Vertically-Integrated Cervical Cancer Care in Haiti

Vincent DeGennaro, Jr, MD, MPH
Innovating Health International
Decentralization of Women's Cancer Program
Statistics
Gynecologic Cancers through 2018

Table 1: Characteristics of the study population (N=340)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age groups (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 39 (45)</td>
<td></td>
<td>13.2%</td>
</tr>
<tr>
<td>40 - 64 (216)</td>
<td></td>
<td>63.6%</td>
</tr>
<tr>
<td>65 - 89 (79)</td>
<td></td>
<td>23.2%</td>
</tr>
<tr>
<td><strong>Gyn. cancer types</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cervical (238)</td>
<td></td>
<td>70.0%</td>
</tr>
<tr>
<td>Endometrial (45)</td>
<td></td>
<td>13.2%</td>
</tr>
<tr>
<td>Ovarian (43)</td>
<td></td>
<td>12.6%</td>
</tr>
<tr>
<td>Vulvar (3)</td>
<td></td>
<td>0.9%</td>
</tr>
<tr>
<td>Vaginal (2)</td>
<td></td>
<td>0.6%</td>
</tr>
<tr>
<td>Trophoblastic (2)</td>
<td></td>
<td>0.6%</td>
</tr>
<tr>
<td>Unknown primary (7)</td>
<td></td>
<td>2.1%</td>
</tr>
<tr>
<td><strong>Cancer stage</strong> (n=285)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 (8)</td>
<td></td>
<td>2.8%</td>
</tr>
<tr>
<td>I (30)</td>
<td></td>
<td>10.5%</td>
</tr>
<tr>
<td>II (59)</td>
<td></td>
<td>20.7%</td>
</tr>
<tr>
<td>III (67)</td>
<td></td>
<td>23.5%</td>
</tr>
<tr>
<td>IV (121)</td>
<td></td>
<td>42.5%</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deceased (118)</td>
<td></td>
<td>34.7%</td>
</tr>
<tr>
<td>Alive/in treatment (196)</td>
<td></td>
<td>57.7%</td>
</tr>
<tr>
<td>Lost to follow-up (26)</td>
<td></td>
<td>7.6%</td>
</tr>
</tbody>
</table>

Figure 2: Number of incident and deceased cases per gynecological cancer type (N=340)
Under 30

• 20% (n=461) were adolescents and young adults. 82% of these patients were female
• Breast cancer was the most common type (n=222, 48%%)
• Followed by cervical cancer representing 10% of the cases (n=43)
HIV/AIDS

• 1007 (44%) had a known HIV status.
• Eighty-three of them (8%) were HIV-positive, among them 63 women and 20 men.
• 32% of those with HIV had invasive cervical cancer (n=27)
Screening
Proof of Concept for Community-Based Screening

• Educated nearly 30,000 people and screened nearly 7,000 women for breast and cervical cancer in four geographic departments in Haiti in 2016-17.

• In 2017-18, we launched a program in an industrial park where we educated 7000 women, screened 5176 for breast cancer, 4005 for cervical cancer, and treated over 1001 for pre-cervical cancer lesions, all at the infirmaries located in the factories.

• For a cancer awareness study in 2016, we also worked with ten CHWs to interview over 400 people from all over Haiti to better understand barriers to understanding and care.
• **Background**: Innovating Health International and Share Hope recently implemented a cancer screening program for working class women in Port-au-Prince.

• Most women work 6 days weekly.

• **Methods**: For 4,000 women, nurses perform clinical breast exam, teach self-breast exam, and instruct patients how to perform vaginal self-swab (Qiagen careHPV) in the factory infirmary.

• Inclusion criteria for women include age 30 to 50 years.

• Women who screen positive for HPV will then be followed with VIA and thermocoagulation.
Outcomes

• Data collection is not complete.
• Over 6229 women received education on women’s cancer
• Of the 4711 women who are eligible for HPV screening (30-50 years of age), 4005 or 85% of those eligible accepted testing.
• Of those tested, 904 or 22% were HPV-positive and proceeded to VIA.
• For women who are HPV-positive, 55 or 12% were also VIA positive.
• All HPV-positive women received thermocoagulation except for two
• Of all those sensitized, 5232 or 84% chose to have clinical breast exam.

• 168 women had a positive clinical breast exam, and then breast ultrasound. Three required biopsy.

• Trained 30 nurses and 2 doctors to perform HPV tests and VIA with thermocoagulation.

• 97% of those eligible accepted HPV screening with self-sampling.

• **Next steps:** Expand access to cancer screening for the rural and working poor through using mobile health technologies and community-based education and screening.
**HPV/VIA/Mobile colpo/TC**

- Completely mobile and can be disseminated everywhere
- Community-based
- Accompanied by education
- Less expensive
- VIA with EVA is not subjective
- 75% of women won’t need pelvic exam
- Combined with SRH and clinical breast exam
- No gas tanks, no doctor, no electricity needed

**Pap Smear/VIA/Cryo/Colposcopy**

- Pap smear-USD $20 and only in Port-au-Prince
- Cryo requires large gas tanks. Hard to transport and only 2 companies sell them
- VIA by nurses is very variable quality and subjective
- Few doctors trained in colposcopy and fewer colposcopes available
- Pelvic exam for all
- Death is alternative in many LMIC
Treatment
Chemo and Surgery

152 cervical cancer patients

16 lost to follow up

136 patients sought further treatment

31 neoadjuvant chemotherapy

1 adjuvant chemotherapy

31 palliative chemotherapy

46 palliative care

2 chemoradiation

25 simple hysterectomy (no chemo required)

7 radical hysterectomy

6 simple hysterectomy

3 “open and close”
Radical Hysterectomy

• From October 2017 through August of 2019, four foreign-trained gynecologic oncologists trained two Haitian OB/GYNs to perform radical hysterectomies.

• All women Stage IB2 to Stage IIIB received three to six cycles of neoadjuvant chemotherapy (cisplatin, paclitaxel, or most commonly both).

• Over less than two years and during ten visiting trips, two Haitian OB/GYNs learned while performing 47 surgeries for advanced cervical cancer.

• Prior to neoadjuvant chemotherapy, there were 7 cases of Stage I, 25 Stage II, 10 Stage III, and three others who were staged at Stage III were found to be too advanced intraoperatively.

• Complications included two vesiculovaginal fistulas and two with urinary incontinence, and one dehisced wound that led to sepsis and death within six weeks.
The Future
I Innovations

1. Combining four mobile health technologies (HPV vaginal self-swabs, battery-operated treatment through thermocoagulation, portable computer-assisted colposcopy for standardization, and portable breast ultrasound with AI) to give women in Haiti a standard of cervical cancer prevention comparable to anywhere else in the world.

2. Screen and treat women anywhere through community-based screening without a doctor or clinics and going directly to where women live and work through use of CHWs and midwives.

3. Improving upon the existing technologies through real-world application in the settings and populations where they are needed most.
• CHWs will provide comprehensive sexual and reproductive health and reproductive cancer education, perform mobile breast ultrasound, and teach women to perform HPV vaginal self-sampling.

• Midwives will use thermocoagulation to treat all HPV-positive women that same day, minimizing loss to follow up

• Through testing AI and mobile technology on thousands of women, we will improve them in exactly the populations and conditions where they are most desperately needed.

• Vaginal HPV self-swab→ portable computer-assisted colposcopy→ battery-operated thermocoagulation treatment
• InnovatingHealthInternational.org
• KanseAyiti.com