Prevention, diagnosis and management of cancer in Mozambique

Mozambique Ministry of Health
Hospital Central de Maputo
Universidade Eduardo Mondlane
MD Anderson Cancer Center
Brazilian Institutions:
  o Barretos Cancer Hospital
  o AC Camargo Cancer Center
  o Hospital Israelita Albert Einstein
  o Santa Casa de Misericórdia de Porto Alegre
  o Universidade Federal de Ciências da Saúde de Porto Alegre
  o Instituto Brasileiro de Controle do Cancer
  o Hospital Sirio Libanes
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Rice University, Houston, Texas
Clinton Health Access Initiative
Population Services International
US Agency for International Development
CDC/PEPFAR, HRSA/PEPFAR
International Gynecologic Cancer Society (IGCS)
The National Cancer Institute-Center for Global Health
Anadarko Petroleum Corporation
Prevent Cancer Foundation
Bush Institute
National Breast Cancer Foundation
Mozambique

- Population: 30 million
- 11 provinces and 128 districts
- Portuguese + 40 native languages
- Life expectancy: 58/62 years
- Below poverty line: 55%
- Literacy rate: ~60%
- HIV prevalence: 12% (>20% in urban areas)

One cancer referral center in the country
  - 5 medical oncologists/ 2 radionc,
  - 50 gynecologists, 15 pathologists
  - 3 gynecologic oncologists (new grads)
  - 1 pediatric oncologist

Radiation Center opened in 2019
Mozambique & The MD Anderson Sister Institution Network

- Collaboration began in 2014
- By invitation of the former (H.E. Maria da Luz Guebuza) and current First Lady (H.E. Isaura Nyusi)/MISAU
- January 2016: MOU signed between MD Anderson & MISAU
  - Capacity building for cervical cancer prevention
  - Clinical/surgical training in cancer prevention and treatment
  - Research
Health System Strengthening

- Policy development* (National Cancer Control Plan)
- Provider capacity building* (training and education, IGCS gynecologic oncology training fellowship)
- Development of research capability*
- Development of affordable technologies*

*Collaboration and partnerships
Many activities occurring in parallel
National Cancer Control Plan

• International Cancer Control Partnership and support

• Master course in Cancer Control and Prevention

• MD Anderson, Barretos Cancer Hospital (Brazil), US National Cancer Institute and International Atomic Energy Agency were part of a Technical Assistance Team to assist the MISAU in development of a national cancer control plan

• Plan adopted and released February 2019
National Cancer Control Plan

NCCP Launch February 2019
Capacity Building

- Site visits, training trips and monthly virtual tumor boards (Project ECHO) are part of an integrated strategy to improve clinical capacity in the prevention, diagnosis and management of cancer.

- Programs developed and implemented in partnership with the Ministry of Health, Maputo Central Hospital, University Eduardo Mondlane and Brazilian colleagues from 5 different hospitals.
Provider Capacity Building

Hands-on Training:
• Clinical guidance
• Workshops: Colposcopy, LEEP

Trainee Exchanges:
• Brazil and Mozambique

Regular videoconferences:
• Project ECHO
In Country Workshops

Training and workshops at HCM
2016 - January, September
2017 - January, May, November
2018 – April, October
2019 - January, March, July, November
2020 – January/February, July (virtual)
2021 - April (virtual)

• Surgery, Inpatient care
• Outpatient clinics
• Lectures
• Discussions

Supported by MD Anderson, PCF, US Govt
Cervical Cancer

Cervical cancer cases/deaths annually: 5,622/3,503
Incidence: 42.8/100,000
Mortality: 35.7/100,000
• Fewer than 5% of women have ever received cervical cancer screening (VIA, some Pap)
• HIV prevalence: 12% nationally, >20% in some urban areas
• National screening: ~150 health centers perform VIA/cryotherapy
• Referral system: Few providers trained to perform LEEP. Only ~10 LEEP machines in the country
• Most women present with advanced disease
• Palliative care services are very limited
Colposcopy and LEEP Training

- Training in management and treatment of women with abnormal cervical cancer screening tests
- Ability to perform colposcopy and LEEP is critical to remove advanced pre-cancerous lesions of the cervix
- Colposcopes and LEEP machines provided to six provincial centers with donor funds and CDC / PEPFAR support
- Training courses supported by philanthropic funds and CDC/PEPFAR

Supported by US Gov’t (CDC/PEPFAR) and Prevent Cancer Foundation
Colposcopy and LEEP Training

• Twelve training workshops have been conducted since August 2016
• ~170 different individuals have attended training, many attending more than once
• Since October 2018, gynecologists from all provinces have participated
• Following the workshop, a smaller number of doctors attend clinic with guidance to perform the clinical procedures
• Monthly videoconferences are held to discuss cervical cancer prevention cases/challenges. An average of 23 providers from around the country attend these conferences.
Colposcopy and LEEP Training during COVID-19 Pandemic

- Courses in July and August 2020 blend of in-person/virtual
- More than 150 health care providers from five countries (Mozambique, Angola, Zambia, Brazil and Portugal)
- Following the workshop, 18 clinicians received skills training in-person
- International faculty attended virtually, providing some lectures, and virtual guidance and support
Virtual Tumor Boards - Project ECHO

ECHO - Mozambique

First conference: 2015
Monthly meetings

• 45 min case discussion + 15 min didactic
• Conferences in cervical cancer prevention and gynecologic oncology
IGCS Fellowship

- A **two-year** Gyn Oncology training and education program
- Web-based curriculum
- Partnership between HCM, MISAU, faculty mentors from Brazil (5 institutions) & MD Anderson
- Faculty travel to Maputo 4-5x/yr
- Fellows spend 3 months in Brazil

- **First three fellows graduated**
  October 2020

Supported by IGCS and Brazilian specialists from 5 institutions
IGCS Fellowship Program

- Comprehensive two-year education and training program in gynecologic oncology, started in 2017
- Three gynecologists paired with specialists from Brazil
- Defined and established curriculum
- Regular visits for clinical training
- Monthly virtual tumor boards
- International support from specialists
- Regular assessments and final exam
- Fellows graduated in October, 2020
The Capulana Study

The Capulana study: a prospective evaluation of cervical cancer screening using human papillomavirus testing in Mozambique

Salcedo MP et al. Int J Gynecol Cancer 2020
Cervical Cancer Screening Project at Mavalane

The Capulana Study

- 898 women enrolled in the study with a HPV+ rate of 23.7%.
- The HIV+ rate of 20.2% with a HPV+ rate among HIV+ women of 39.2%
- More than 90% of HPV positive women completed all steps of their diagnostic work-up and treatment
- Treatment included cryotherapy, loop electrosurgical excision procedure, or referral to a gynecologist or gynecologic oncologist
- Of 8 invasive cervical cancers, 5 were diagnosed in women living with human immunodeficiency virus and 3 in human immunodeficiency virus-negative women
- All cancer patients were referred for oncologic care at HCM.

Salcedo MP et al. IJGC 2020
Evaluating innovative technologies and approaches to addressing cervical cancer in the Republic of Mozambique

Funded March, 2019

• HPV screening of 14,600 women in Maputo and Gaza using GeneXpert Platform and self-collected or provider collected samples.
• Implementing partner is Population Services International (PSI).
  • All HPV+ women will be treated with thermal coagulation, if eligible for ablation, or referred for excision (LEEP) or referred to HCM for evaluation and treatment if there is suspicion of cancer
• Development of new technologies.
• 678 women will be evaluated to test an optical imaging system for diagnosis of dysplasia (vs standard pathology).
• Two low cost point of care HPV tests will be evaluated (compared to GeneXpert HPV testing).

USAID – PEER (Partnerships for Enhanced Engagement in Research)
Current status

Screening and treatment of pre-invasive disease
• Cervical Cancer Screening capability in ~450 health facilities (VIA, Cryo), with plans to expand to more health units
• LEEP machines in 18 health facilities

Pediatric Cancers - New activities approved by Ministry - focused on early dx (education and training of providers)
Registries - Registries in Maputo, Beira and Nampula

Diagnosis
• Pathology Labs - ( 3 Central, 1 General), IHQ available at HCM
  Imaging - 5 CT Scanners, 1 MRI, 6 - Mammography units
• Clinical labs
Current status

Treatment

**Surgical treatment** – General surgeons and 3 gynecologists who have completed gynecologic oncology fellowship

**Radiotherapy** - at Maputo Central Hospital
Capacity to treat 75 patients/month (150 treated as of November 2020)

Palliative care - 1 unit at HCM and 7 pain treatment centers

February meeting at the MOH – Discussed implementation of the NCCP action plan and budget. Meeting included MOH, other government officials, NGOs, and partners
Multiple Integrated Strategies and Partnerships

- Policy (NCCP) and action/implementation plan
- Provider capacity building (training trips, conferences, observerships/ IGCS gynecologic oncology training fellowship)
- Development of research capability
- Development of affordable technologies for cancer prevention, diagnosis and treatment
- Collaboration and partnerships
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