# MobileODT: a case study of a novel approach to an mHealth-based model of sustainable impact

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**Abstract:** A persistent challenge facing global health actors is ensuring that time-bound interventions are ultimately adopted and integrated into local health systems for long term health system strengthening and capacity building. This level of sustainability is rarely achieved with current models of global health intervention that rely on continuous injection of resources or persistent external presence on the ground. Presented here is a case study of a flipped approach to creating capacity and adoption through an engagement strategy centered around an innovative mHealth device and connected service. Through an impact-oriented business model, this mHealth solution engages stakeholders in a cohesive and interdependent network by appealing to the pain points for each actor throughout the health system. This particular intervention centers around the MobileODT, Inc. Enhanced Visual Assessment (EVA) System for enhanced visualization. While focused on challenges to cervical cancer screening and treatment services, the lessons learned are offered as a model for lateral translation into adjacent health condition verticals.

**Keywords:** Cervix; cervical; mobileODT; Enhanced Visual Assessment (EVA); device; social business; b-corp; eHealth; mHealth; VIA; VIA/VILI; diagnostics; health system strengthening

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Traditionally in the global health field, mHealth solutions are incorporated into established interventions as an adjunct to improve efficiency or enable scaling. We present here an approach to tackling a global health challenge that is novel in its leveraging of business incentives in low resource settings. This drives adoption of an mHealth solution as the primary intervention around which stakeholders engage synergistically and sustainably.

Much of the focus of international development work, particularly in the health sector, is moving away from episodic external interventions towards more sustainable capacity building endeavors. While a noble ideal, successful implementation of these training and knowledge transfer programs in a collaborative and sustainable way has proven difficult to achieve (1,2). Most programs are built around interinstitutional collaboration focused on specialty training or targeted at program management and rely on established national (or local) structures to disseminate the learning to the point-of-care at the community level. However, these dissemination mechanisms face challenges because the integrations between community level providers and larger medical centers are less formalized and robust than in the developed world where the teaching partner comes from. Conversely, when large and small NGOs target the community level, programs often fail to address the upper level administrative challenges to promote sustainability of a disseminated program.

New intervention models are disrupting this status quo by leveraging business incentives aligned with impact objectives. A case study exemplifying this strategy is MobileODT, Ltd. MobileODT is a certified B Corp (3): a private sector, socially-minded startup focused on bringing advanced visual diagnostic tools to low- and middle-income countries. Its first target is cervical cancer screening, diagnosis, and treatment in Kenya. Currently, cervical cancer screening is organized and delivered at the local level by a combination of government clinics, private nurses, and NGO-supported activities. These

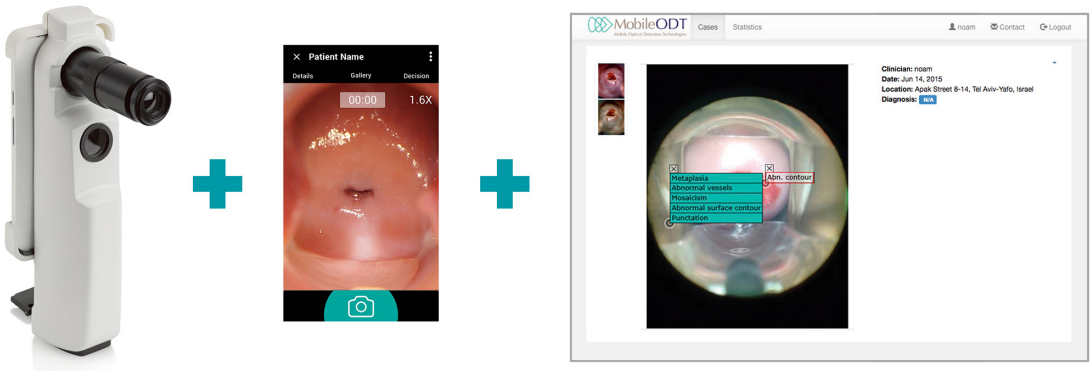


**Figure 1** The Enhanced Visual Assessment (EVA) System.

programs face three major challenges: getting women into the clinic for screening, accurately diagnosing and triaging patients, and ensuring that the women make it to the next recommended level of care, either a subsequent screening at the appropriate interval or care at a higher level facility.

A traditional public health approach to improving these problems would likely rely on grant or public funding and stakeholder engagement without a clear path to sustainability due to resource intensive logistical hurdles, misaligned incentives and dependence on external experts. MobileODT has flipped this paradigm by employing an approach that leverages a mobile health device and platform as an anchoring point around which to build comprehensive health system integration to address these three challenges in the context of the national cervical cancer vertical. The strategy that MobileODT has taken works because of its two pronged approach to ensuring adoption and sustainability of their interventions.

The first is the Enhanced Visual Assessment (EVA) System, a visual inspection device built around a mobile phone platform that enables colposcopy-grade imaging. Over 150 devices have been sold so far to government clinics, NGOs, and private practitioners, and the EVA System has been used in three large scale cervical cancer screening camps within the past year (*Figure 1*).

As a physical product, EVA creates a focal point for improving every aspect of cervical cancer screening. At its most basic, it appeals to practitioners as a new device that improves a screener's ability to visualize the cervix with magnification and a polarized bright light that reduces glare. In addition, the digital tools made available by the app enables clinicians to document their examination using image capture and simple data entry forms. From a patient engagement standpoint, due to the fact that the examination is recorded, this new device enables the patient to see an image of her body that was previously only available to the screener. Named the "#cervixselfie" by a journalist writing about the Stop Cervical, Breast, and Prostate Cancer in Africa screening camp (SCCA 2015), this shared examination has naturally created a talking point that has become exceedingly powerful in promoting patient follow up and word-of-mouth referrals within the community (4). The sharing of these cervical images empowers the patient to turn a procedure that was previously abstract and uncomfortable into an experience of ownership and connection to what is happening in her own body. This sense of ownership in our patients is what we as clinicians strive for in order to create a true partnership for health and is a crucial factor in ensuring adherence to a care plan. Reports from the ground continue to report a dramatic increase in word-of-mouth screening and successful referrals after initiation of image sharing with the patient.

The second prong of the implementation approach that MobileODT is using is the creation of a stable ongoing connection between primary screeners and expert clinicians for remote decision support and learning through the EVA System. This connection empowers primary screeners to be more confident in their decisions and continuously improve their competence through synchronous and asynchronous consultation for point-of-care learning as well as ongoing feedback on their previous decisions and ways to improve for continuing education outside of the patient encounter. MobileODT is also building in a standalone reference library within the mobile app for isolated decision

support without an outside expert. This robust continuing education and quality assurance program between primary health workers in the field and remote experts via an mHealth product is largely unprecedented. While remote consultation using photographs has been piloted widely, the sophistication of the learning tools and the capacity for per health worker tracking of quality metrics are new to this field. This larger quality assurance aspect of the EVA System implementation enables an even deeper integration of the program into the health system that supports cervical cancer screening. This high resolution view of screening quality and impact aligns with the incentives of the large cervical cancer focused NGOs and ministries of health, and the outcomes that they hope to measure. Through these partnerships, MobileODT closes the loop back to the community level by supporting screening camps (5,6) that further spark patient and provider engagement and excitement.

Through this innovative approach to mHealth, MobileODT has been able to create a synergistic ecosystem of improved patient/provider relationships, patient empowerment, grassroots marketing, continuous capacity building, multilateral partnership and engagement of all stakeholders around its unique and continuously evolving hardware/software EVA platform. Traditionally this level of engagement at the NGO level is only achieved after extended time and resources spent in a location and even then it can be an ongoing struggle to engage stakeholders at every level. Through a market appropriate social business model, MobileODT has been able to tie together the appropriate incentives for engagement from the ground up to the national government. This creates a chain reaction in which the stakeholders themselves are seeking each other out around the novel intervention, thus enabling MobileODT to focus on continuous product improvement and alignment with stakeholders needs. This method of providing a relatively simple connected mHealth product that improves existing clinical workflow retains end users. Grounded in this stable user base, the connected platform is able to generate value throughout the healthcare vertical.

From a sustainability perspective, as companies taking this approach continue to develop their technology, this stable user base and buy in from actors across the healthcare system will enable entry into health sectors adjacent to the current disease target (cervical cancer in this case) with minimal resistance. This relatively simple connected product based intervention strategy for comprehensive health system improvement and capacity building can provide a model for other organizations hoping to generate sustained impact.

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

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