Statistics on Clinical Activities and Practices of Cervical Cancer Clinics in Kenya, and beyond

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Disclosures

• All authors own stock in MobileODT
• JM, CP, DL receive some salary from MobileODT
• DL sits on MobileODT’s Board of Directors
Cervical cancer challenges in LMICs

Lack of infrastructure
• No national cancer registries
• Little information on number of patients, diagnoses, treatments by geographical region
• Lack of access to higher level screening and treatment modalities
• Lack of expert practitioners

Human Resource Deficiencies
• Lack of adequate training
• Absence of supervision
• Limited availability of experts

Operational and policy decisions are difficult for
• Clinical networks and hospitals
• Aid organizations
• National governments
EVA System and Image Portal

- Smartphone uploads information onto image portal
- Portal back end allows for tabulating statistics on imaging-related activities in cervical cancer clinics in LMICs
- Information can provide insight and help operational decision making
Collecting information on CervDx App

New patient screen

Decision Support Job Aid
Analyses

- Urban vs. rural screening camp
- Quality assurance
- In country supervisors vs. external review
Comparison of 2 screening camps

Screening camp 1, Central Nairobi
July 2015
85 patients (12.6%) have dysplasia

Screening camp 2, Nieri County
February 2016
9 patients (4.7%) have dysplasia

Screening camps were 100 km apart!
Quality assurance

- EVA units deployed at 2 clinics in Nairobi, Kenya
- Provider decision reviewed regularly by 2 local supervisors
Quality assurance

- Local supervisor review

**Agreement rate**

- 91.7% Provider in agreement with reviewer (341)
- 0.5% Provider underdiagnosed (2)
- 4.6% Provider overdiagnosed (17)
- 3.2% Provider did not record a diagnosis (12)

372 Cases

91.7%
Quality assurance

• Local supervisor review

Cases underdiagnosed by provider: Reviewer diagnosis

- 50% Precancerous lesion(s) (1)
- 50% Eligible for cryo or cold coag (1)
- 0% Ineligible for cryo or cold coag (0)
- 0% Suspected invasive cancer (0)
- 0% Cervicitis (0)

2 Cases
Reviewing the reviewers

- Review of providers by local supervisors repeated by US-based senior expert
- Expert review saw provider decisions but not local reviewer decisions

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<tr>
<th>580 Reviewed cases</th>
<th>133 Insufficient for assessment</th>
<th>17 Underdiagnosed patients</th>
<th>8 Health providers</th>
<th>82.6% Overall agreement rate</th>
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Total reviewed patient cases:
- 77.1% Clinically assessed (447)
- 22.9% Insufficient for clinical assessment (133)
Reviewing the reviewers

- Review by US-based expert
Reviewing the reviewers

- Review by US-based expert

![Chart showing cases underdiagnosed by provider: Reviewer diagnosis. 94.1% Precancerous lesion(s) (16), 88.2% Eligible for cryo or cold coag (15), 5.9% Ineligible for cryo or cold coag (1), 5.9% Suspected invasive cancer (1), 0% Cervicitis (0).]
Reflections

• **Data presented as a case study**
• Proof of concept of mhealth tool for remote expertise bringing direct impact abroad
• Capacity building for cervical cancer programs cannot focus solely on providers but also trainers and supervisors need further supervision
• Data driven feedback for retraining supervisors completed
• Next steps:
  • There is already a third reviewer corroborating this data
  • Optimize oversight in LMICs using low cost telemedicine