

# Cancer Kitso: A Novel Training Initiative for Health care Professionals in Eastern and Southern Africa

Report to BMS  
RUTGERS GLOBAL HEALTH INSTITUTE

## Table of Contents

Executive Summary .....	2
Program Description.....	2
Project Objectives.....	2
Part 1: The Botswana Experience .....	3
Part 2: Country engagement for Cancer Kitso: Tanzania and Lesotho.....	9
The Tanzania Experience .....	9
The Lesotho Experience .....	11
Part 3: Cancer Kitso Course Evaluation Educational Study .....	16
Appendices (see second attachment) .....	17
References.....	17

## Executive Summary

Africa faces significant challenges in providing adequate oncology care due to a shortage of specialized health care professionals, including oncologists, oncology nurses, and oncology pharmacists. The rise in cancer cases, coupled with limited resources and expertise, has prompted the need for specialized training programs to empower health care professionals in effectively managing cancer patients. Primary care providers play a critical role in cancer prevention, early detection, and basic cancer care in Africa. This report focuses on an oncology workforce development program, Cancer Kitso: A Novel Training Initiative for Health care Professionals in Eastern and Southern Africa. This is a crucial training initiative to combat the rising cancer burden. Through comprehensive and collaborative efforts, the program aims to build a skilled workforce capable of providing high-quality cancer care, improving patient outcomes, and ultimately reducing the impact of cancer on the nation's health.

## Program Description

Cancer Kitso: Clinical Management – Level 1 is a synchronous hybrid course designed for members of the Botswana health care workforce who care for cancer patients at the four public oncology centers. The program incorporates both theoretical knowledge and evidence-based practices to ensure comprehensive learning on the fundamentals of care and prevention of the five common cancers. The course is designed to cater to various health care professionals, including physicians, nurses, pharmacists, pharmacy technicians, and social workers. This course covers various aspects cancer care and prevention, including cancer biology, pathology, screenings, treatment modalities of the common cancers, palliative care, patient navigation, and referral pathways within Botswana health systems. Special emphasis is given to patient-centered care through team-based approaches to align existing resources, coordinate cancer services through referral pathways and patient navigation. This capacity building initiative is to empower non-oncology specialists to be part of cancer care teams, establish a common language to improve treatment and care, and help align resources to standardize care within each health care facility, from early detection, timely diagnosis, to treatment outcomes.

## Project Objectives

1. Develop a fit-for-purpose (country-specific) oncology training program that reskills and upskills HCPs across public health facilities, as collaborative partners in cancer management.
2. Improve patient-centered care through team-based approaches, alignment of resources, and coordination of cancer-related services, referral pathways, and patient navigation systems.
3. Evaluate the workforce development program in response to health equity and the MoHs strategic plans for cancer care and prevention.
4. Grow partnership support for Cancer Kitso as a regional Eastern and Southern African effort commencing in Botswana, with delivery to Tanzania and Lesotho and scaling regionally to selected countries in partnership.

## Part 1: The Botswana Experience

Botswana faces a number of obstacles in its efforts to treat and prevent cancer. The real-world situation in this country is that most patients are diagnosed with advanced stages of cancer with access to very limited resources and timely access to services within their catchment area. Many of the cancer care services are delivered by non-oncology specialists and health care teams due to serious staffing shortages with many insufficient trained personnel who learned on the job. The 2021 Quantitative *and Qualitative Assessment of Cancer Services and Needs at the Four Public Oncology Centers within the Botswana Health System* provided recommendations to significantly improve cancer care and prevention services. This assessment recognized a training need to educate frontline health care workers delivering cancer care services within their facility. These insights also gave us greater potential to scale the program to the larger numbers of physicians, nurses, pharmacists, and other health care workers in the sub-Saharan Africa region. The Cancer Kitso training course curated a five-session series addressing the five common cancers in Botswana.

In response to the knowledge gap and the need for a comprehensive training strategy for current health care workers, the Cancer Kitso project partnered with the Botswana Ministry of Health, the University of Botswana, the private sector, and the Rutgers Biomedical and Health Sciences to develop a specific course called the Clinical Management – Level 1 hybrid course. This course is based on Botswana cancer management guidelines and available resources.

A twenty-seven-member team (see Appendix 1), consisting of clinical faculty and health care practitioners from Botswana and Rutgers, participated in intensive writing meetings to draft content each session. Three to four members representing two to three professions were assigned to each session. The assignment was based on clinical expertise and experience. A curriculum development specialist was assigned to each session team to ensure the team is adhering to the curriculum blueprint (see Appendix 2), session learning objectives, exam questions, and overall flow of the teaching and learning experience. Each team wrote clinical content, offered feedback, and shared edits that were incorporated into subsequent drafts. These interprofessional writing teams broke down silos and exchanged evidence-based practices to standardize the management and the delivery of services for the five common cancers in Botswana. The curriculum had a special emphasis on patient-centered care that included team-based approaches to align cancer services, referral pathways, and patient navigation. It took approximately six months to develop a five-session series that included a manual for each session, slide decks, resources, and exam questions for the course.

### **Course Learning Management System – MS Teams**

On the back end, the Botswana-Rutgers Partnership for Health coordinating team with technical mentorship from the Rutgers Global Health Institute senior program coordinator uploaded all course materials onto the University of Botswana MS Team: Cancer Kitso Participant portal.

The documents are:

- Participant handbook (see Appendix 3)

- Session manuals and slide decks
- Resource documents
- Access to the online exam

### **Pilot the Course**

The coordinating team piloted one lesson from each of the five sessions on September 14-15, 2022, to assess training readiness, user-friendliness of the video-conferencing platform, and access to Microsoft Teams. This was an opportunity to test the live streaming, identify any technical issues, and resolve before the launch of the course. As a result of this pilot, it was decided to switch from Microsoft Teams to Zoom for the lectures, while keeping the training materials as a repository on Microsoft Teams that participants could access at any time. Following the pilot, it was also determined that the course would be delivered using a hybrid model (in-person and online).

### **Implementation of the Course**

The course ran from September 19 to November 3, 2022. It was decided that Session 1 should be in-person training, taking place from 15:00-17:00 hours on Monday and Tuesday afternoons at each public oncology center, Princess Marina Hospital, Letsholathebe II Memorial Hospital, Nyangabgwe Referral Hospital, and Sekgoma Memorial Hospital (see Appendix 4 Botswana training schedule). The coordinating team felt it was valuable for the instructors to connect with the participants at each facility, introduce the training course, discuss the hybrid course model, show how participants can access the materials on the University of Botswana MS Team, and build an instructor/participant relationship for the duration of the course.

Table 1. Session 1 Schedule and Instructors

Location	Dates	Instructors
Francistown	September 19-20	Dr. Antonia Bunga Dr. Carl Swart
Maun	September 26-27	Dr. Antonia Bunga Dr. Carl Swart
Serowe	September 26-27	Dr. Peter Vuylsteke Dr. Faheem Farooq
Gaborone	October 5-6	Dr. Antonia Bunga Dr. Carl Swart

The majority of the lessons for Sessions 2-5 were taught online, but instructors were also permitted to teach some lessons at Princess Marina Hospital with live streaming to Letsholathebe II Memorial Hospital, Nyangabgwe Referral Hospital, and Sekgoma Memorial Hospital. Due to budget constraints, the instructors were unable to travel and teach in-person at these facilities.

Table 2. Sessions Schedule

<b>Clinical Management – Level 1</b>				
Course timeframe	Five-week course, five hours per week, and assessment			
Session 1	Cancer Basics and Navigation, from Symptoms to Treatment Planning	In-person at each facility	Sept. 19-Oct. 6	Each session had three lessons. The sessions were scheduled for two afternoons (2.0 hours) each week Total number of hours: 20.0.
Session 2	Cancer Treatment Modalities, Drug Therapies, and Adverse Effects	Online	Oct. 12-13	
Session 3	Chemotherapy in Cancer Treatment and Care	Online	Oct. 19-20	
Session 4	Palliative Care for Cancer Patients	Hybrid	Oct. 26-27	
Session 5	Putting It All Together: A Patient's Journey in Oncology Care and Strengthening Health Systems	Hybrid	Nov. 2-3	
Assessment	Exam	Online November 16, November 19, (January 18)		Participants were able to access the online exam through the University of Botswana MS Team Channel: Cancer Kitso
Assessment	Retake exam	Online November 26, (February 6)		

A total of 106 health care professionals (physicians, nurses, pharmacists, pharmacy technicians, and social workers) participated in the course.

Table 3. Health Care Participants by Site

	Doctors	Nurses	Pharmacists	Pharmacy Technicians	Total
Letsholathebe II Memorial	7	8	1	0	16
Nyangabgwe Referral	7	15	1	0	23
Princess Marina	16	33	2	2	53
Sekgoma Memorial	2	6	3	1	14*

\*Included 2 Social Workers

### Exam

To be eligible for the exam, participants were required to attend at least 60 percent of the sessions; seventy-five participants met this requirement. Three examination sessions were scheduled for November 16 and 19, 2022, with a make-up exam scheduled for November 26. Arrangements were made to accommodate participants who were unable to take the November exam on January 18, 2023, with a make-up exam scheduled for February 6, 2023. This brought the total number of exam sessions to five, and sixty-three of the seventy-five participants took the exam during these five exam sessions. These people were awarded a Certificate of Attendance. Fifty-two participants earned a score of at least 70% and were awarded the Cancer Kitso digital badge and the Certificate of Attendance.

### **Exam Structure**

The Content Domain for the Cancer Kitso assessment consists of five sessions, each of which contains three lessons (for a total of 15 lessons), with a delivery time of 3 hours for each session.

Parallel forms of the online test papers were set so that:

- The participants who re-write does not take the same test.
- The participants who missed an exam received a different test

This has implications for test administration and coding (see Table 4).

Table 4: Rubric for exam structure

Steps	Tasks
1	Analysed the content domains for lessons [learning outcomes and related content covered]
2	Decided on the number of components to be used to assess the content – 70 items with a total of 150 points. Pass mark set at 70%.
3	Decided on the number of sections of the paper – Sections to accordingly accommodate the Objectives Domains on curriculum map. E.g., Section A = Knowledge; Section B = Skills & Application; Section C = Attitudes/Behaviours/Values/Practice
4	Decided on the duration of the paper – 3hrs.
5	Decided on the types of questions to be used - True or False and Multiple Questions

## **Digital Badge**

A digital badge is a digital representation of an accomplishment, skill, or interest. It is a type of digital credential that can be earned in a variety of learning environments, both online and offline. Digital badges are typically awarded to individuals who have successfully completed a learning activity, such as a course, workshop, or training program.

We built a knowledge-based digital badge for Cancer Kitso: Clinical Management - Level 1 that recognizes and verifies the participant's learning in warning signs/systems to treatment and care of the common cancers in Botswana. This course provided participants with instruction on the principles and methods pertaining to cancer care and prevention. The allocation of rigorous work and time towards the construction of the course is intended to facilitate the acquisition of professional knowledge in the field of cancer care to non-oncology health care professionals at the four public oncology centers. The online examination was designed by clinical content experts in collaboration with the curriculum development team, who ensured that the exam questions were arranged in a progressive manner, starting from easier questions and gradually progressing to more challenging ones. The digital badge, Cancer Kitso: Clinical Management - Level 1, was awarded to participants who achieved a score of 70% or above on the online examination.

Figure 1: Rutgers Global Health Institute Digital Badge



A summary of participants who completed the course (wrote the final exam), with exam score average by site and by profession:

Table 5: Health care professions by facility and average exam scores

	Doctors	Nurses	Pharmacy Staff	Total	Average Score
Letsholathebe II Memorial	6	4	0	10	82.5
Nyangabgwe Referral	3	14	1	18	77.5
Princess Marina	8	17	3	28	79.2
Sekgoma Memorial	0	4	3	7	76.5
Total	17	39	7	63	--
<b>Average Score</b>	<b>82.3</b>	<b>77.2</b>	<b>79.4</b>	--	<b>79.7</b>

### **Participant Quotes**

I want to start off by saying thank you from the bottom of my heart. I am so grateful for the hard work and dedication that went into planning and conducting the Cancer Kitso training program. You took a very difficult subject and presented it in a way that was informative, eye-opening and inspiring. Your knowledge of the subject was immense and incredibly helpful. It was truly an incredible program, and I can't say thank you enough for your commitment and hard work. Your efforts have been invaluable in raising awareness and educating the participants about cancer and its treatments. Your dedication to this program is commendable and through the knowledge I gained I'm now confident in managing patients with cancer.

Maranyane Thapelo, Medical Officer, Nyangabgwe Referral Hospital

Cancer Kitso training was an eye opener for me. What I loved most were the practical scenarios after each presentation: I wish we had more time for those. I also loved the fact that it covered the whole country, with a uniform sharing of information. I wish we could have a separate training for the pharmacy officers with information tailored for them. Adequate time was given for the training. All in all it was very informative.

Ensulo Muleya, Pharmacy Technician, Princess Marina Hospital

Cancer Kitso training came at a good time when the health care system of Botswana is seeing rising numbers of cancer patients. As a medical officer in Botswana, I found I was mostly ill equipped or rather scared to attend to cancer patients but with this Cancer Kitso training I now have knowledge on diagnosing the five common cancers confidently, treat where possible or refer for further management, the importance of including palliative care earlier on in treatment for a better outcome. The Cancer Kitso program provided all this information and more in five well explained and detailed sessions. I look forward to a time when all medical officers and other health care professionals will receive Cancer Kitso training to improve the overall care of cancer patients.

Maikano Rachai, Medical Officer, Letsholathebe II Memorial Hospital

The Cancer Kitso program comes at a critical time in our healthcare system, where the focus is no longer on communicable diseases alone but also on non-communicable diseases such as cancer. The program

equips healthcare professionals without oncology training with the basic skills to help fight cancer, which to me is a welcome development.

Dr. Norman Carl Swart, PhD, APRN, Adult-Gerontology Oncology & Palliative Care NP and Family Nurse Practitioner, MNS Coordinator, University of Botswana, School of Nursing

Working on the Kitso curriculum coordination was an eye-opening experience. The enthusiasm of the course writers and that of the participants are a sign of improvements to be anticipated in providing cancer treatment and care in Botswana.

Penelope G. Moanakwena, PhD, Assistant Director, Teaching and Learning, Centre for Academic Development, University of Botswana

## **Conclusion**

While the training was successful, it was only conducted at the four public oncology centers out of necessity. To improve the effectiveness of the training program, health care professionals in the district and other smaller hospitals, as well as clinics must be trained, with an emphasis on screening and early detection. Additionally, pathology turnaround times continue to be a challenge requiring immediate attention. This would be the initial step in addressing the problem of late presentations and advanced disease: addressing these two issues.

## **Part 2: Country engagement for Cancer Kitso: Tanzania and Lesotho**

### **The Tanzania Experience**

A four-member team from the Botswana-Rutgers Partnership for Health, Rutgers Global Health Institute, and Rutgers School of Nursing (Botswana-Rutgers team) visited Tanzania from January 16-20, 2023. The purpose of this visit was to understand and appreciate the Tanzania health care system and oncology services as well as to explore the adaption of Cancer Kitso: Clinical Management – Level 1 course can benefit the country.

### **University of Dodoma**

The following faculty participated in a two-day meeting at the University of Dodoma:

1. Rehema Bakari, Lecturer, School of Nursing and Public Health, University of Dodoma
2. Khamis Hassan Bakari, Lecturer, Nuclear Medicine Specialist, University of Dodoma
3. Tendani Gaolathe, Senior Advisor, Botswana-Rutgers Partnership for Health
4. Angelina Joho, Head of Department, Clinical Nursing, School of Nursing and Public Health, University of Dodoma
5. Lusajo Jason, Lecturer, School of Nursing and Public Health, University of Dodoma
6. Shakim Jumane, Head of Department, Paediatrics and Child Health, Paediatric Oncologist, University of Dodoma
7. Refeletswe Lebelonyane, Program Manager, Botswana-Rutgers Partnership for Health
8. Richard (Ric) Marlink, Director, Rutgers Global Health Institute
9. Golden Masika, Lecturer, Clinical Nursing, University of Dodoma

10. Theresia Masoi, Lecturer, Clinical Midwifery, University of Dodoma
11. Mwajuma Mdoe, Lecturer, Clinical Midwifery, University of Dodoma
12. Alfred Meremo, Senior Lecturer, Internal Medicine, University of Dodoma
13. Suzanna Willard, Professor Emeritus, Rutgers School of Nursing

At the end of the meeting, the group agreed on the following:

- Collaborate with nursing and medical oncology teams
- Benjamin Mkapa Hospital to be considered as benchmarking site for the new quaternary hospital (similar to Sir Ketumile Masire Teaching Hospital in Botswana)
- Further explore the adaption of Cancer Kitso following the cancer care needs assessment that the University of Dodoma team plan to execute



Ocean Road Cancer Institute is a teaching institution that provides both preventive and curative services.

The following services are provided:

- Preventive services include school-based and community-based screening programs
- Curative and palliative care services which includes chemotherapy and radiation
- Ocean Road Oncology Center has a degree granting oncology program for physicians and nurses in collaboration with Muhimbili. Continuing education programs are available as part of workforce development
- The Institute has a residency and fellowship program for physicians
- The Institute collaborates with other centers in Tanzania and other African countries. The Institute is open to the University of Dodoma collaborations

The Botswana-Rutgers team, met with:

1. Nazima Dharsee, Director, Academic and Research Unit
2. Crispin Kahesa, Epidemiologist, Prevention and Outreach Services
3. Mark Mseti, Director, Medical Services
4. Jullus Mwaiselage, Executive Director
5. Sikudhani Muya, Consultant, Clinical and Radiation Oncologist

The Institute team agreed to collaborate in all areas of oncology as a specialized center. The potential collaboration opportunity with Botswana can benefit from the knowledge exchange and skills transfer related to cancer care and prevention services.



5. Improve patient-centered care through team-based approaches, alignment of cancer related services, referral pathways, and patient navigation.
6. Evaluate the workforce development program in response to health equity and the Ministries of Health strategic plans for cancer care and prevention.

### [The Lesotho Experience](#)

A three-member team from the Botswana-Rutgers Partnership for Health visited Lesotho on May 1<sup>st</sup> to 3<sup>rd</sup>, 2023. The team met with representatives from the Lesotho Ministry of Health and Senkatana Oncology Center.

#### Overview of Lesotho Health System

Lesotho has eighteen hospitals of which 50% belongs to a Christian Mission Alliance, the remaining ten are district hospitals. A number of districts have more than one hospital, including the highlands and lowlands.

#### Queen Mamohato Memorial Hospital

Operates as tertiary hospital, initially was Public-Private (Netcare) but now is fully under government management. The hospital has 1 CT-scan, MRI (not working for 3 months now). Currently there are no pathologists in the public sector, however they are employed through the private sector.

#### Oncology Clinic- Senkatana Oncology Center

This is the only oncology center in Lesotho, which was made possible by Bristol Myers Squibb Foundation. The center has adequate staffing and is equipped to provide chemotherapy to cancer patients.

- The center was established in 2004, it was the first place in Lesotho to provide ARVs.

- On July 1, 2022, they opened the doors to provide chemotherapy for the first time in the Lesotho's public sector history. The Senkatana Oncology Center is currently providing chemotherapy for 90 patients.
- Currently there is only one clinical oncologist in the public sector.

### Radiotherapy

Lesotho is constructing radiotherapy hospital through the support of Lesotho government. Currently, there are three medical physicists and eight radiotherapists assigned to this hospital. Through the support of the International Atomic Energy Agency, three physicians and three nurses are participating in a training on radiotherapy machines, operational management, and procurement process for the oncology center.



At the end of the visit, the Lesotho team agreed upon:

- Adapting the Cancer Kitso curriculum to the Lesotho setting
- Botswana clinical content experts are available to assist with modifying content and teaching the sessions
- Potential audience for this training is family medicine (first target)
- Lesotho team potential visit to Botswana

### Post Lesotho Visit

- The Botswana-Rutgers Partnership for Health team shared the curriculum and slide decks with the Lesotho Oncology Coordinator

- Adding a Lesotho-specific content, Lesotho-Botswana Health Alliance oncology module, for the family medicine training
- An interprofessional team consisting of a physician, oncology nurse, pharmacist, and psychologist are planning to visit Botswana at the end of July 2023 for the Cancer Kitso Train the Trainer program.

#### Lesotho Train the Trainer on Cancer Kitso

The Botswana-Rutgers Partnership for Health team organized a training session in Botswana for Lesotho health care professionals based at the Senkatana Oncology Clinic from Maseru. This was a three-day intensive “train-the-trainer” course for personnel who will adapt and replicate a similar course for health care professionals in Lesotho districts.

The training was held from 24 to 26 July 2023, at 8am each day (see Appendix 5 for the training schedule). The five Cancer Kitso sessions were covered over the course of the three days, with each day covering two sessions.

A total of four health care professionals traveled from Lesotho to Botswana to attend the training:

- i. Clinical oncologist (Lesotho Oncology Coordinator)
- ii. Medical officer
- iii. Oncology and palliative care nurse
- iv. Pharmacist

Also present were two medical officers from the Princess Marina Hospital in Gaborone who were recently transferred to the Oncology Department. In 2022, these medical officers did not participate in the Botswana training course.



At the conclusion of the third day, Lesotho participants and the Botswana-Rutgers Partnership for Health were given a tour of the oncology department at Sir Ketumile Masire Teaching Hospital. The project manager and an oncology nurse facilitated the tour that included the radiation unit, chemotherapy unit, and the pharmacy.

Quotes from the Lesotho team

*This is a beautiful opportunity for the whole team to clone themselves, and they will improve in their practice. I want to highlight that this was a Training of Trainers. We want you to be able to segregate and say, "This is what I want to focus on" and polish your skill on that part. The country has sent me here as a delegate, and now all teams – palliative care, drugs, screening – have a representative on this team. It was all well reflected and discussed here.*

*The program was well organized, and I am looking at my team thinking we need to add more non-medical people. We want exposure for our whole team because we can see the work of who was organizing this training in the background. If we had known, I would have included support staff because you need other people to deal with the logistics.*

Dr. Kabelo Mputsoe, Clinical Oncologist, Senkatana Oncology Clinic

*I am grateful for everything. I really enjoyed all of this, the learning. It was a little too short and too much information for three days. I have just started working in the oncology department and believe that all I have learned here will help me manage my patients in a different way. Now I have a better understanding of prescriptions and management. Every topic was relevant to me. Personally, I always go home and reflect on what I could have done differently or better. Now I know palliative care and how to break bad news to patients.*

Dr. Mapoulo Leanya, Medical Officer, Senkatana Oncology Clinic

*Overall, it was amazing. When we get home, people will be appreciative of what we got here. It was straightforward. Most of the problems we have are the same, and although we are starting, we will get there. This is a great tool.*

Puleng Matee, Oncology and Palliative Care Nurse, Senkatana Oncology Clinic

*There was too much information for such a short space of time, but it was all worth it.*

Polo Seshea, Pharmacist, Senkatana Oncology Clinic

A comment from one of the Princess Marina Hospital participants:

*The program was great, and even though short I managed to learn a lot. I started in oncology in 2019 and didn't know a lot about it, but as I progressed, I was able to grasp a lot and here I managed to get a lot. I was able to learn from the palliative care team on breaking bad news, because as doctors we come and certify death and run away, leaving the nurses behind. Thank you for the training.*

*Botshelo Kahuma, Medical Officer, Princess Marina Hospital*

After the final lesson, participants were requested to complete an evaluation form to provide feedback on the training program. The form can be found in Appendix 6.

**Next Steps** (as shared by the clinical oncologist in the evaluation form) include

- i. The Cancer Kitso curriculum packet, including the session manuals and slide decks will be adapted for use in Lesotho
- ii. Trainers have been tasked with modifying and teaching the following sessions:
  - a. The clinical oncologist and oncology medical officers will teach the sections on cancer basics, clinical care and screening, chemotherapy and radiotherapy prescriptions
  - b. The pharmacist will teach the chemotherapy and side effects training session
  - c. The oncology and palliative care nurse will lead the session on palliative care
  - d. The Botswana and Lesotho instructors will co-write the exams
- iii. Clinical instructors from the Botswana team will serve as technical advisors for the first training in Lesotho
- iv. The training team is exploring an interprofessional strategy to train doctors, nurses, and pharmacists as cancer care teams in both the public and private sectors
- v. The target audience will be health care professionals in the three regions of Lesotho, approximately 100 participants for the first round

#### **December 2023 Update from Lesotho**

The Lesotho oncology coordinator provided an update in early December 2023 on the plans for Cancer Kitso in 2024. The following can only be achieved with a trained workforce.

- i. Capacity building

The objective is to cascade training to the primary health care providers (physicians, nurses and pharmacists) in the seven hospitals. The heads of department of those seven facilities were trained in September 2023. Clinics in the catchment areas will also be included capacity expansion efforts. The coordinator also intends to establish a patient navigator program, similar to what is currently placed in Botswana.
- ii. The development of a cancer prevention strategy

Once capacitated with knowledge, the health care providers at the selected facilities will assist in the development and implementation of a cancer prevention strategy. Paying special attention to breast, prostate and cervical cancer screening and early detection, treatment outcomes will ultimately be improved.
- iii. The implementation and scale-up of cervical cancer elimination activities

The focus will be on the HPV vaccine and screening, as well as cascading HPV vaccine coverage to both girls and boys in the seven health care facilities and primary hospitals in the catchment areas.

The coordinator plans to support health care professionals with screening outside of normal business days, for example, working on Sundays in areas where women congregate. This allows a larger number of women are reached and receive screening and early treatment at times that are convenient for them.

The goal is to support two healthcare providers, 350 health centers, working on 52 Sundays, i.e., over the course of one year. The Senkatana Oncology Center has a working relationship with the Bureau of Statistics and is aware of the annual targets served by the healthcare centers.

## Part 3: Cancer Kitso Course Evaluation Educational Study

The Rutgers Global Health Institute, in collaboration with the Botswana Ministry of Health, the University of Botswana, Botswana-Rutgers Partnership for Health, and Rutgers Biomedical and Health Sciences, specifically Rutgers Cancer Institute of New Jersey, Ernest Mario School of Pharmacy, and Rutgers School of Nursing, will evaluate the effectiveness of Cancer Kitso: Clinical Management – Level 1, oncology provider training course in Botswana (“Cancer Kitso” for simplicity). This study aims to evaluate the knowledge retention, application of clinical management practices, quality improvement of the training course, and implications for future oncology training initiatives in Botswana. The first objective of this study will assess the effectiveness of the course design and development processes as a quality improvement process. The second objective will evaluate the outcomes of delivering the Cancer Kitso training course to determine its value. Data will be collected and analyzed using a combination of surveys, interviews, and document reviews. This mixed methods approach will provide valuable insights and contribute to enhancing oncology education.

The targeted participants are a purposive sample who have either contributed to, taught, or participated in the course. They include health care professionals who actively participated in the program, as well as clinical and administrative professionals who engaged as stakeholders. Additionally, clinical content experts, direct supervisors of medical and health care staff at each public oncology center engaged in various activities related to the Cancer Kitso course. Consultations for project design, preparation of curriculum and resources, facilitation of training sessions, and involvement in training as a learner were all part of these activities. Adult learners, clinical content creators, clinical instructors, site management staff, policy makers, and administrators directing cancer care and prevention services are among those engaging in the Cancer Kitso course activities in Botswana. These individuals are based at various research sites, including the four public oncology centers designated by the Botswana Ministry of Health (Princess Marina Hospital, Nyangabgwe Referral Hospital, Sekgoma Memorial Hospital, and Letsholathebe II Memorial Hospital), as well as participants from Rutgers Biomedical and Health Sciences: faculty from Rutgers School of Nursing and clinical staff from Cancer Institute of New Jersey.

The study team will conduct a 15-minute survey, specifically to those who took part in the program and their supervisors at the four public oncology centers. The course instructors and content developers will also complete a survey to gather feedback on content development and course implementation. Direct supervisors of course participants will be surveyed to obtain data on clinical practice changes, program feedback, and any changes they may have observed. Lastly, study participants from the Botswana Ministry of Health will be interviewed to help understand the impact of the course, expectations, and outcomes of oncology provider education course, engaging non-specialized health care workers in oncology clinical activities, as well as organizational perspectives on implementing oncology clinical services, resource needs, and knowledge gaps to be addressed.

## Appendices (see second attachment)

1. Oncology Specialists, Curriculum Development, and Support Staff List – details the interprofessional group who contributed to the Cancer Kitso: Clinical Management – Level 1 course
2. Curriculum blueprint/content map – presents the framework of the Clinical Management – Level 1 course. It is a guide that outlines the learning objectives, lessons, and sequencing of content
3. Manual of Operations – presents the internal workflow process of implementing the course
4. Participant handbook – is a document that details the course contacts, program faculty, course information, schedule, how to access MS Teams, grading policy, and Rutgers digital badge
5. Botswana training schedule – presents the course schedule for the Botswana participants (health care workers at the four public oncology centers)
6. Lesotho Train the Trainer/PMH participant list
7. Lesotho Train the Trainer and Princess Marina Hospital schedule – display a list of activities, meetings, and tours from July 24<sup>th</sup> to 26<sup>th</sup>
8. Lesotho/Princess Marina Hospital Train the Trainer evaluation form – presents the evaluation for the Lesotho team and Princess Marina Hospital medical officers
9. Staff effort report – presents the amount of time and work staff from Botswana and Rutgers dedicated to the Cancer Kitso project
10. Article about the Cancer Kitso Training Course and Collaboration Efforts

## References

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