

# Field Epidemiology Training Program

## Cancer Curriculum: Principles of Cancer Screening Programs

**Case Study:  
Establishing and Expanding a  
Cancer Screening Program in  
Zimbabwe**

**PARTICIPANT GUIDE**



## Overview

Participants will apply what they learned in Module 4: *Principles of Cancer Screening Programs* to the issue of cervical cancer prevention in Zimbabwe. Participants will work in small groups as instructed by the Facilitator.

## Objectives

At the end of this exercise, participants should be able to:

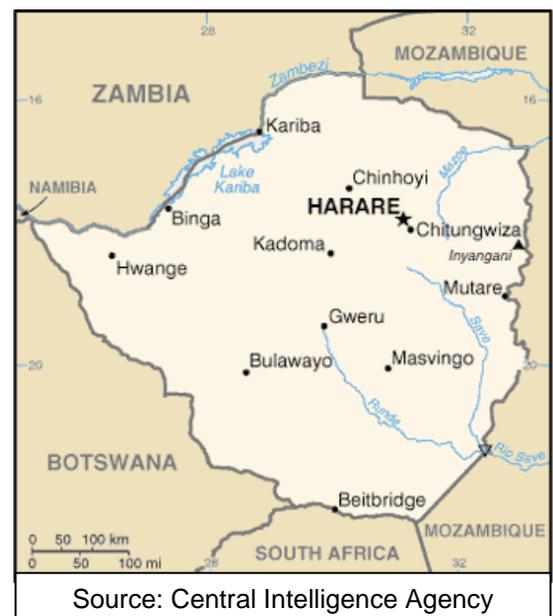
- Learn the various data sources that can be used to examine cancer burden on a national level
- Work through a sample scenario from Zimbabwe to assess the impact of socioeconomic determinants on women's knowledge of cervical cancer and cervical cancer screening in Zimbabwe
- Understand how different information from population-based surveys and patient medical records can be used to evaluate cervical cancer screening efforts, and discuss the utility of epidemiological data for public health action

## Scenario

Zimbabwe's cancer prevention and control program is largely underfunded. However, there is a growing support from a few partnerships to support cancer prevention and control efforts in Zimbabwe. You have been working on cervical cancer prevention programs around the world and have recently been hired by the Zimbabwean government to examine existing data on cervical cancer screening in Zimbabwe and provide an evaluation of current screening efforts. You were asked by the government to assess the impact of socioeconomic determinants on women's knowledge of cervical cancer and cervical cancer screening. Given the limited resources for cancer prevention and control in Zimbabwe, you need to present a convincing argument to justify which screening cervical cancer screening strategy and factors to consider in expanding the cervical cancer screening program in Zimbabwe. You will present a summary of key findings to the government of Zimbabwe and key stakeholders.

## Background

Zimbabwe is a low-income country and has a population of about 14 million, with 33% of the population living in urban areas. Zimbabwe's population is relatively young, 60% of the population is below the age 25 years, and only 3% is 65 years or older. Over the past two decades, life expectancy has increased in Zimbabwe from 48 years in 1996 to 59 years in 2015. Between 2001 and 2015, Zimbabwe spent 2.5% of its gross domestic product on health. The burden of cancer is increasing in Zimbabwe due to population growth and aging. Although many cancers are not captured by the routine National Health Information System because the patients do not present for treatment or register deaths, those who do report are usually at an advanced stage of disease, and have limited access to screening services. The current cancer treatment and palliation services are unable to meet the existing demand. Additionally, and despite great



progress in reducing HIV prevalence in recent years, the prevalence of HIV in Zimbabwe remains one of the highest in the world; this is a challenge for cervical cancer control efforts since HIV-positive women are more likely to have persistent HPV infections than HIV-negative women. To address the rising cancer burden, a National Cancer Prevention and Control Strategy was developed to focus on the reform and reorganization of the way cancer services are delivered in Zimbabwe, in order to ensure that future services are consistent and associated with good clinical outcomes for all cancer patients and quality care for the patients and their care givers.

## Instructions

We have 90 minutes to work through this case. Review the background material (provided in your guide). Work in groups to answer the questions in your guide and follow the steps to:

- Understand the burden of cancer
- Evaluate the uptake of cervical cancer screening
- Make the case of how funds need to be allocated

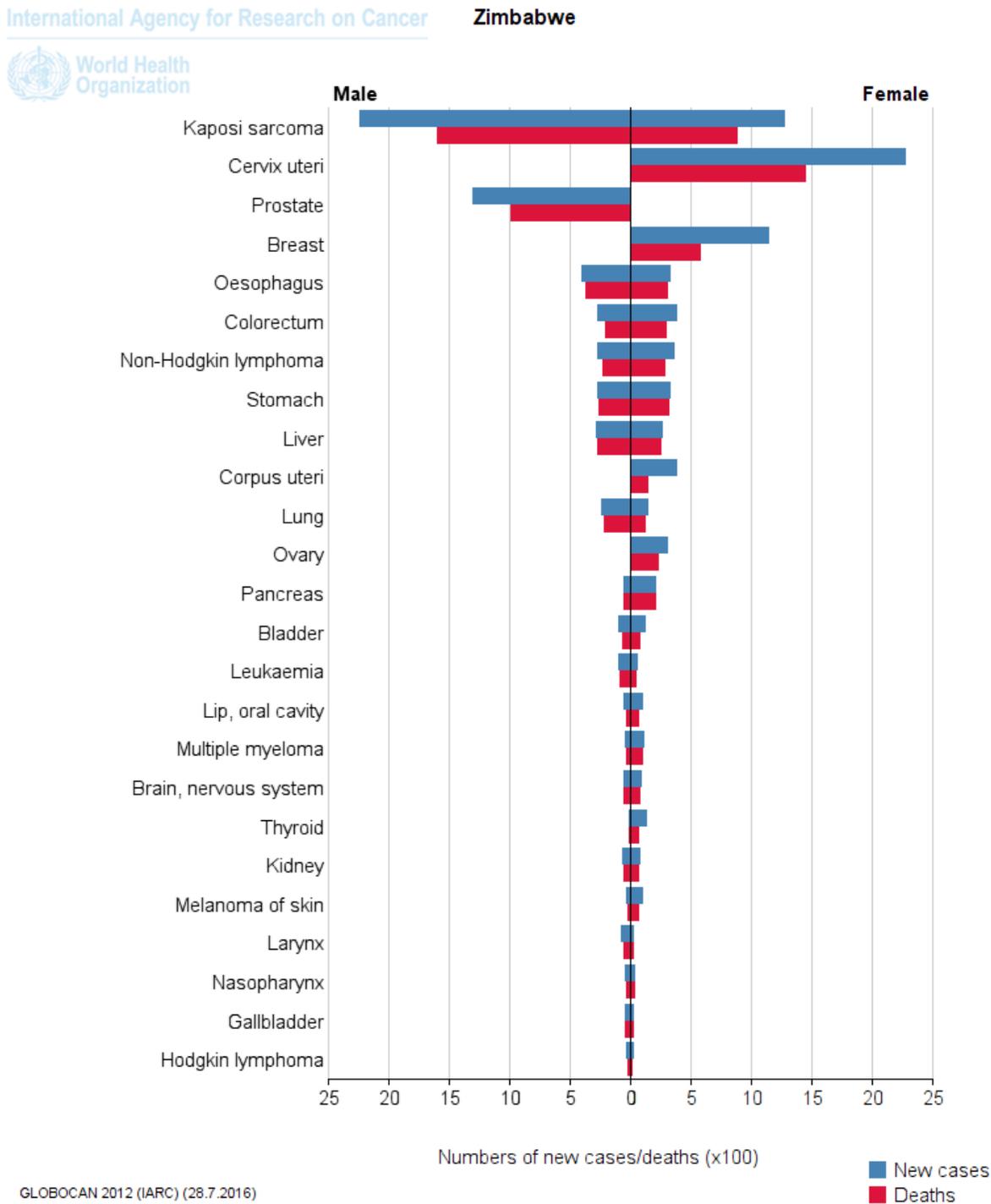
Required readings for the related to the Uganda Cancer Registry include:

- Annex 1: Fallala MS, Mash R. Cervical cancer screening: Safety, acceptability, and feasibility of a single-visit approach in Bulawayo, Zimbabwe. *Afr J Prim Health Care Fam Med*. 2015 May 5;7(1). doi: 10.4102/phcfm.v7i1.742.
- Annex 2: Bruni L, Barrionuevo-Rosas L, Albero G, Serrano B, Mena M, Gómez D, Muñoz J, Bosch FX, de Sanjosé S. ICO Information Centre on HPV and Cancer (HPV Information Centre). Human Papillomavirus and Related Diseases in Zimbabwe. Fact Sheet 2017. Available from <http://www.hpvcentre.net/summaryreport.php>. Accessed 7/27/2017.
- Annex 3: Country Capacity (pages 7-9 of this guide)

Optional readings:

- Nyakabau, AM. "Priorities for cancer prevention and control in Zimbabwe." *Cancer Control*, June 25 (2014). Available from <http://www.cancercontrol.info/wp-content/uploads/2014/08/126-130-Nyakabao.pdf>

**Figure 1. Estimated cancer incidence and mortality in Zimbabwe in 2012**



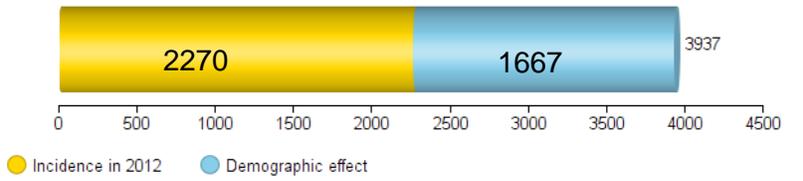
- Cancers related to infectious agents (Kaposi sarcoma, cervix, stomach, liver) are among the leading types of cancer related morbidity and mortality in both sexes in Zimbabwe
- Lung, breast, colorectal and prostate cancer are also common causes of cancer morbidity and mortality in Zimbabwe

**Figure 2. Estimated increase in (a) incidence and (b) mortality from cervical cancer in Zimbabwe by the year 2030**

International Agency for Research on Cancer



Zimbabwe  
 Cervix uteri  
 Number of new cancers in 2030 (all ages)

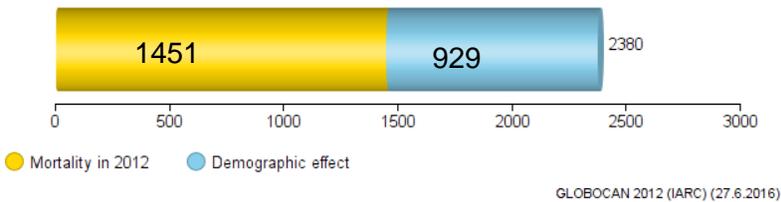


- Cervical cancer was the leading cancer diagnosis and cause of cancer-related deaths among women in 2012.

International Agency for Research on Cancer



Zimbabwe  
 Cervix uteri  
 Number of cancer deaths in 2030 (all ages)



- GLOBOCAN projections indicate that the burden of cervical cancer will increase by 65% to 75% by the year 2030 due to demographic changes

## GLOBOCAN Methods

### Data sources and methods (summary) - Indices of quality (C6)

#### Incidence

Data: high quality regional (coverage lower than 10%).

Method: estimated as the weighted average of the local rates.

#### Mortality

Data: no data.

Method: estimated from national incidence estimates using modelled survival.

### Methods (detailed)

#### Incidence

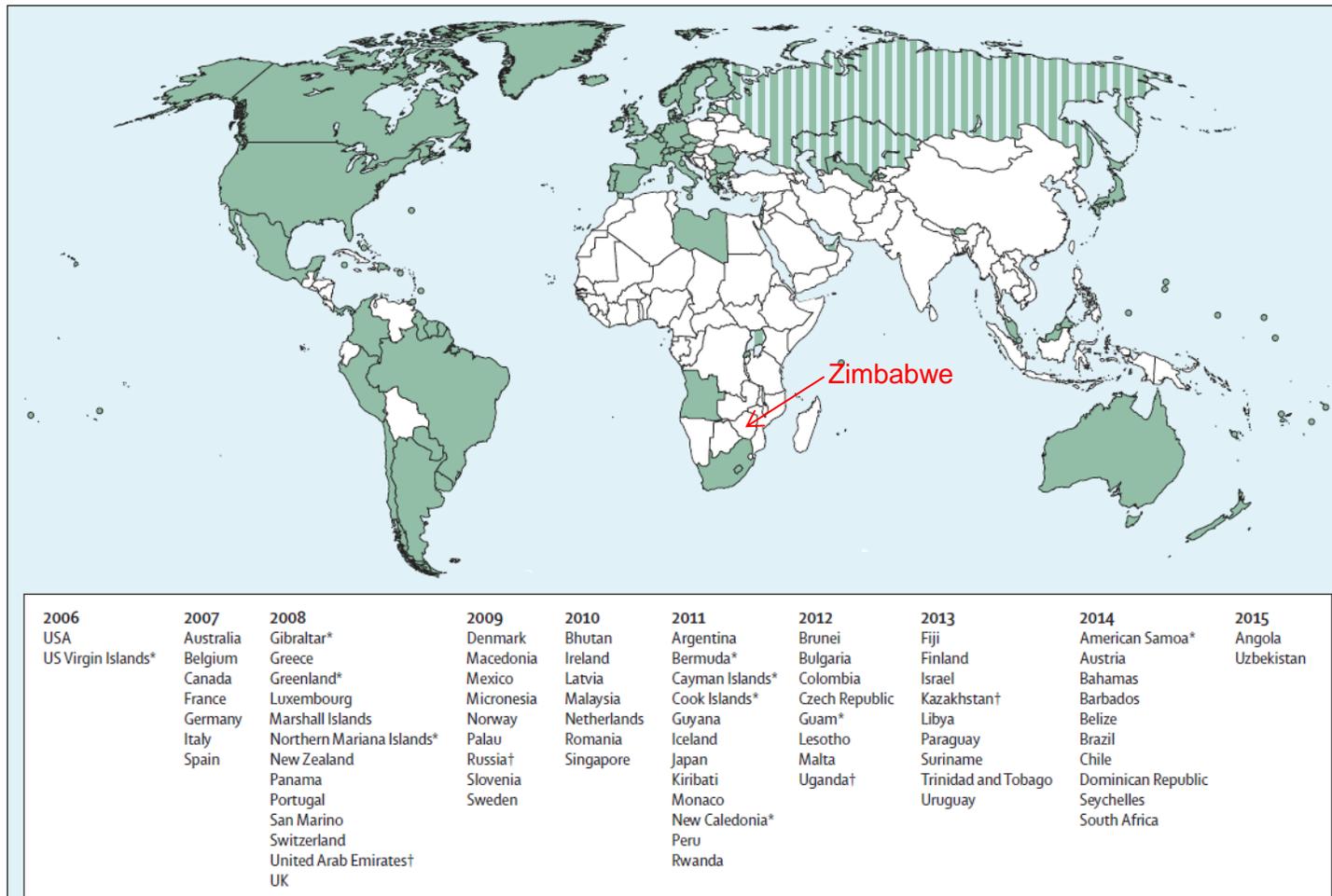
Weighted average of the rates from:

1. Bulawayo Cancer Registry (2000-2001)
2. Harare Cancer Registry (2009-2011), black population

#### Mortality

Estimated from estimated national cancer incidence for 2012 and modelled survival.

**Figure 4: Countries that have introduced a publicly funded national human papillomavirus vaccination program since 2006**



Currently Zimbabwe, has not introduced a publicly funded national HPV vaccination program

Striped sections indicate implementation in a part of the country. French Polynesia, Liechtenstein, and Niue have reported vaccine programs, but no information was available about year of introduction. \*Special territory. †Partial implementation.

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## Annex 3: Country Capacity

### National Cancer Prevention and Control Strategy for Zimbabwe 2013-2017

Source: Zimbabwe Ministry of Health and Child Welfare. The National Cancer Prevention And Control Strategy For Zimbabwe 2013 - 2017. Available from <http://www.iccp-portal.org/sites/default/files/plans/CANCER%20STRATEGY%20FINAL%202013%202017.pdf>. Accessed April 2016.

#### Availability of diagnostic services for cancer:

- Plain X-rays: taken at district, provincial or central hospitals
- Biopsy: Provincial and Central hospitals and few mission hospitals
- Cytology: very limited but offered by private laboratories at a cost
- Computerized Tomography (CT) scanning is available in Harare and Bulawayo.
- The private sector offers CTs at reasonable service at a cost.
- Public facilities for CT scanning are inadequate and non-functional most of the time.
- Mammography is available in private institutions and recently one machine has been installed and commissioned in the government sector at Parirenyatwa Hospital
- Magnetic Resonance Imaging (MRI): available in private institutions (very expensive)
- Brachytherapy equipment for gynaecological cancers: Mpilo Hospital and Parirenyatwa Hospital (new acquisition).

#### Availability of treatment services for cancer:

- Pharmacies: Parirenyatwa and Mpilo Hospitals
- Chemotherapy drugs are expensive and are not always available there.
- Patients who are prescribed chemotherapy medications must try to obtain them at private pharmacies
- In pediatrics, chemotherapy drugs are mainly supplied by Kidzcan.

#### Diagnostic radiology

- Most district, provincial and central hospitals are currently unable to provide diagnostic radiology services (non-functional old equipment and human resource shortage)
- Computerized Tomography (CT) scanning: used to be available in the public sector in Harare and Bulawayo. Public facilities for CT are inadequate and have been non-functional for several years.
- One mammography unit has been recently installed and commissioned in the public sector at Parirenyatwa Hospital.
- Magnetic Resonance Imaging (MRI) has not been available for several years due to equipment breakdown.
- Private sector offers diagnostic radiology services at a cost. There are a number of these centers in the major cities of the country

#### Pathology services

- Basic laboratory services are available in the District Hospitals, Mission Hospitals and some small private centers.
- Histopathology services are centralized to the towns of Harare and Bulawayo in both the private and public sectors.
- There are five pathologists for the whole country (4 in Harare and 1 in Bulawayo).
- The ideal number of pathologists is 1 for every 250,000 of the population.

### **Nuclear Medicine**

- **Equipment:**
  - Two State-owned nuclear medicine facilities: Parirenyatwa group of hospitals (with one non-functional Siemens E-cam gamma camera installed in 2003) and Mpilo Central Hospital (with one obsolete Sophy Gamma camera installed in the '90s).
  - Until late 2010 when the gamma camera broke down, some nuclear medicine studies were available at Parirenyatwa Group of Hospitals while at Mpilo, the facility has been non-functional since early 2003.
- **Personnel:**
  - One Nuclear Medicine Physician serving in Government attending to both Parirenyatwa and Mpilo Hospitals.
  - Two Nuclear medicine technologists: Parirenyatwa and Mpilo Central Hospital (recalled from retirement).
  - There are no medical physicists at the two nuclear medicine facilities (not in compliance with recommendations from the International Atomic Energy Agency, IAEA)

### **Radiotherapy**

- **Equipment:**
  - Two National Radiotherapy Centers: Parirenyatwa Group of Hospitals in Harare and Mpilo Central Hospital in Bulawayo.
  - The Mpilo radiotherapy facility has not offered any services since 2003.
  - All of the cancers are treated at the centers except for some Kaposi's sarcoma (KS) patients that are seen at the KS clinic at Parirenyatwa Hospital.
- **Cost:**
  - Patients pay USD\$10 for consultation; this fee does not cover chemotherapy and radiotherapy. The centers themselves provide treatment services on an outpatient basis.
- **Facilities**
  - Two oncology wards, one for adults and one for children to accommodate the very sick patients.
  - A non-functional hostel (Tariro Hostel) used to house people who were waiting to be treated but not sick enough for admission at the Harare centre.
- **Personnel:**
  - 7 qualified Radiation Oncologists (6 are in Harare)
  - 4 Physicists
  - 16 Radiographers
  - 6 Nurses
  - There are no trained oncology nurses in the departments.
  - The IAEA recommends that there should be one oncologist for every 500,000 people in a population.
- **Cost:**
  - To access radiotherapy treatment centers in Harare or Bulawayo, patients must spend significant amounts of money, frequently beyond their reach

### **Surgery**

- Biopsies: Provincial, Mission and Central hospitals.
- There is a lack of standardization of procedures carried out for the various cancers.

- There are no stand-alone surgical oncology units even at the tertiary level.
- Personnel:
  - One of the most well-staffed and older disciplines ( no numbers provided)
  - Evidence-based cancer surgery need to be promoted
  - Surgical oncology units to be formed

**Table A. Estimated human and resources required for screening a population of 1 million people provided with Pap smears**

| Category   | Components   | Pap smear with cytology |
|--|--|-------------------------|
| <b>Test components</b>                                     | Persons screened   | 50,000                  |
|  | Test per day per facility  | 50                      |
|  | Facilities required (screening activities performed 5 days per week) | 3                       |
|  | Estimated number of positive tests †                                 | 7000                    |
| <b>Human resources</b><br>(dedicated to screening program) | Trained primary care professionals                                   | 20                      |
|  | Health assistants  | 5                       |
|  | Public health nurse  | 2                       |
|  | Pathologists ††  | 1                       |
|  | Surgeons   | 0.1                     |
|  | Radiologists   | 0.1                     |
| <b>Equipment and supplies</b>                              | Colposcopes  | 4                       |
| <b>Educational material and outreach</b>                   | Community engagement   |                         |
|  | Community mechanisms   |                         |
|  | Clinical provider training   |                         |
| <b>Quality assurance measures</b>                          | Monitoring and evaluation  |                         |
|  | Quality assurance  |                         |

† Assumes cervical cancer incidence of 25 per 100,000, specificity of 70%

†† A well trained pathologist can review 10,000 to 25,000 smears per year

Source: World Health Organization (2016) Guide to cancer early diagnosis and screening. In press.

## Part I: Evaluating the Uptake of Cervical Cancer Screening

### *Learning points:*

- *Understanding information that can be obtained from population-based surveys versus medical records for evaluating cervical cancer screening efforts*
- *Examine how data can be used to inform strategies to increase cervical cancer awareness*
- *Review of risk factors for cervical cancer and need for consideration of varying risk groups in implementing cervical cancer screening*
- *Identifying potential biases affecting cancer screening*

### **a. Population-based surveys to evaluate cervical cancer screening**

High quality surveillance data are necessary to inform and evaluate national cervical cancer control programs and early detection efforts; however, these data are not yet available in many countries. Population based surveys including the Demographic and Health Surveys Program (DHS), supported by the United States Agency for International Development (USAID) and the World Health Organization's (WHO) STEPwise approach to non-communicable disease risk factor surveillance (STEPS) provide critical population-level data on cervical cancer screening coverage.

Use Table 1 "Knowledge and prevention of cervical cancer, Zimbabwe Demographic and Health Survey" to answer the following questions:

1. Describe the characteristics of women who responded to the survey and self-reported cervical cancer knowledge among respondents
  
  
  
  
  
  
  
  
  
  
2. Describe the socioeconomic characteristics of women in Zimbabwe who reported ever being screened for cervical cancer (either at 12 months or 3 years)
  
  
  
  
  
  
  
  
  
  
3. Are there any gaps in women's awareness about cervical cancer and cervical cancer screening in Zimbabwe, if so propose alternatives to fill the gaps

**Table 1. Knowledge and prevention of cervical cancer, Zimbabwe Demographic and Health Survey**

Percentage of women age 15-49 who have ever heard of cervical cancer, have had a cervical screening (Pap test) ever or in the last 12 months and the last 3 years, by background characteristics, Zimbabwe 2015

| Background characteristic | Have heard of cervical cancer | Have ever been screened for cervical cancer | Number of women | Among women who have had a cervical exam |                                       | Number of women |
|---------------------------|-------------------------------|---|-----------------|--|---------------------------------------|-----------------|
|                           |                               |   |                 | Had cervical exam in the last 12 months  | Had cervical exam in the last 3 years |                 |
| <b>Age</b>                |                               |   |                 |  |                                       |                 |
| 15-19                     | 57.1                          | 1.5   | 2,199           | (82.9)                                   | (97.0)                                | 33              |
| 20-24                     | 77.0                          | 4.8   | 1,697           | 84.8                                     | 98.8                                  | 81              |
| 25-29                     | 83.6                          | 13.9  | 1,657           | 71.6                                     | 94.4                                  | 231             |
| 30-34                     | 88.2                          | 19.0  | 1,619           | 60.1                                     | 89.7                                  | 308             |
| 35-39                     | 89.2                          | 19.3  | 1,236           | 68.5                                     | 94.0                                  | 238             |
| 40-44                     | 88.2                          | 22.7  | 965             | 61.2                                     | 84.4                                  | 219             |
| 45-49                     | 85.9                          | 24.1  | 582             | 56.6                                     | 81.5                                  | 140             |
| <b>Residence</b>          |                               |   |                 |  |                                       |                 |
| Urban                     | 88.4                          | 21.1  | 3,829           | 64.9                                     | 89.2                                  | 806             |
| Rural                     | 72.6                          | 7.2   | 6,126           | 67.5                                     | 92.3                                  | 444             |
| <b>Province</b>           |                               |   |                 |  |                                       |                 |
| Manicaland                | 73.4                          | 6.4   | 1,266           | 52.5                                     | 84.2                                  | 80              |
| Mashonaland Central       | 79.8                          | 9.4   | 882             | 66.2                                     | 91.3                                  | 83              |
| Mashonaland East          | 82.0                          | 11.9  | 952             | 71.9                                     | 93.0                                  | 114             |
| Mashonaland West          | 82.9                          | 10.4  | 1,160           | 65.5                                     | 93.3                                  | 121             |
| Matabeleland North        | 65.4                          | 8.1   | 465             | 79.2                                     | 93.1                                  | 38              |
| Matabeleland South        | 61.5                          | 8.2   | 419             | 59.7                                     | 84.9                                  | 35              |
| Midlands                  | 72.6                          | 8.4   | 1,263           | 66.6                                     | 90.6                                  | 106             |
| Masvingo                  | 73.0                          | 10.5  | 1,187           | 74.8                                     | 94.1                                  | 125             |
| Harare                    | 90.8                          | 23.9  | 1,783           | 65.9                                     | 88.5                                  | 426             |
| Bulawayo                  | 85.0                          | 21.2  | 577             | 56.6                                     | 91.0                                  | 122             |
| <b>Marital status</b>     |                               |   |                 |  |                                       |                 |
| Never married             | 64.3                          | 2.4   | 2,511           | 70.9                                     | 98.4                                  | 60              |
| Married                   | 83.2                          | 16.0  | 5,841           | 64.0                                     | 89.3                                  | 932             |
| Living together           | 83.8                          | 10.2  | 310             | (71.8)                                   | (96.7)                                | 31              |
| Divorced/separated        | 83.9                          | 16.3  | 855             | 69.5                                     | 91.0                                  | 139             |
| Widowed                   | 86.7                          | 19.9  | 438             | 74.3                                     | 92.5                                  | 87              |
| <b>Education</b>          |                               |   |                 |  |                                       |                 |
| No education              | 59.2                          | 8.9   | 126             | *  | *                                     | 11              |
| Primary                   | 66.4                          | 7.5   | 2,571           | 71.4                                     | 88.9                                  | 192             |
| Secondary                 | 81.7                          | 12.4  | 6,527           | 68.2                                     | 91.1                                  | 812             |
| More than secondary       | 97.7                          | 32.0  | 731             | 54.6                                     | 88.4                                  | 234             |
| <b>Wealth quintile</b>    |                               |   |                 |  |                                       |                 |
| Lowest                    | 65.1                          | 5.3   | 1,726           | 54.6                                     | 90.0                                  | 91              |
| Second                    | 71.9                          | 5.2   | 1,660           | 71.4                                     | 94.2                                  | 86              |
| Middle                    | 74.9                          | 6.9   | 1,733           | 70.0                                     | 94.6                                  | 120             |
| Fourth                    | 84.2                          | 16.7  | 2,269           | 71.7                                     | 90.6                                  | 379             |
| Highest                   | 89.7                          | 22.4  | 2,567           | 62.0                                     | 88.7                                  | 575             |
| Total 15-49               | 78.7                          | 12.6  | 9,955           | 65.8                                     | 90.3                                  | 1,250           |

Notes: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Source: Zimbabwe National Statistics Agency and ICF International. 2016. Zimbabwe Demographic and Health Survey. 2015: Key Indicators. Rockville, Maryland, USA: Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Available from: <http://www.dhsprogram.com/what-we-do/survey/survey-display-475.cfm>. Accessed April 2016.

**b. Medical records to evaluate cervical cancer screening**

Medical records are usually more readily available than population-level data for cervical cancer screening, and good quality medical records can provide key information on cervical cancer screening efforts at the health-facility level.

Electronic medical records from the United Bulawayo Hospital in Zimbabwe from 2010 -2012 were analyzed to examine the implementation of cervical cancer screening and patient outcomes at the hospital.

## **Cervical cancer screening: Safety, acceptability, and feasibility of a single-visit approach in Bulawayo, Zimbabwe**

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**Background:** Cervical cancer is the commonest cancer amongst African women, and yet preventative services are often inadequate.

**Aim:** The purpose of the study was to assess the safety, acceptability and feasibility of visual inspection with acetic acid and cervicography (VIAC) followed by cryotherapy or a loop electrical excision procedure (LEEP) at a single visit for prevention of cancer of the cervix.

**Setting:** The United Bulawayo Hospital, Zimbabwe.

**Methods:** The study was descriptive, using retrospective data extracted from electronic medical records of women attending the VIAC clinic. Over 24 months 4641 women visited the clinic and were screened for cervical cancer using VIAC. Cryotherapy or LEEP was offered immediately to those that screened positive. Treated women were followed up at three months and one year.

**Results:** The rate of positive results on VIAC testing was 10.8%. Of those who were eligible, 17.0% received immediate cryotherapy, 44.1% received immediate LEEP, 1.9% delayed treatment, and 37.0% were referred to a gynaecologist. No major complications were recorded after cryotherapy or LEEP. Amongst those treated 99.5% expressed satisfaction with their experience. Only 3.2% of those treated at the clinic had a positive result on VIAC one year later. The service was shown to be feasible to sustain over time with the necessary consumables. There were no service-related treatment postponements and the clinic staff and facility were able to meet the demand for the service.

**Conclusion:** A single-visit approach using VIAC, followed by cryotherapy or LEEP, proved to be safe, acceptable and feasible in an urban African setting in Bulawayo, Zimbabwe. Outcomes a year later suggested that treatment had been effective.

Source: Fallala MS, Mash R. Cervical cancer screening: Safety, acceptability, and feasibility of a single-visit approach in Bulawayo, Zimbabwe. *Afr J Prim Health Care Fam Med.* 2015 May 5;7(1). doi: 10.4102/phcfm.v7i1.742. Creative Commons Attribution 4.0 International (CC BY 4.0) license.

4. What are the differences in the kind of information that can be obtained from a population-based survey like DHS versus electronic health records at the United Bulawayo Hospital?

**TABLE 1: Programmatic factors and cervical cancer risk factors in relation to VIAC positive results (N = 501).**

| Variable                           | Frequency | Percentage |
|------------------------------------|-----------|------------|
| <b>Marital status</b>              |           |            |
| Single                             | 69        | 13.8       |
| Married                            | 315       | 62.9       |
| Widowed                            | 89        | 17.8       |
| Divorced                           | 28        | 5.6        |
| <b>Previous Pap smear done</b>     |           |            |
| Yes                                | 87        | 17.4       |
| No                                 | 414       | 82.6       |
| <b>HIV Status</b>                  |           |            |
| Positive                           | 263       | 52.5       |
| Negative                           | 188       | 37.5       |
| Unknown                            | 50        | 10.0       |
| <b>Initial complaints</b>          |           |            |
| Vaginal bleeding                   | 47        | 9.4        |
| Vaginal discharge                  | 41        | 8.2        |
| Lower abdominal pain (LAP)         | 107       | 21.4       |
| LAP and lower back pain            | 52        | 10.4       |
| LAP and watery discharge           | 1         | 0.2        |
| Lower back pain                    | 6         | 1.2        |
| Heavy menstruation                 | 1         | 0.2        |
| Post-coital bleeding               | 1         | 0.2        |
| Watery vaginal discharge           | 6         | 1.2        |
| LAP and vaginal bleeding           | 3         | 0.6        |
| Dyspareunia                        | 1         | 0.2        |
| <b>Use of contraceptives</b>       |           |            |
| Condoms                            | 87        | 17.4       |
| Oral contraceptives                | 102       | 20.4       |
| Levonorgestrel implant             | 27        | 5.4        |
| Tubal ligation                     | 10        | 2.0        |
| Depot progesterone injection       | 44        | 8.8        |
| Intra-uterine contraceptive device | 15        | 3.0        |

LAP, Lower abdominal pain.

Source: Fallala MS, Mash R. Cervical cancer screening: Safety, acceptability, and feasibility of a single-visit approach in Bulawayo, Zimbabwe. *Afr J Prim Health Care Fam Med.* 2015 May 5;7(1). doi: 10.4102/phcfm.v7i1.742. Creative Commons Attribution 4.0 International (CC BY 4.0) license.

5. What does the information on participant risk factors above tell us about the participant's risk of cervical cancer?

**TABLE 2: Selected clinical and programmatic outcomes.**

| Variable  | N     | %     |
|---|-------|-------|
| <b>Screening (N = 4641)</b>                                   |       |       |
| VIA test positive   | 501   | 10.8  |
| Satisfied with their decision to be tested                    | 4641  | 100.0 |
| <b>Cryotherapy (N = 85)</b>                                   |       |       |
| Accepted immediate offer of cryotherapy                       | 84    | 98.8  |
| Total cryotherapy performed amongst those eligible            | 84    | 98.8  |
| Treatments postponed due to staff- or facility-related issues | 0     | 0.0   |
| Delayed treatment due to patient                              | 1     | 1.9   |
| Clinic visit for perceived problem                            | 0     | 0.0   |
| Major complications (bleeding, shock, hospitalisation)        | 0     | 0.0   |
| Satisfied with their decision to be treated                   | 84    | 97.7  |
| Complied with post-cryotherapy instructions                   | 82    | 97.7  |
| Attended follow-up after one year                             | 85    | 100.0 |
| Tested positive at one year                                   | 1     | 1.2   |
| <b>LEEP (N = 221)</b>   |       |       |
| Accepted immediate offer of LEEP                              | 221   | 100.0 |
| Total LEEP performed amongst those eligible                   | 221   | 100.0 |
| Treatments postponed due to staff- or facility-related issues | 0     | 0.0   |
| Delayed treatment due to patient                              | 0     | 0.0   |
| Clinic visit for perceived problem                            | 0     | 0.0   |
| Major complications (bleeding, shock, hospitalisation)        | 1     | 0.5   |
| Satisfied with their decision to be treated                   | 218   | 98.6  |
| Complied with post-LEEP instructions                          | 218   | 98.6  |
| Attended follow-up after one year                             | 213   | 96.4  |
| Tested positive at one year                                   | 7/213 | 3.2   |

VIA, visual inspection with acetic acid and cervicograph; LEEP, loop electrical excision procedure.

Source: Fallala MS, Mash R. Cervical cancer screening: Safety, acceptability, and feasibility of a single-visit approach in Bulawayo, Zimbabwe. *Afr J Prim Health Care Fam Med.* 2015 May 5;7(1). doi: 10.4102/phcfm.v7i1.742. Creative Commons Attribution 4.0 International (CC BY 4.0) license.

6. What challenges would you anticipate in expansion of this cervical cancer screening strategy to include other clinics or areas in Zimbabwe?
  
7. Do you have any additional applied research questions regarding this cervical cancer screening program that may be answered using hospital records?

## Part II: Making the Case

Your third and final step is to present your case to the medical foundation. You need to convince them of the need for your program and how funds will be allocated.

### *Learning points:*

- *Understanding and interpreting recommendations around cervical cancer prevention*
  - *Able to draw conclusions and generalizations from available data*
8. Use the background information provided, including Annex 2 and Annex 3, to support your argument. The argument must include a description of the current situation, including (a) burden of disease, (b) strategies for primary prevention, (c) country capacity to treat women diagnosed with cervical cancer, and (d) bias/issues with screening - as identified in questions 1-3.
  9. Justify the screening strategy and factors to consider in expanding the cervical cancer screening program in Zimbabwe, including (e) screening strategy, (f) resource allocation.
  10. Based on what you learned in Module 4, explain how would you evaluate the cervical cancer screening program in Zimbabwe after implementation of your recommendations.