Project ECHO to increase capacity for treatment of cervical dysplasia and cervical cancer in Mozambique

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Outline

- Background of cervical cancer in Mozambique
- Treatment capacity for cervical dysplasia and cervical cancer in Mozambique
- Advances of prevention and treatment programs in Mozambique
- Project ECHO as a tool to increase clinical capacity in low-resource settings
- Project ECHO cervical cancer prevention program example
- Summary
Age Standardized Incidence of Cervical Cancer
Ranking of cervical cancer incidence in women 15-44 years (2018)
Mozambique

- Population: 30 million
- 11 provinces and 128 districts
- Portuguese + 40 native languages
- Life expectancy: 62 years (women)
- Below poverty line: 55%
- Literacy rate: ~60%
- HIV prevalence: 12% (>20% in urban areas)
- High rates of cervical cancer
Cervical Cancer in Mozambique

Cervical cancer is the #1 cancer among women in Mozambique

Incidence: 42.8/100,000
Mortality: 35.7/100,000

• Represents 34% of all cancer diagnoses in women
• >5,500 cases and >3,500 deaths per year
• Most women present with advanced disease
Clinical infrastructure in Mozambique

<table>
<thead>
<tr>
<th>Human Resources</th>
<th>Infrastructure for treatment/prevention</th>
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<tbody>
<tr>
<td>• 13 pathologists</td>
<td>• No HPV Vaccine</td>
</tr>
<tr>
<td>• 3-5 medical oncologists</td>
<td>• External beam radiation</td>
</tr>
<tr>
<td>• ~70 Ob-Gyns</td>
<td>• No brachytherapy</td>
</tr>
<tr>
<td>• No gynecologic oncologist</td>
<td></td>
</tr>
<tr>
<td>• No surgical oncologists</td>
<td></td>
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<tr>
<td>• 150 new doctors graduate annually</td>
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</table>
National cervical cancer screen and treat program

Women 25-54, every 3 years
Visual Inspection with Acetic Acid (VIA) and Cryotherapy

Partners:
USAID, CDC, MCHIP, FGH, ICAP
Elizabeth Glaser, UNFPA, WHO

- Fewer than 5% of women in Mozambique have ever been screened for cervical cancer
- Many smaller health centers still lack basic tools needed for screening (speculums)

*Brandao, 2018
Colposcopy, Ablation and LEEP
Diagnosis and treatment of pre-invasive cervical disease
Screening and treatment of pre-invasive cervical disease

In 2016
- ~150 health centers performing screening (VIA) and cryotherapy
- Women referred for excision (LEEP) of the pre-cancerous lesion were LTFU
- There were ~7 LEEP machines in the country
- Almost no gynecologists were performing LEEP
- Few functional colposcopes
Screening and treatment of pre-invasive cervical disease

In 2020

- Support and coordination from the Ministry of Health and the First Lady of Mozambique
- Hands-on training and Project ECHO programs on-going
- Women referred for LEEP are evaluated and treated at some locations
- Most provinces have functioning equipment
- Cadre of Mozambican gynecologists who now serve as mentors and instructors in diagnosis and treatment of pre-invasive cervical disease
Diagnosis and Treatment of Cervical Cancer

Prior to 2017:

• No gynecologic oncologist in Mozambique
• No surgical treatment available for women with cervical cancer
• No radiotherapy
• Limited access to palliative care services
Diagnosis and Treatment of Cervical Cancer

After 2017:
• Comprehensive two-year education and training program in gynecologic oncology
• Three gynecologists paired with five specialists from Brazil
• Defined and established curriculum
• Regular visits for clinical training and surgery
• Monthly virtual tumor boards (Project ECHO)
• International support from specialists
• Regular assessments and a final exam
Gynecologic surgeries completed (CY 2016 – CY 2020)

<table>
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<tr>
<th>Year</th>
<th>International Mentor</th>
<th>Local Fellow</th>
</tr>
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<tbody>
<tr>
<td>2016</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2017</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>2018</td>
<td>37</td>
<td>4</td>
</tr>
<tr>
<td>2019</td>
<td>33</td>
<td>14</td>
</tr>
<tr>
<td>2020</td>
<td>0</td>
<td>26</td>
</tr>
</tbody>
</table>
After 2017:

Many challenges still remain

• Treatment only available in Maputo
• Brachytherapy not yet available
• Not all chemotherapy drugs available
• Eventually build a complete training program within Mozambique
• Eventually offer treatment outside of Maputo
Increasing treatment capacity requires a comprehensive strategy

Provider Capacity Building
- Hands-on surgical training
- Colposcopy/LEEP courses
- Gynecologic Oncology training (IGCS) and mentorship

Project ECHO
- Regular video-conferences with case-based discussions

Affordable Technologies and Research Capacity
- HRME (High Resolution Micro-endoscopy)
- POC HPV testing
- Mobile ODT
- Integrative cervical cancer screening models

Health System Strengthening
- Health Policy
- Partnerships with MOH
- NCI Center for Global Health collaboration
- Development of national cancer control plans
- African First Ladies
“In the U.S. and around the world, people are not getting access to the specialty care they need, when they need it, for complex and treatable conditions”

-Sanjeev Arora
Background: Hepatitis C in New Mexico

- 121,256 mi
- Population - 2.08 million
- Estimated > 28,000 people infected with HCV
- In 2004 less than 5% had been treated
- 2,300 prisoners were HCV positive (~40% of those entering the corrections system), none were treated
- No primary care physicians treating HCV as of 2004*

*Project ECHO Goal: Demonopolize knowledge
Background: Outcomes of Hepatitis C pilot study

- Mentoring program using technology and case-based learning
- Prospective study of 407 patients with HCV
- Compared patients treated at the University with patients treated at 21 rural clinics/prisons
- No difference in Hepatitis C cure rates (SVR) between the two groups
- No significant differences in serious adverse events between UNM and rural clinics
- Improved patient satisfaction and physician and provider self-efficacy

<table>
<thead>
<tr>
<th>HCV Genotype</th>
<th>ECHO Sites no. of patients</th>
<th>UNM HCV Clinic no. of patients</th>
<th>Difference between ECHO Sites and UNM HCV Clinic percentage points (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All genotypes</td>
<td>152/261 (58.2)</td>
<td>84/146 (57.5)</td>
<td>0.7 (−9.2 to 10.7)</td>
<td>0.89</td>
</tr>
<tr>
<td>Genotype 1</td>
<td>73/147 (49.7)</td>
<td>38/83 (45.8)</td>
<td>3.9 (−9.5 to 17.0)</td>
<td>0.57</td>
</tr>
<tr>
<td>Genotype 2 or 3</td>
<td>78/112 (69.6)</td>
<td>42/59 (71.2)</td>
<td>−1.5 (−15.2 to 13.3)</td>
<td>0.83</td>
</tr>
</tbody>
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Arora, et al., NEJM, 364(23); 2011
Benefits of Project ECHO for participants

• Professional interaction with colleagues in different locations, including academic centers
• Mix of work and learning
• Learning from each other
• Access to specialty consultations
• Long term impact to become local experts
ECHO is a Force Multiplier

**Telemedicine** Provider to Patient Communication vs. **Telehealth/mentoring** Provider to Provider Mentoring

*Force multiplier*
ECHO moves knowledge, not people

- To become an ECHO hub, an institution must:
  - Sign an agreement with the ECHO Institute
  - ECHO staff must receive training.

Project ECHO Program for Cervical Cancer Prevention in Mozambique

- **Format:** Regular sessions conducted in Portuguese, once a month since January, 2019.
- **Collaborators:** Brazilian mentors, Mozambique’s MOH and clinicians in all 11 provinces in Mozambique
- **Average attendance since 2019:** 20 participants per session
- **Area of focus:** Cervical cancer prevention and management of women with abnormal screening results
- **Mentoring:** Hands on training courses for Colposcopy and LEEP and technical support
Attendance summaries, Cervical Cancer Prevention Mozambique
Capacity Building for Treatment of Cervical Dysplasia and Cervical Cancer

Hands-on Training:
• Surgical/medical oncology
• Technical courses
  • Colposcopy, LEEP

Trainee Exchanges:
• Brazil and Mozambique

IGCS Global Curriculum:
• 2-year training program in Gynecologic Oncology
• Twinning approach
• Training 3 doctors in gynecologic oncology at HCM
What makes a successful Project ECHO program?

Participants:
- Enthusiasm and collaboration
- Interest in learning
- Interest in developing new skills
- Support from institution

ECHO hub/faculty:
- Enthusiasm
- Clinical expertise
- Humble approach and excellent communication skills
- Interest in learning from partners
Summary

- Project ECHO has an important role in capacity building for treatment of cervical dysplasia and cervical cancer in Mozambique.
- Project ECHO is one of multiple intervention strategies to address cervical cancer capacity in Mozambique.
- It takes time to build relationships in a distance, but ECHO accelerates and maintains this process.

If interested in exploring Project ECHO

- Review ECHO partnership agreements
- Find faculty and participant champions
- Observe a Project ECHO session (with potential partners)
- Get trained, Let us know how we can help
Consortium Partners

- MD Anderson Cancer Center
- Brazilian Sister Institutions and Affiliates:
  - Barretos Cancer Hospital
  - AC Camargo Cancer Center
  - Hospital Israelita Albert Einstein
  - Santa Casa de Misericordia de Brazil
- Universidade Eduardo Mondlane (UEM)

- Mozambique Ministry of Health (MISAU)
- Population Services International (PSI)
- Rice University
- Albert Einstein College of Medicine
- The International Gynecologic Cancer Society (IGCS)
- Clinton Health Access Initiative (CHAI)
- Bush Institute
- US Government
Thank you
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Questions about Project ECHO visit www.ECHO.unm.edu