CERVICAL PRECANCER TREATMENT PLANNING TOOL

Evaluating scenarios for scaling up treatment of cervical precancer

Increasing access to cervical precancer treatment

PATH

Background

Cervical cancer is the second most common cause of cancer death globally among women younger than 50 years. Almost 3.5 million women will die in the next ten years unless prevention is scaled up (Globocan 2018; see globocan.iarc.fr/Default.aspx). With support from the Bill & Melinda Gates Foundation, PATH aims to improve access to and use of cervical precancer treatments in low- and middle-income countries (LMICs). As countries plan to scale up their treatment programs to reach more women, tools to determine what equipment to procure, how much to procure, and how to deploy it will help decision-makers make better use of scarce resources.

New tools for decision-making

To assist country decision-makers, PATH has developed a Cervical Precancer Treatment Planning Tool. This tool contains a scenario-based Excel model (Table 1, Figure 1) and Tableau data visualization mapping tool that enable users to examine various strategies for deployment of ablative cervical precancer treatment equipment. The Excel model is designed to evaluate the number of women treated, the number of units of equipment needed by type, and the associated start-up costs and cost of gas across five different scenarios. It currently contains adjustable baseline data for nine countries in sub-Saharan Africa,* but can also be adapted for use by any LMIC. The interactive Tableau data visualization, which is currently only available for Uganda, illustrates what the results look like at the district level.

This tool is now available to country decision-makers who want to weigh the tradeoffs when trying to balance patient convenience and access with efficient utilization of equipment, skilled personnel, and financial resources. Results generated by the tool can be used to inform national screening and treatment strategies and decisions about treatment device procurement and deployment.

Table 1. Scenario overview

Scenario	Title	Description
1	Single-visit approach (SVA) for screen and treat	Treatment is available at all health centers and higher-level facilities (excludes health posts). Women receive screening and treatment in one visit. Assumes 10% of women will refuse treatment.
2	Hospital treatment	Treatment is only available at hospitals. If a woman is screened at a health center, she will need to travel to a hospital for a second patient visit to receive treatment. Assumes 30% of women will not go back for a second visit for treatment at a hospital.
3	District treatment	Treatment is only available at select district hospitals. A minimum of one device is placed per district. Additional devices are placed in districts with increased demand. Assumes 40% of women will not travel to a second visit at a district hospital in their district for treatment.
4	District clustering	Treatment is only available at select district hospitals. Up to two districts with lower demand can share one device. Additional devices are placed in districts with increased demand. If two districts are sharing one device, assumes 50% of women will not travel to a second visit at a hospital in a neighboring district for treatment. If the device is located in the woman's district, assumes same as Scenario 3.
5	Hybrid static-mobile	Treatment equipment is based at select hospitals and is available for treatment at the hospitals, as well as delivered by mobile units from hospitals to screening sites. Assumes that 20% of women will not go back to a hospital or their local screening site for a second visit for treatment.

Note: All scenarios assume that screening is available at all health centers and higher levels of the health system. As women travel farther to reach care, the model assumes that the treatment completion rates will decrease.

* The countries currently included in the model are Ethiopia, Ghana, Kenya, Malawi, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.

How the tools support evidence-based planning

The scenario-based Excel model and related mapping tool quantify the tradeoffs that need to be considered when evaluating options for scaling up use of cervical precancer treatment. For example, a single-visit approach (SVA) for screen and treat (Scenario 1) may lead to treatment for the most women, but the financial and human resources costs for this strategy are often higher (see Figure 1, top left and bottom right graphs). Furthermore, treatment devices, which can each treat approximately 20 women per week, would likely be highly underutilized in this SVA scenario (see Figure 1, top right graph). Although reducing the number of devices deployed reduces the costs dramatically and improves equipment utilization, many women who screen positive for cervical precancer would require a second visit for treatment. Depending on the deployment scenario, women may need to travel long distances for a follow-up treatment visit, putting services out of reach for some. Overall, these tools provide country-level decision-makers with information and data needed to weigh multiple scenarios and ultimately improve access to a lifesaving treatment while optimizing use of scarce resources.

For more information

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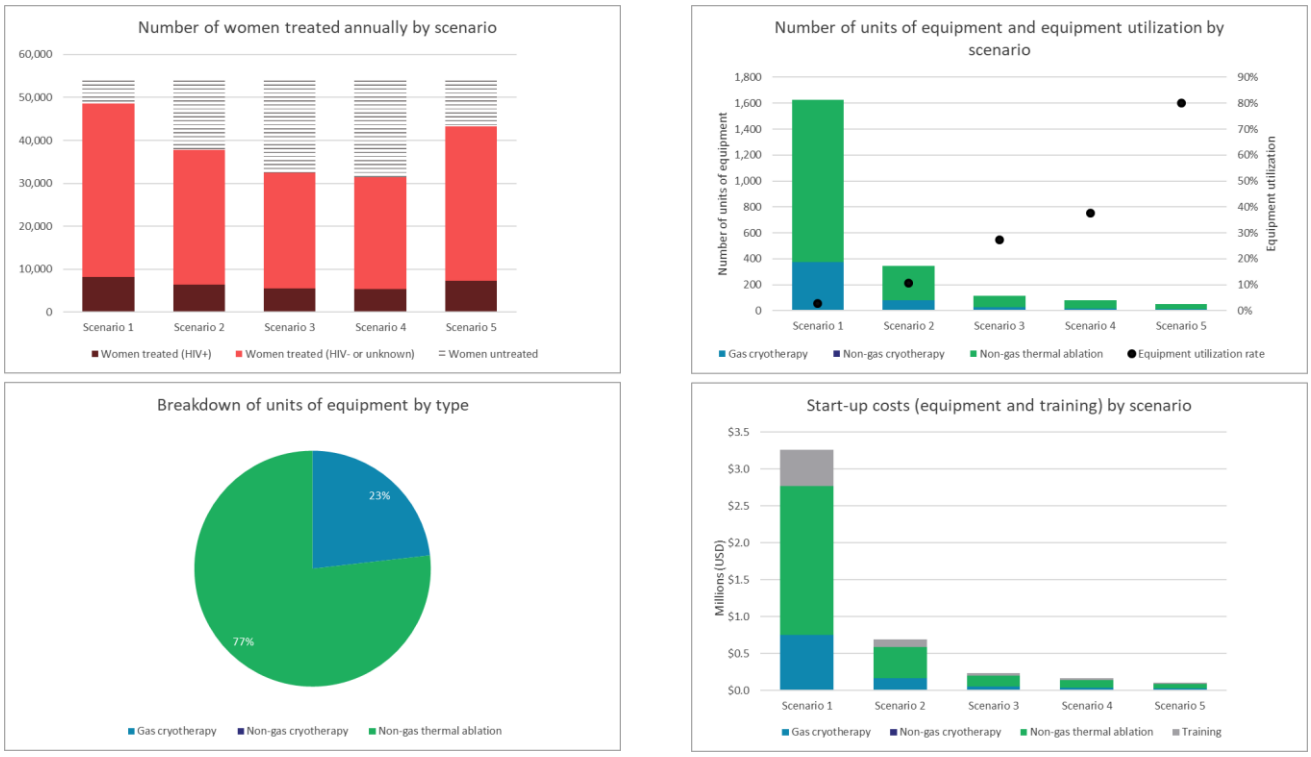
Figure 1. Example of Excel dashboard: Uganda



Note: Model dashboard example currently excludes the use of non-gas cryotherapy technologies. Manufacturing plans for commercialization are currently unknown for this device category.

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PATH is a global organization that works to eliminate health inequities by bringing together institutions, businesses, investors, and individuals to solve the world's most pressing health challenges. With expertise in science, market development, technology, advocacy, and dozens of other specialties, PATH develops and scales solutions—including vaccines, drugs, devices, diagnostics, and innovative approaches to strengthening health systems worldwide.

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