DNA testing in line with the Ministry of Health and WHO guidelines. However, discussions are still ongoing on the adoption of HPV screening as the primary method as it will implicate the 'see and treat' approach.

Has the programme built sufficient capacity to allow for the continuation of the activities after ZIM-TTECH hands over the programme to the Ministry of Health and Child Health?

As with any donor-supported intervention, this evaluation has shown that cervical cancer screening and treatment of precancers in the Zim-TTECH supported facilities in Harare and Epworth will likely continue albeit at a lower scale once the donor funding has ended. The Zim-TTECH intervention is located in public health facilities that have been offering cervical cancer services at a lower scale and hence services are likely to continue should the support from Zim-TTECH cease. However, some challenges such as limited staff and commodities may results in de-prioritisation of cervical cancer services thereby reducing coverage and usage. Additionally, limited resources and competing priorities on the part of the government may further result in the scaling down of cervical cancer service supply in Harare and Epworth districts.

Some key informants reported that cervical cancer service provision could continue even after the end of Zim-TTECH intervention support though the scale/coverage could be reduced and this is demonstrated in the quotations below:

Key informants:

- "The plan was to match a Zim-TTECH health worker with a Ministry of Health counterpart for skills transfer but there has been staff attrition affecting both Ministry of Health and Zim-TTECH. Hence Ministry of Health staff are now prioritizing other departments which are also crippled by

staff attrition leaving the Zim-TTECH counterparts offering the cervical cancer services alone, therefore, defeating the original goal of capacity building"

- "The Ministry of Health has capacity to continue offering services [cervical cancer] since Zim-TTECH did not create parallel structures as everything is being done in public sector clinics and hospitals, however; there is a need for adequate resources to run the programme and if the government doesn't allocate the necessary resources it may be difficult to continue offering the services"
- "Equipment being used in the Zim-TTECH supported health facilities has already been donated to the Ministry of Health and transfer of skills to the Ministry of Health staff is also being done through training. However, the staff that have been trained are leaving the public services to join NGOs or leave the country hence shortages of staff may the major limitation for the continuation of services by the Ministry of Health"
- "Ministry of Health does not have the capacity to continue offering cervical cancer services and treatment services due to the current shortages of staff"

Summary of findings

This evaluation showed that cervical cancer services were likely to continue in Harare and Epworth after the cessation of Zim-TTECH support albeit at a lower scale. Zim-TTECH intervention is based in public health facilities that have been offering cervical cancer services even before partner support came through and these are likely to continue in their absence. However, some challenges such as limited staff, commodities, limited funding and competing priorities in the Ministry of Health may results in the de-prioritisation of cervical cancer services thereby reducing coverage and usage.

CHAPTER 4 - DISCUSSION

A discussion on the evaluation findings against reviewed relevant literature is presented in this chapter. Similar to the results chapter, these discussions are sequenced according to the evaluation questions.

Has the programme outcomes (short and medium term) been achieved?

The Zim-TTECH cervical cancer programme evaluation in Harare and Epworth districts revealed that the intervention had increased access to cervical cancer services notably screening, treatment of precancers, diagnosis and referral for treatment of invasive disease. The programmatic coverages for cervical cancer screening for 2019-2020 for Harare and Epworth were relatively high. However, there was a significant decrease in programmatic coverage in Harare in 2020-2021 while there was a marginal increase in Epworth in the same period. Considering the complexities of organising and running an opportunistic cervical cancer intervention, the programmatic results from the Zim-TTECH programme are encouraging. The findings suggest good capacity among health workers to both stimulate uptake through health education and awareness raising and provision of cervical cancer services. Additionally, findings also reveal the importance of organised, consistent, and efficient supply chains for essential commodities and equipment. A recent assessment of the Medesins San Frontiers (MSF) showed that scaled-up cervical cancer screening and treatment had been achieved through procuring equipment and commodities for six intervention health facilities and resulted in a cumulative screening coverage of 44% versus 5% for other comparable districts (MSF-OCB,2021). Studies have also shown the importance of training health workers to improve community awareness and uptake of cancer services (Rick et al., 2019; see also Umuago et al.,2020). A Tanzanian study which revealed that after a training programme, health workers had better care delivery, referral practices and education for the population also supports the findings of this assessment (Singer et al., 2021). Ansari et al.'s (2019) study results which revealed that training of community health workers on cervical cancer would trickle to the general population thereby increasing demand for services are also in tandem with evidence from this evaluation. Results of this Zim-TTECH evaluation are also consistent with those of a recent review which showed that regular training including on-the-job mentorship of health workers have created capacity in most health facilities across the country to provide cervical cancer services (Tapera et al., 2021). However, the decreases in programmatic coverages observed in 2020-2021 in Harare and Epworth are explained by service disruptions and protracted lockdowns necessitated by the COVID-19 preventative protocols (Murewanhema, 2021).

This evaluation revealed that programmatic coverages for pre-cancer treatment were relatively low for Harare and Epworth in 2019-2020 and much lower in the 2020-2021 period. Murewanhema (2021) reported significant service disruptions in cervical cancer services caused by the COVID-19 pandemic through both the supply and demand side factors. Infections of COVID-19 among health workers, lag times in implementing COVID-19 preventive protocols and protracted lockdowns which affected the logistics of patients and health workers may explain the reduced coverages realised in 2020-2021. Additionally, while most health facilities provide screening, treatment of pre-cancers is not always available in all health facilities. The results of this evaluation are consistent with the findings of the summative evaluation of the MSF-OCB cervical cancer intervention in the Gutu District which showed that the cryotherapy procedure, which is the most used approach depends on the availability of nitrous oxide gas and functional cryoguns. Procedures such as LEEP and thermoablation are not always available in all health facilities and in some instances, patients are referred to other facilities, causing loss-to-follow-up (Tapera et al.,2021; see also Holme et al.,2017; MSF-OCB, 2021). Other studies in low-middle income countries have shown significant gaps in cervical cancer service availability due to a lack of equipment and commodities in tandem with our findings (Adebamowo et al., 2014). Furthermore, the Zimbabwe Cervical Cancer Strategy review showed significant gaps in equipment and commodity supply chains which affected service availability across the country (Tapera et al., 2019b).

The performance of histological diagnosis referrals was high in both districts in 2019-2020 compared to the 2020-2021 period where it dropped significantly. This can be explained by the disruptions of services due to the COVID-19 pandemic (Murewanhema, 2021). Diagnostic services for cervical cancer are outsourced to private laboratories which are paid for by Zim-TTECH, however; this is not sustainable when partner/donor support ceases. Government pathology laboratories have been experiencing protracted resource and capacity shortages resulting in poor or no histology services available to cancer patients (MSF-OCB,2021; see also Tapera et al., 2019b). An Ethiopian assessment noted limited cervical cancer diagnostic capacity particularly in rural areas due to limited equipment, commodities, and human resources (Getachew et al., 2017) and these results are aligned with the findings of this evaluation. This evaluation also showed that there was no data on the number of women diagnosed with cervical cancer and those referred for treatment from the Zim-TTECH reports, showing a gap in the programme monitoring. High loss-to-follow-up among women suspected of cervical cancer from deaths and/or pursuit of non-biomedical interventions was also a key finding in this assessment. Loss-to-follow-up is unquantified and those eligible women referred from the programme to be treated in public cancer treatment facilities are not followed up. These results are supported by a Rwandan study which revealed

40-69% loss-to-follow-up among cervical cancer patients due to multiple factors (Habinshuti, 2020). High loss-to-follow-up reported in the MSF-OCB Gutu evaluation (MSF-OCB,2021) is also collaborated by the results from this present assessment. Some gaps/barriers in the diagnosis and referral system for treatment of invasive cervical cancer reported included loss-to-follow-up, lack of monitoring of diagnosis and referrals for treatment, lack of resources in public cancer treatment/the Ministry of Health to expand treatment services, high out-of-pocket costs of treatment and misconceptions about treatment modalities such as radiotherapy. These findings are well supported by those of Zimbabwe cervical cancer strategy review, the MSF- OCB Gutu evaluation and a recent study in Harare (Tapera et al., 2021; see also MSF-OCB, 2021; Tapera et al.,2019b). Adebamowo et al (2014) also showed in their analysis in low- and middle-income countries the same challenges/barriers to accessing care and treatment by cancer patients.

This evaluation showed the integration of the quality assurance activity of Zim-TTECH cervical cancer intervention through routines training, mentorship and support and supervision exercises by programme staff. However, there was no explicit evidence on quality assurance of screening and treatment procedures through quality audits/reviews. Furthermore, quality assessments of histology investigations were also not reported during this assessment. These findings are supported by a study in Central America which reported that some countries had developed and implemented quality assurance measures, but these had not been uniformly adopted (Holme et al., 2017). Additionally, a review of the Zimbabwe Cervical Cancer Strategy showed a lack of a quality assurance system for screening and treatment of cervical precancers and invasive diseases (Tapera et al.,2021), a status quo that has been sustained in the Zim-TTECH intervention.

There were some issues which could not be assessed due to lack of data particularly loss-to-follow up and the exact number of referrals for diagnosis and treatment of invasive cervical cancer in Harare and Epworth districts. Furthermore, the quality of care for screening, pre-cancer treatment, diagnosis and treatment of invasive disease could not also be interrogated as they were no systems put in place to monitor them. The Zim-TTECH programme adopted most of the components of the Ministry of Health standard of care and systems, including the inherent shortfalls. The Zim-TTECH programme should consider improving awareness of cervical cancer among HIV-negative women so that they are aware they are also at risk of contracting cervical cancer and dispel myths that cervical cancer only affects women living with HIV. Additionally, this awareness may also reduce the stigma among women living with HIV.

Strengthening of M&E system in the national programme by the MoHCC with support of NGO partners is critical to improve monitoring and evidence generation. There are; however, some opportunities for Zim-TTECH to re-model its programme approach to improve service delivery, contribute to wider systems strengthening as well as standardise some good practices from other similar contexts. More flexible programming models are imperative for systems strengthening of all critical services including diagnosis and treatment of invasive diseases which have been relegated to private players and the ill-resourced public cancer treatment centres respectively. Partners like Zim-TTECH and others have an opportunity of leveraging on existing good relations with the MoHCC to advocate the government to prioritise more investments to strengthen and establish more public cancer treatment centres across the country. Additionally, advocacy and support by NGO partners to the MoHCC to strengthen leadership in the national cervical cancer programme at the central level will minimise duplication of activities and direct partners in areas with protracted gaps/challenges such as diagnosis and treatment of invasive cervical cancer.

What are the positive or negative, intended or unintended, changes brought about by the programme?

This evaluation showed that the Zim-TTECH cervical cancer intervention contributed positively to the health system by increasing access to cervical cancer services, enabling early detection of pre-cancers and invasive diseases and increasing health education and awareness for cervical cancer among women and health workers. However, some negative implications of the Zim-TTECH intervention on the health system were also noted and these included the referral of invasive cervical cancer cases to weak and ill-capacitated public health facilities, a bias of screening services in HIV clinics which results in some women who are not HIV positive not wanting to screen for fear of stigma and the programme also contributed to staff attrition in public health facilities as they search for better opportunities in the NGO sector and outside the country. These results are collaborated by the MSF-OCB Gutu evaluation which showed the same positive contributions of the intervention (MSF-OCB, 2021). The recent review of the Zimbabwe cervical cancer strategy also showed gaps that are linked to the negative implications of the national cervical cancer programme notably scaling up cervical cancer screening and diagnosis in a context with limited treatment services for invasive cervical cancer.

The positives of the intervention could be sustained through continuous programme improvement as well as the adoption of innovative service delivery models. The negatives, similarly, could be addressed by re-modelling the intervention within Zim-TTECH in addition to collaborating with other NGO partners to

strengthen the diagnosis and treatment of invasive diseases in public cancer centres and agreeing on the most effective service delivery models that would reduce fostering stigma and misconceptions. Commencement of any screening programme will lead to the identification of women with invasive cancer, therefore, NGOs and MoHCC should develop/strengthen and adopt clear referral plans before the commencement of screening interventions. Through the NGO partners forum, Zim-TTECH and other NGOs could advocate and support the Ministry of Health to play a key leadership role in coming up with a standardised package of interventions and coordinating partners to ensure holistic service provision from screening to the treatment of invasive disease, while also reducing inefficiencies from duplications.

How did the programme respond to the evolving context- COVID-19 and technological/practice changes in screening and treatment of cervical cancer?

This evaluation demonstrated that when the COVID-19 pandemic started in 2020 Zim-TTECH rapidly adjusted to the new preventive protocols to ensure continuity of services though the demand was affected by protracted lockdowns. The findings from this evaluation suggest that the programme has also been keeping in tandem with technological changes including the adoption of thermoablative techniques and planning for the rolling out of highly sensitive HPV DNA testing in line with the Ministry of Health and WHO guidelines. Though the implementation of the latter approach is still to be agreed upon and finalised at the Ministry of Health level.

Recently the WHO recommended the use of highly sensitive and specific screening approaches to eliminate cervical cancer (Canfell,2019). Zimbabwe has also started considering the WHO guidance though lack of resources and competing priorities may stand in the way of full implementation of the recommendations in the short-medium term. However, there are contestations that the adoption of HPV DNA testing as a primary method for cervical cancer could negatively affect the 'see and treat' approach and this may result in increased loss-to-follow up, low pre-cancer treatment rates and high incidences of cervical cancer over time. A recent study in Ethiopia also weighed in on the debates reporting that scaling-up HPV-based screening would require proper evaluation of the capacity of the health system in addition to strengthening the presence of a point of care to efficiently process the collected samples (Gizaw et al., 2019).

Has the programme built sufficient capacity to allow for the continuation of the activities after ZIM-TTECH hands over the programme to the Ministry of Health and Child Health?

This evaluation also assessed the feasibility of cervical cancer service continuation when Zim-TTECH support ceases and findings suggest that services were likely to continue in Harare and Epworth albeit at a lower scale. The model used by the Ministry of Health required that the Zim-TTECH intervention be based in public health facilities that were already offering cervical cancer services though at a lower scale and these are likely to continue in the absence of partner support. However, some imminent challenges such as limited staff, commodities, limited funding and competing priorities in the Ministry of Health may threaten the de-prioritisation of cervical cancer services thereby reducing coverage and usage.

The MSF-OCB Gutu evaluation (MSF-OCB,2021) also revealed the same findings that while services could continue after the handover of the project to the Ministry of Health, lack of resources including human resources and supplies and competing priorities could reduce the service supply and access. Some of the gains that the country has observed in the last couple of years are at risk of being eroded should the gaps/challenges outlined not be addressed before the cessation of partner/donor support. There are opportunities for better and more sustainable partnership models than the prevailing ones which largely depend on donor funding/prescriptions.

The programme model used by Zim-TTECH to provide cervical cancer services was effective in building capacity in targeted health facilities and ensuring the sustainability of services beyond the Zim-TTECH support. This model has been used by different other NGO partners but with varying approaches to building capacities. The training and mentorship of public service health workers in addition to supporting the procurement of equipment and commodities were notable contributions of the Zim-TTECH programme to provide services, set standardised care and building capacity in the Ministry of Health. Despite the efforts to build capacities by Zim-TTECH, cervical cancer services are likely to scale down should donor support cease due to a lack of resources, staff attrition and competing priorities on the part of the Ministry of Health. However, there are also opportunities for Zim-TTECH and other NGO partners to advocate the government to consider including cervical cancer screening and treatment of pre-cancers in pre-service nurse and medical training to curb the gaps being created in health facilities due to staff turnover/attrition.

Conclusions

Findings from this evaluation showed that Zim-TTECH cervical cancer intervention was relatively effective with regards to short-medium term outcomes, although the COVID-19 pandemic saw disruptions of cervical cancer services which affected service delivery/uptake in 2020-2021. However, the key shortfalls

of the intervention revealed in this evaluation showed systemic/structural gaps with the design of health interventions in the country as well as the vertical approaches which are also being perpetuated by donors. Additionally, given the huge resource shortfalls in the MoHCC due to protracted underfunding, there is evidence of limited coordination/leadership capacities to guide partners who come up with piecemeal interventions. Despite the revealed shortcomings of the intervention there are opportunities to improve services including treatment of invasive cervical cancer. However, to achieve this, paradigm shifts on the part of government (MoHCC), NGOs and donors will be imperative. For government, defining priority areas for wider systems strengthening including capacitating health facilities for continuum of cancer care from screening to treatment would be critical. Furthermore, provision of programme leadership by MoHCC to develop optimal packages of interventions and coordinating partners in priority areas to improve programme efficiencies is also critical. On the part of NGOs, the strategic direction would be to develop programmes/interventions that focus on the continuum of care and support wider systems strengthening. This will also support sustainability of MoHCC intervention and cross pollunate with other interventions for better efficiency and population level health outcomes. While traditionally donors tend to be prescriptionary, governments supported by NGOs could advocate for more flexible programming to promote continuum of care for cervical cancer and systems strengthening. In addition, there should also be considerations for underfunded/neglected thematic areas such as diagnosis and treatment of invasive disease. Overall, better partnerships and coordination among government, NGOs and donors will be a game changer in ensuring continuity of services for cervical cancer in low-resource settings.

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Appendix A: Approval Letters and Ethical Clearance

Telephone: +263-4-730011

Telegraphic Address:
"MEDICUS", Harare
(702293 FHP)
Telex: MEDICUS 22211ZW

ZIMBABWE

Reference:

Ministry of Health and Child Welfare
P. O. Box CY1122
Causeway
HARARE

24 May 2021

Dear Dr O Tapera
4 Leopard Close
Borrowdale
Harare

Re: **APPLICATION FOR APPROVAL TO EVALUATE THE ZIMTECH CERVICAL CANCER SCREENING AND TREATMENT PROGRAMME AS PART ON AN MPHIL DISSERTATION**

Reference is made to your letter dated 20 May 2021.

The Ministry of Health and Child Care has granted you permission to evaluate the ZIMTECH cervical cancer screening and treatment intervention that is being implemented in some provinces across Zimbabwe.

SECRETARY FOR HEALTH AND CHILD CARE
11 JUN 2021
P.O. BOX CY 1122, CAUSEWAY
ZIMBABWE

Air Commodore Dr.J. Chimedza
SECRETARY FOR HEALTH AND CHILD WELFARE

CITY OF HARARE

All correspondence to be addressed to the
DIRECTOR OF HEALTH SERVICES

DIRECTOR OF HEALTH SERVICES
Rowan Martin Building, Civic Centre,
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Director of Health Services

DR PROSPER CHONZI
MBChB, MPH

Ref: 3/7

Your Ref:

6 December 2021

Dr Oscar Tapera
University Of Capetown
c/o Min Of Health and Child Care
Harare

Dear Sir,

RE: Request For Approval To Conduct An Evaluation titled "An outcomes evaluation of the ZIM-TTECH cervical cancer intervention in Harare Metropolitan Province, Zimbabwe"

I refer to the above subject matter.

Permission has been granted to you to conduct the above mentioned evaluation.

Please note that you will be expected to share your study findings with the Harare City Health Department through the Director's office. Do Not hesitate to conduct the ethics Committee for any help during your study.

Yours Faithfully

DIRECTOR OF HEALTH SERVICES
lc/

CITY OF HARARE
CITY HEALTH DEPARTMENT
RECEPTION
17 DEC 2021
TEL: 024 2753326/7

Telephone: 24207/8, 24571

Telegraphic Address:
"PROVMED, MARONDERA"
Fax: 23967

ZIMBABWE

Reference:

MINISTRY OF HEALTH AND CHILD CARE
PROVINCIAL MEDICAL DIRECTOR
(MASHONALAND EAST)
P.O.BOX 10
MARONDERA
ZIMBABWE

19th January 2022

The District Medical Officer
SEKE DISTRICT

RE: PERMISSION TO COLLECT DATA : UNIVERSITY OF CAPE TOWN STUDENT

The above matter refers.

Permission has been granted for Dr Oscar Tapera to conduct the above-mentioned exercise in Seke District.

May you kindly assist.

Kind regards

MIN. OF HEALTH & CHILD CARE
PMD MASHONALAND EAST
19 JAN 2022
P.O. BOX 10 MARONDERA

Dr P. F Matsvimbo
ACTING PROVINCIAL MEDICAL DIRECTOR - MASHONALAND EAST

/sk

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16 11 2021

Oscar Tapera

School of Management Studies

University of Cape Town

REF: REC 2021/11/013

An outcome evaluation of the Zim-TTECH cervical cancer intervention

in Harare Metropolitan Province, Zimbabwe

We are pleased to inform you that your ethics application has been approved. Unless otherwise specified this ethical clearance is valid until 31-Dec-2022 .

Your clearance may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires, or choice of participants.

The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.

2021.11.16
15:27:14 +02'00'

Jacques Rousseau
Commerce Research Ethics Chair
University of Cape Town
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Appendix B: Key informant interview guide

Introduction

Hello. My name is Oscar Tapera and I am an MPhil Student studying at the University of Cape Town, South Africa. I am assessing the Zim-TTECH cervical cancer intervention in Harare and Epworth as part of my master's dissertation. You have been selected because I believe that you have been a key stakeholder in the Zim-TTECH cervical cancer intervention. I will be asking you questions about the intervention and please feel free to let me know what you are not knowledgeable about. The interview will take not more than 30 minutes. For this interview I am going to be using a smartphone to audio-record our discussion and would that be okay with you?

Do you have any questions for me before we proceed?

Would you like us to proceed with the interview?

Key questions

Has the programme outcomes (short and medium term) been achieved?

1.1 Are targeted women aware of cervical cancer?

1.2 Are targeted women accessing cervical cancer services?

1.3 Are targeted women utilizing cervical cancer services?

1.4 Are targeted women being diagnosed and treated for precancers and early invasive disease?

What are the positive or negative, intended or unintended, changes brought about by the programme?

How did the programme respond to the evolving context- COVID-19 and technological/practice changes in screening and treatment of cervical cancer?

Has the programme built sufficient capacity to allow for the continuation of the activities after ZIM-TTECH handover the programme to Ministry of Health and Child Care?

Appendix C: Focus group discussion guide

Introduction

Hello. My name is Oscar Tapera and I am an MPhil Student studying at the University of Cape Town, South Africa. I am assessing the Zim-TTECH cervical cancer intervention in Harare and Epworth as part of my master's dissertation. You have been selected because we believe that you/your partner/relative have received cervical cancer services offered by _____(Name of Health Facility) supported by Zim-TTECH. We have put you in a group and we will be asking you some questions about the intervention and please feel free to let us know what you are not knowledgeable about. You will ask you to raise your hand if you have something to say and I may also point you say what you think about what we will ask. The discussion will take not more than 60 minutes (1hour). For this discussion we are going to be using a smartphone to audio-record our discussion and would that be okay with you?

Do you have any questions for me before we proceed?

Would you like us to proceed with the interview?

Key questions

1. In what way have you /your partner/relative participated in cervical cancer interventions offered at_____[Name of health facility]?
2. What do you know about the cervical cancer services offered in this health facility? How did you get information?
3. What have been the most significant challenges in accessing cervical cancer services [*screening, prevention and treatment*] that you or your partner/relative have experienced before this health facility started offering cervical cancer services? How did these challenges affect you or your partner/relative?
4. What services or other support have you/your partner/ relative received from this health facility? What type of services did you/they receive, when and where?
5. Have cervical cancer services provided by_____ [Name of health facility] to you/ your partners/relative made a difference in your/their life? If yes, how has your/their life been changed?
6. What have been the most important change brought about by the cervical cancer intervention to you or your partner/relative or community? Any other changes that you can think of brought about this intervention?

Appendix D: List of documents reviewed

Zim-TTECH Programme document

- Zim-TTECH Workplan: 2020 – 2021
- Programme reports: 2019 – 2021
- Programme data: 2019 – 2021
- Zim-TTECH website
- PEPFAR 2020 Country Operational Plan

Ministry of Health and Child Care document

- VIAC based cervical cancer screening and management Practical Manual, 2012
- Zimbabwe Cervical Cancer Prevention and Control Strategy, 2016-2020
- Zimbabwe National Cancer Prevention and Control Strategy, 2013-2017

WHO guidelines/documents

- Global strategy on the elimination of cervical cancer,2018
- Working Group on HPV, Report to SAGE, 2018
- Guide to introducing HPV vaccine into national immunization programmes, 2016
- Scaling-up HPV vaccine introduction, 2016
- Monitoring national cervical cancer prevention and control programmes: quality control and quality assurance for visual inspection with acetic acid (VIA)-based programme,2013
- Comprehensive cervical cancer control. A guide to essential practice. Second Edition,2014

External Literature reviewed

- Health systems challenges in cervical cancer prevention program in Malawi, Maseko et al.,2015
- Cervical cancer in Zimbabwe: a situation analysis, Kuguyo et al., 2017
- Health service delivery models entrenching inequities to treatment and care among women with cervical cancer in Harare, Zimbabwe, Tapera et al., 2019
- Gaps and opportunities for cervical cancer prevention, diagnosis, treatment and care: evidence from midterm review of the Zimbabwe Cervical Cancer Prevention and Control strategy (2016-2020), Tapera et al., 2020
- Human papillomavirus (HPV) vaccine implementation in low and middle-income countries (LMICs): Health system experiences and prospects, Wigle et al.,2013
- Factors Influencing the Cost-Effectiveness Outcomes of HPV Vaccination and Screening Interventions in Low-to-Middle-Income Countries (LMICs), Okeah et al.,2020
- Programmatic implementation of HPV testing in Central America, Holmes & Contreras, 2016
- HPV testing in self collected samples in Uganda, Ogilvie & Nakisige,2015
- Screen and treat with HPV testing in LMIC countries, Rani & Petignat
- Australia on-track to be the first country to achieve cervical cancer elimination, Canfel., et al
- HPV based cervical cancer screening in US, Wentzesen & Schiffman
- Primary HPV screening in the US with the Cobas® assay, Cohen &Huh
- Experiences with the use of HPV testing in cervical cancer screening in Sweden, Dillner & Elfstrom

- Cervical cancer screening in sub-Saharan Africa: A randomized trial of VIA versus cytology for triage of HPV-positive women, Bigoni et al., 2014
- Cervical cancer screening service utilization and associated factors among HIV positive women attending adult ART clinic in public health facilities, Hawassa town, Ethiopia: a cross-sectional study, Assefa et al.,2019
- Revised FIGO staging for carcinoma of the cervix uteri, Bhatla et al.,2019
- Clinical tumor diameter and prognosis of patients with FIGO stage IB1 cervical cancer, Kato et al.,2015
- Does introduction of user fees affect the utilization of cervical cancer screening services in Nigeria?, Nyengidiki et al.,2019
- Determinants of access and utilization of cervical cancer treatment and palliative care services in Harare, Zimbabwe, Tapera et al.,2019

Appendix E: List of evaluation participants

List of Key informants (11)

Name of Participants	Organization/Function	Mode of interview
Dr. Phibion Manyanga	Zim-TTECH; Senior Programme Manager	Zoom
Dr. Gloria Gonese	Zim-TTECH; Head of Programmes	Zoom
Dr. Bothwell Guzha	University of Zimbabwe; Consultant Gynaecological Oncologist	Zoom
Dr. Colin Marembo	City of Harare, Department of Health; Programme Manager	Zoom
Sandra Murwira	Ministry of Health and Child Care; VIAC Coordinator	Zoom
Dr. Lucio Gondongwe	Ministry of Health and Child Care; Director of Family Health	Zoom
Sr -in- Charge	City of Harare, Glen Norah Clinic	Face-to-face
Sr-in- Charge	City of Harare, Highfields Clinic	Face-to-face
Sr-in- Charge	Ministry of Health and Child Care, Overspill Clinic	Face-to-face
Zim-TTECH Mentor	Zim-TTECH; VIAC Mentor at Warren Park Clinic	Face-to-face
Zim-TTECH Mentor	Zim-TTECH; VIAC Mentor at Overspill Clinic	Face-to-face

List of focus group discussions conducted (2)

Focus groups			Characteristics	Location
Women		6	HIV+, accessed cervical cancer screening and, cryotherapy/thermocoagulation or LEEP • 3 aged 25-40 years • 3 aged 41-49 years	Beatrice Hospital – Harare Overspill Clinic-Epworth
Women		6	HIV+, 1 HIV-, accessed cervical cancer screening and, cryotherapy/thermocoagulation or LEEP	

			• 4 aged 25-40 years • 2 aged 41-49 years	