



**INNOVATIONS IN
HEALTHCARE™**

Adopting and Scaling Primary Healthcare Innovations in Kenya

Selected Case Studies

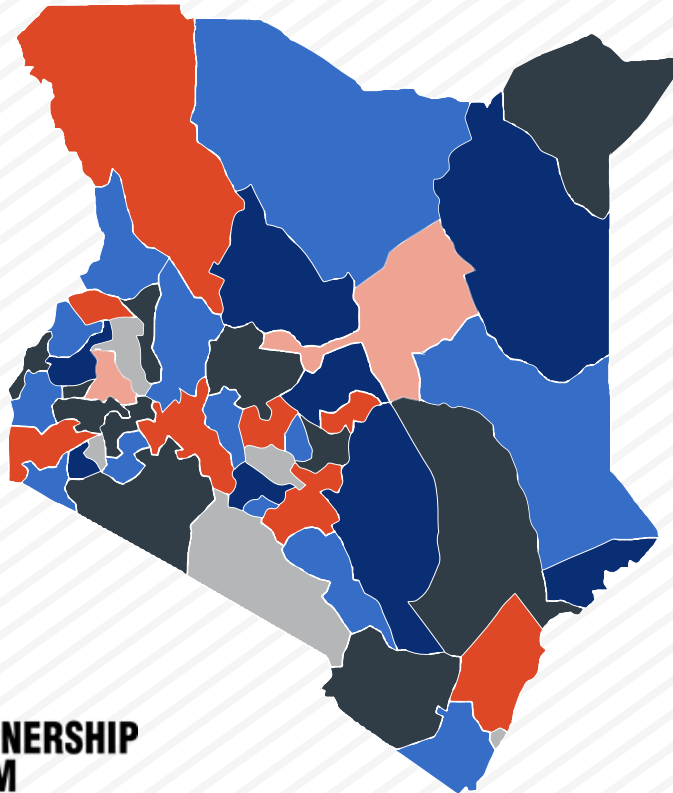


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INTRODUCTION

To achieve universal health coverage (UHC), Kenya has made a policy decision to increase primary healthcare services beyond curative healthcare. However, Kenya grapples with challenges around improving quality of care, optimizing the health workforce to provide comprehensive services, and sustainably funding primary healthcare for all.¹ To tackle these challenges and expand primary healthcare services, Kenya is rolling out the Primary Health Care Network (PCN), which is an integrated service delivery model in line with the Kenya Primary Health Care Strategic Framework 2019–2024. Additionally, the Kenyan Ministry of Health (MOH) launched the Primary Health Care Network Guidelines to support county governments and implementing partners in setting up and operationalizing PCNs.

With a view to gaining insights on how to integrate evidence-based primary care innovations in the implementation of the new primary healthcare model, Kenya's MOH commissioned a research project² to understand the qualities of successful primary healthcare enterprises ("innovations") and commonalities among them in Kenya and other low- and middle-income countries. As part of its deliverables, the research project developed seven case studies on Kenyan and global primary healthcare innovations, outlining their effectiveness in advancing primary healthcare in Kenya and comparable countries.

Primary healthcare is the most basic package of essential health services and products needed to prevent disease, promote health, and manage illness. (PATH)*

The seven case studies were selected following a review of 247 healthcare innovations sourced from referrals, innovator networks, and innovation accelerators. These innovations were assessed against the PATH's definition for primary healthcare (see sidebar) to ascertain fit as a primary healthcare innovation. Sixty-eight innovations passed the definition test and were evaluated and scored against an adapted set of criteria based on global evidence.^{3,4} The criteria outlined three major questions:

1

HOW WELL DOES THE INNOVATION WORK?

2

CAN THE INNOVATION SCALE AND ADAPT TO THE TARGET POPULATION?

3

WHAT VALUE DOES THE INNOVATION ADD TO SOCIETY AND TO THE HEALTHCARE SYSTEM?

The innovations with the highest scores were selected for the case study series.

These case studies were written to support Kenya's health sector, at both national and decentralized levels, as well as other low- and middle-income countries, to better understand how innovations support the advancement of primary healthcare and how governments can adapt and scale primary health innovations. Additionally, the case studies outline the important role of the private sector's support in scaling innovations within and across countries.

* <https://www.path.org/articles/what-is-primary-health-care>

The chosen case studies showcase **five key insights** on how adoption and scaling of primary healthcare innovations contributes to the achievement of UHC goals regarding improved access to affordable, high-quality healthcare:

1 Investing in the health workforce allows for innovations to be optimally integrated into the health system and to deliver outsized impact. Offering an in-service training curriculum for health providers as part of the rollout of Massachusetts General Hospital's Every Second Matters–Uterine Balloon Tamponade (ESM-UBT) program ensures that healthcare workers have the necessary skills to implement the innovation, leading to a 98% usage success rate. The Emergency Obstetric and Newborn Care (EmONC) mentorship program by Jacaranda Health also advocates for mentorship and capacity-building of primary healthcare multidisciplinary teams. The multidisciplinary mentorship approach includes various cadres of health workers engaging in simulation drills and leverages digital tools for continuous capacity development. As a result, the counties that Jacaranda Health works with have noted improvement of maternal health outcomes, such as a decrease in postpartum hemorrhage and neonatal deaths.

2 Opportunities to integrate infrastructure and models developed by innovators that align with government policies lead to efficiencies. The PROMPTS data platform developed by Jacaranda Health has supported the Kenyan MOH's efforts to aggregate broader health system insights: during COVID-19, for instance, Jacaranda shared dashboards with counties to show where facilities or clients were experiencing challenges with care. The data from the PROMPTS interventions can support primary care networks through creation of dashboards that highlight progress on pre-defined indicators, and the use of PROMPTS data can identify real-time trends or challenges in care-seeking.

3 Community engagement supports advancement of primary healthcare. Educating patients and their communities on high-impact medical skills improves adherence to treatments and increases healthcare-seeking behavior, as illustrated by Noora Health's family caregiver education program. Furthermore, increasing patients' education and promoting greater understanding of their own health conditions can further empower these individuals to seek care proactively and access primary healthcare services early—before health issues worsen or escalate to a degree requiring specialist care.

4 Standardizing processes in primary care settings allows for optimized patient flows and better resource utilization. Clínicas del Azúcar offers standardized chronic disease management programs targeting low- and middle-income patients. This innovation, which takes advantage of high customer traffic locations near popular retailers, can be implemented in overburdened public health systems where cost, travel, and wait time barriers disproportionately limit access to healthcare for low- and middle-income patients in rural areas. The organization saw more than 65% of patients meet their blood sugar level goals, in contrast with 19% of patients receiving care through the public system.^{6,7}

5 Patient-centric care increases uptake of health services. Interventions that target and address unique challenges faced by communities and individuals in accessing healthcare services lead to improved health-seeking behavior. North Star Alliance, for instance, has set up Blue Box Clinics (formed from repurposed shipping containers) along Africa's transport corridor with the aim of providing healthcare to mobile workers and their communities. In 2019, this innovative approach offered healthcare to a clientele consisting of 26% truck drivers, 34% sex workers, and 40% of the local community.⁸

These case studies highlight how primary healthcare innovations can be integrated into the public health system and increase access to care in underserved communities. The case studies detail the challenges to overcome as MOH and the private sector adopt the innovations and work to make them successful. Most importantly, the case studies showcase the impact of these innovations in the primary healthcare sector and demonstrate how their adoption can help MOH achieve its goals through the primary healthcare networks.

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3. Gerald Bloom, Annie Wilkinson, and Abbas Bhuiya, "Health System Innovations: Adapting to Rapid Change," *Globalization and Health* 14, no. 1 (March 9, 2018): 29, <https://doi.org/10.1186/s12992-018-0347-8>.
4. Zullig and Hayden B Bosworth, "Selecting, Adapting, and Sustaining Programs in Health Care Systems," *Journal of Multidisciplinary Healthcare* 8 (April 16, 2015): 199-203, <https://doi.org/10.2147/JMDH.S80037>.
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8. <https://www.northstar-alliance.org/key-figures/>.

CASE STUDIES



Jacaranda Health



ESM-UBT



Living Goods



North Star Alliance



Pro Mujer



Clínicas del Azúcar



Noora Health

Organization	Jacaranda Health
Website	https://www.jacarandahealth.org/
Locations	Kenya
Year Founded	2010
Health Focus Areas	Maternal and Newborn Health, Human Resources for Health
Organization Type	Nonprofit
Innovation	PROMPTS and EmONC Mentorship Program



INTRODUCTION

Jacaranda Health works to **improve the quality of maternal health and newborn care services by introducing low-cost quality improvement solutions in collaboration with the public sector.**¹ This Kenyan-based nonprofit focuses its interventions in the public sector as data shows that 80% of Kenyan women who deliver in health facilities do so at facilities managed in the public sector. Jacaranda Health has two innovative flagship interventions: PROMPTS and Emergency Obstetric and Newborn Care (EmONC) mentorship. **PROMPTS is a digital platform that provides health information to expectant mothers with the aim of positively influencing health-seeking behavior. EmONC mentorship is an on-the-job-training program on essential elements of quality maternal and newborn care that Jacaranda Health has adapted for low-cost integration into the public sector. The organization collaborates with 15 counties in Kenya on this health worker mentorship program while PROMPTS has 750,000 users enrolled across Kenya.**²



PROBLEM

Close to 60% of deliveries in Kenya occur at health facilities,³ but the quality of maternal care in the country remains inconsistent.⁴ The impact of Kenya's low-quality maternal care is reflected in its maternal mortality ratio of 342 deaths per 100,000 live births.⁵ With over 6,000 women dying annually during childbirth, evidence shows that the low quality of clinical care provided to mothers in Kenya is a major driver of poor maternal and newborn health outcomes.⁶ There is also inequitable access to quality maternal healthcare, with only 8% of poor women able to access maternal health services of adequate quality.⁷ Newborn deaths contribute to almost half of all deaths of children aged 5 years and younger in Kenya,⁸ with data showing that newborn health outcomes are closely tied to the quality of maternal healthcare because most of these deaths are due to either preterm deliveries or complications occurring in childbirth (intrapartum).⁹ In an audit of deaths that occurred in 2014, a national committee identified that delays in care-seeking contributed to 30% of maternal deaths.¹⁰

Kenya has increased investments toward reducing maternal and child mortality in the past decade.¹¹ These investments have included rolling out free maternal care with the Linda Mama program and increasing coverage of key maternal and newborn services across the country. These investments have led to more women accessing care at health facilities, but there has not been an accompanying improvement in maternal and newborn health outcomes.¹² **This incongruence between increased access and sustained poor outcomes has been primarily attributed to the low quality of clinical services provided at facilities.**¹³

Maternal complications (such as hemorrhage or eclampsia) and neonatal complications (such as birth asphyxia) can be better managed or averted by providers with skills in emergency and obstetric newborn care (EmONC).¹⁴ Despite numerous efforts in classroom-based training programs in Kenya, providers consistently score an average of 50% on EmONC skills and knowledge,^{15,16} and there is a significant drop in knowledge and practice a few months after short, one-time training sessions.¹⁷ Concurrently, empowering women with knowledge about pregnancy complications is critical as studies have found that women seek appropriate healthcare when they know and recognize pregnancy and postpartum danger signs.¹⁸



SOLUTION

Against this context, Jacaranda Health's interventions focus on the public health system to improve clinical quality while also engaging with pregnant mothers to incentivize them to seek care at the right time.¹⁹ The organization has two complementary low-cost solutions that aim to solve delays in care-seeking and poor clinical quality of maternal health services.²⁰ **PROMPTS is a digital health platform offering free targeted two-way messaging and a help desk service to new and expectant mothers regarding pregnancy and newborn health-related questions.** The second solution, **the EmONC mentorship program, supports quality improvement of maternal health via a network of government nurse champions, or mentors, who build the capacity of their peer providers through a series of simulation drills, lectures, and one-to-one coaching.**²¹ Using this approach, Jacaranda Health seeks to seed a culture that sustains high-quality maternal and child health services in Kenya's public hospitals.



PROMPTS empowers women to seek care at the right time and place, with women receiving personalized health messaging via the platform at different stages of their pregnancies. These notifications include critical health information, tips on financial planning to prepare for delivery, and two additional messages in the early postpartum period concerning newborn nutrition, family planning, and immunization. A randomized controlled trial at three large public hospitals showed improved health-seeking behavior among pregnant women and improved uptake of postpartum family planning among the enrolled participants.²² Over the past five years, PROMPTS has evolved to become a two-way messaging digital health platform that triages questions from users by way of embedded artificial intelligence (AI).²³ The help desk is manned by health professionals who answer specific questions and refer high-risk patients to health facilities. To strengthen linkages to care, client experience and feedback is collected, anonymized, and shared with facility leadership as "scorecards" that identify improvement areas for health facilities. The onset of the COVID-19 pandemic in 2020 disrupted antenatal services, and the PROMPTS team integrated tele-triaging and virtual consultations to ensure continuity of care for pregnant women.²⁴

While PROMPTS addresses the demand side of maternal and newborn healthcare, EmONC mentorship seeks to improve the supply side by enhancing the knowledge and key lifesaving skills of service providers. The EmONC mentorship program, which runs over four to six months, provides continuous professional development for maternity teams. The training combines several evidence-based approaches, including Helping Babies Breathe, PRONTO International's low-tech simulation tools,²⁵ and Kenya's Ministry of Health (MOH) guidelines. A lead mentor from the Jacaranda Health team trains experienced nurses from public facilities, who in turn deliver a structured curriculum to build capacity among fellow frontline healthcare workers on critical maternal and newborn care skills.²⁶ The innovative aspects of this approach include developing integrated training materials adapted for the public facility context, creating a network of public sector nurse champions or mentors, moving training from classrooms to facilities where deliveries take place, and incorporating simulations to ensure that critical, practical lifesaving skills are correctly applied.²⁷ Additionally, the program has developed a standardized toolkit that enables the trained mentors to guide trainees at their assigned facilities toward continuous quality improvement.²⁸



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

Jacaranda Health implements PROMPTS and the EmONC mentorship program as a package of complementary solutions. To ensure sustainability, both programs are incorporated into county annual work plans, with the goal that counties share the implementation costs by allocating budgets toward these programs' activities.²⁹ To date, counties have shared 50% of the implementation costs of the EmONC mentorship program. Under the leadership of Kenya's MOH, the Jacaranda Health mentorship team contributed to the development of a national EmONC mentorship package that incorporates learning from their innovative approach.



SCALABILITY

The total operating costs of PROMPTS—from pregnancy to 12 months postpartum—is 80 KES per mother enrolled, which includes the cost of bulk SMS, the cost of recruiting mothers, and the infrastructure costs of the help desk, help desk agents, and hosting services. PROMPTS is built on RapidPro, an open-source platform developed by UNICEF, to increase the support networks and sustainability of the platform at national scale. According to Jacaranda Health’s data, the EmONC mentorship program is cheaper per health provider than a five-day classroom training on similar skills.³⁰ The growth of the PROMPTS platform has been spurred by increased demand from counties for partnership. The COVID-19 pandemic also provided opportunities to explore additional uses for PROMPTS, such as tele-triage, which led to a surge in new users.³¹

By 2022, Jacaranda Health plans to be working with

20 KENYAN COUNTIES

that account for 2 out of every 5 births in the country.

As part of its scaling strategy, the EmONC mentorship program made additional investments by launching a Nurse Mentor Training Center (NMTC) in June 2019. The NMTC serves to deepen the practical skills of nurse mentors, which allows them to improve the quality of training they provide to frontline health workers.³² In 2020, to support continued training of participants and mentors, Jacaranda Health launched DELTA (Digital EmONC Learning Trainer & Assistant), a self-guided learning platform.^{33,34} The team hopes to have the courses on DELTA accredited by professional regulatory bodies in order to allow learners to use the content to meet annual continuous medical education requirements. By 2022, Jacaranda Health plans to be working in 20 Kenyan counties that account for two out of every five births in the country.³⁵ In addition, the

team hopes to serve 1.5 million Kenyan women and babies through their package of services.³⁶



SUSTAINABILITY

Jacaranda Health has embedded sustainability in its innovations through several approaches. The EmONC mentorship program has lowered its costs by being run at public health facilities. As Jacaranda Health seeks to eventually transition its interventions to the public sector, partner counties take up an increasing proportion of the costs of the EmONC mentorship. In 2020 the program achieved an average 60% cost share. By optimizing operations for the PROMPTS platform such as by using artificial intelligence to triage questions and having a chatbot respond to routine questions, Jacaranda Health has lowered its unit costs to KES. 80 per enrolled user.

Jacaranda Health lowered its unit costs to

KES. 80

per enrolled user



CHALLENGES



Photo credit: Jacaranda Health

Both PROMPTS and EmONC mentorship have evolved and adapted in response to feedback and challenges; this has been a learning journey for the Jacaranda Health team since the programs’ inception. Given that Jacaranda Health implements its innovations in collaboration with the public sector, gaining trust from health facilities and counties is critical. Apart from relationship management, the team has faced some technical challenges in their growth path. For the PROMPTS platform, one important test was figuring out how to incorporate triaging through the AI tools on the platform and the help desk function.³⁷ The team integrated natural language processing to ensure that the triage function was able to adequately categorize high-priority questions. PROMPTS

also operates on the philosophy that AI augments and does not replace human health experts at the help desk. Regarding the EmONC mentorship program, the team initially analyzed performance data by manually pulling datasets from multiple sources, which was time-consuming.³⁸ With support from a partner, the team solved this challenge by developing a data analytics platform for the EmONC program.



IMPACT

At the end of 2020, Jacaranda Health's bundled innovations had been deployed in 15 counties.³⁹ The EmONC mentorship program had graduated 286 active mentors, who in turn trained 4,103 healthcare workers in public facilities.^{40,41,42} During follow-up by mentors, the trained workers correctly performed 9 out of 10 essential clinical skills for delivery, and 80% of trainees passed a skills test on neonatal resuscitation.⁴³ Internal assessments using national registry data have shown a decrease in postpartum hemorrhage and neonatal deaths in Jacaranda Health's partner mentor facilities compared to equivalent facilities without mentorship.⁴⁴

750K

pregnant women
and new mothers
enrolled

By May 2021, the PROMPTS platform had enrolled 750,000 pregnant women and new mothers.⁴⁵ Help desk agents answer 2,500 questions per day and refer approximately 500 mothers for care every month. A survey of PROMPTS users showed that 9 out of 10 women who were referred to a health facility in the last quarter of 2020 after indicating danger

signs ended up seeking medical attention.⁴⁶ The Jacaranda Health team is also using the PROMPTS platform to assess quality of care at different participating facilities. While the total number of respondents was relatively low, more than 85% of survey respondents in the last quarter of 2020 indicated that they were treated with respect at the facilities they attended.⁴⁷ Jacaranda Health has secured funding to conduct an independent impact evaluation of its programs in partnership with researchers from the Harvard University School of Public Health.⁴⁸



EmONC was deployed in **15** counties

Trainees performed **9 OUT OF 10** essential clinical skills for delivery

PROMPTS platform enrolled **750K** pregnant women & new mothers

Help desk agents answer **2,500** questions per day



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Organization	Massachusetts General Hospital; KMET
Website	www.massgeneral.org; kmet.co.ke
Locations	India, South Sudan, Kenya, Sierra Leone, Ghana, Senegal, Tanzania, Zambia, Peru, Honduras, Uganda, Rwanda, Cote d'Ivoire, Ethiopia and Nepal
Year Founded	2013
Health Focus Areas	Maternal Health
Organization Type	Nonprofit
Innovation	Every Second Matters for Mothers and Babies—Uterine Balloon Tamponade for Postpartum Hemorrhage (ESM-UBT)



INTRODUCTION

The Every Second Matters for Mothers and Babies—Uterine Balloon Tamponade (ESM-UBT) is an **innovative device** that was designed by Massachusetts General Hospital (MGH) in collaboration with Ujenzi Trust to **help control postpartum hemorrhage (PPH)**, especially in resource-constrained settings,¹ in order to help reduce maternal morbidity and mortality.² PPH is defined as a loss of 500 ml or more of blood within 24 hours after vaginal birth³ or more than 1,000 ml following a cesarean birth. PPH can either be primary (occurring within 24 hours after birth) or secondary (occurring between 24 hours and 6 to 12 weeks postpartum).⁴

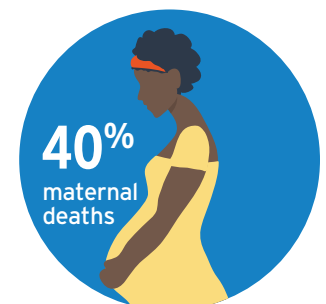
The award-winning ESM-UBT innovation has now been incorporated into a training package for the management of PPH and has been recommended by the World Health Organization (WHO) in its PPH guidelines since 2012. Since inception of the innovation, MGH has supported more than 13 countries in device training, implementation, and research, working closely with many institutions, nongovernmental organizations, national hospitals, and professional associations. In Kenya, MGH has collaborated with the Kisumu Medical and Education Trust (KMET), the Center for Maternal Health Innovation (CMHI), and the Kenya Obstetrical and Gynaecological Society.



PROBLEM

Globally, PPH contributes to more than **30% of all maternal mortalities**, translating to approximately **130,000 deaths in addition to 2.6 million disabilities in women annually**.⁷ Ninety-nine percent of maternal mortalities occur in resource-constrained settings due to infrastructure limitation, lack of skilled birth attendants, and inappropriate active management of the third stage of labor.^{8,9} Furthermore, although nonsurgical control of PPH using Foley catheters as tamponade devices was first reported in 1983 by M. H. Goldrath and resulted in the production of commercial UBT devices, the cost of these devices has been prohibitive to widespread application in low- and middle-income countries (LMICs).¹⁰

In sub-Saharan Africa, 25% of maternal deaths result from hemorrhage, with 15% of the hemorrhages occurring during the postpartum period.¹¹ **Kenya's maternal mortality ratio (MMR) stands at 342 per 100,000 live births,¹² with PPH accounting for 40% of maternal deaths, according to data from 2014.¹³** In Murang'a County, one of 47 counties in Kenya, a total of 20 PPH-related maternal deaths were reported between 2014 and 2019.





SOLUTION

The ESM-UBT offers a highly effective, cost-efficient solution to controlling blood loss during PPH in resource-poor settings. The device consists of a condom tied to a Foley catheter, and generally costs less than 5 USD.¹⁶ When a mother experiences profuse bleeding due to an atonic uterus and the bleeding cannot be halted even



after initiation of first-response interventions, a healthcare practitioner places the condom within the uterine cavity and fills it with clean room temperature water using a syringe and a one-way valve. This stops the bleeding within minutes.¹⁷ The condom works effectively since it is a low-pressure system with the ability to hold a large volume and fits within the space where it is inflated.¹⁸

In addition to the actual device, the ESM-UBT package consists of a three-hour training curriculum incorporating standards from the WHO and the International Federation of Gynecology and Obstetrics (FIGO) for PPH management, a PPH wall poster checklist, a job aid checklist, a trainer’s teaching flipchart, and a learner’s booklet. The package is tailored in such a way that it fits within pre-existing competency-based programs in each country. In addition, it allows for continuous training of health providers for retained competency and confidence.¹⁹



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

To ensure that the device could be easily integrated within a public sector healthcare delivery system, between 2010 and 2011 MGH conducted research in South Sudan by training 850 frontline health workers,²⁰ most of whom were illiterate and had little or no formal training in labor and delivery. The study indicated that training and UBT device provision are simple, affordable, and effective for managing uncontrolled PPH in a resource-limited setting.²¹ Based on this evidence, MGH has supported implementation and research activities in more than 13 countries in Africa, Asia, and Latin America and the Caribbean (LAC) to further integrate the device within public sector health systems. In Kenya, MGH has been collaborating with KMET since 2012²² and later its social enterprise, CMHI, which was launched in 2016 to commercialize the ESM-UBT.²³

Based on this evidence, MGH has supported implementation and research activities in more than 12 countries in Africa, Asia, and LAC

Key stakeholders from low-income countries (such as Kenya, Uganda, Tanzania, Zambia, Rwanda, South Sudan, Sierra Leone, Ghana, and Ethiopia) have reached out to both MGH and KMET for in-country assistance with implementation of the ESM-UBT package to reduce maternal mortality.²⁴ Globally, MGH has been collaborating with county and country governments and many other organizations in implementation and research of the ESM-UBT.²⁵



SCALABILITY

The WHO PPH guidelines recommend use of the ESM-UBT for uncontrolled PPH. In addition to its affordable cost, the ESM-UBT package is highly scalable since it is adapted to fit within existing country-specific, competency-based training programs. As a best practice, nominating regional and facility-based ESM-UBT “champions” has been shown to be critical to triggering uptake of the innovation.

By March 2019, MGH and KMET had rolled out **ESM-UBT to more than 1,300 health facilities in over 20 counties in Kenya**, including Garissa, Mandera, Turkana, Marsabit, Isiolo, Wajir, Nairobi, Kilifi, Mombasa, Nakuru, Baringo, Homa Bay, Migori, Siaya, Kisumu, Kisii, Nyamira, Bungoma, Kakamega, Busia, and Vihiga counties. At the same time, **more than 6,600 health workers across the country had been trained on ESM-UBT use and clinical management of PPH**. Additionally, the Kenyan Ministry of Health’s Reproductive and Maternal Health Services Unit committed to launching UBT in all 47 counties as an innovation proven to be safe and effective in managing uncontrolled PPH when other first-line interventions fail.

As noted, MGH has supported implementation and research activities on the device in more than 13 countries— including India, South Sudan, Kenya, Tanzania, Sierra Leone, Ghana, Senegal, Zambia, Peru, Honduras, Uganda, and Nepal –in order to identify the best ways to integrate and scale up its use within existing service delivery systems.



SUSTAINABILITY

To ensure sustainability and affordability of the kits, KMET set up CMHI as its social enterprise arm and the hub where the ESM-UBT kit is assembled and distributed to facilities in Kenya and within the region. By the end of 2018, CMHI had produced over 9,000 ESM-UBT kits, of which 1,000 had been distributed to four counties supported by the County Innovation Challenge Fund (CICF), 3,000 sold across the country, and more than 5,000 distributed across Africa. The ESM-UBT has also been included in the national list of essential health commodities, with additional efforts underway to include it in the county lists of essential commodities to enable easier procurement. The establishment of an assembly, distribution, and product storage site in Western Kenya serves as another avenue that has been used to scale up and ensure sustainable production of this device.



CHALLENGES

The ESM-UBT has been proven to be an effective method for controlling PPH, and a wide range of clinical success has been reported in Kenya, Uganda, Tanzania, Zambia, Rwanda, South Sudan, Sierra Leone, Ghana, and Ethiopia, with success rates ranging from 60% to 99%. In unsuccessful cases, more invasive approaches became necessary, including hysterectomy as a last resort. To prevent such outcomes, factors that promote successful implementation of ESM-UBT need further research.

Several patient factors already shown to contribute toward failure of the ESM-UBT are obesity, a short labor period, and prolonged bleeding, which might lead to disseminated intravascular coagulation (DIC) and possible death. Other identified implementation challenges include the ability to address the demand for health provider training and then retain the trained providers within facilities that have high attrition. To address this issue, KMET and its partners established a **training of trainers (ToTs) program** with participants drawn from existing basic emergency obstetric and newborn care (BEmONC) trainers, who then train new providers across different counties and facilities and also provide refresher medical education to providers already trained in ESM-UBT use so that they can mentor other staff on how to use the innovation.

SUCCESS RATE RANGE

60-99%



IMPACT

In the past decade, the ESM-UBT package has been introduced by the MGH Division of Global Health and Human Rights and its partners to India, South Sudan, Kenya, Sierra Leone, Ghana, Senegal, Tanzania, Zambia, Peru, Honduras, Uganda, Rwanda, Côte d'Ivoire, Ethiopia and Nepal. Results have been promising. In a study of 306 women with uncontrolled PPH in Kenya, Senegal, Sierra Leone, and Tanzania who had ESM-UBT devices placed, an overall 97% survived. For women who reported class I or class II shock, 99.4% (n = 166) survived. For those who went into advanced (class III) shock, 97.3% (n = 108) survived, while 86.2% (n = 25) of those with severe or end-stage (class IV) shock survived. (Categorization of shock was based on blood pressure and mental status at the time of ESM-UBT placement.) Two- and six-week follow-ups confirmed device safety. The ESM-UBT device has been shown to prevent hysterectomies, and with an incremental cost per disability-adjusted life year (DALY) averted being 26 USD, it has reached the level of a “highly cost-effective intervention.”¹⁴



SURVIVAL RATE

97% with uncontrolled PPH

N = 306

99% class I or class II shock

N = 166

97% class III shock

N = 108

86% class IV shock

N = 25

By 2019, initial data collected in 23 of the 47 Kenyan counties showed that **over 620 ESM-UBT kits had been used, with a 98% success rate**. The reported usage would probably be much higher if reporting rates were 100%. Additionally, more than 8,315 health workers across the country have received training on the use of ESM-UBT and clinical management of PPH as recommended by the WHO.

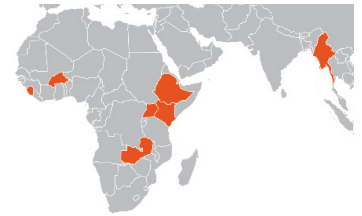
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Organization	Living Goods
Website	www.livinggoods.org
Locations	Kenya, Uganda, Burkina Faso, Ethiopia
Year Founded	2007
Health Focus Areas	Family Planning, Immunization, Nutrition, Maternal and Child Health, Childhood Diseases
Organization Type	Nonprofit
Innovation	Community Health Workers' Empowerment



INTRODUCTION

Headquartered in Kenya, Living Goods is a nonprofit organization working in Africa since 2007 with the mission to save and improve lives at scale by ensuring community health workers (CHWs) have access to the technology, high-impact training, essential medicines, and compensation they need to effectively deliver healthcare services on call to households at the community level. To achieve its goals, **Living Goods uses an integrated approach that allows CHWs to provide primary care across multiple health areas and refer patients to health facilities for specialized care.** Well-supported CHWs are essential to achieving universal health coverage (UHC), helping to maximize limited resources, and ensuring continuity of care, regardless of where a person lives.



For the past 14 years, Living Goods has worked to advance effective community health in seven countries: Kenya, Uganda, Burkina Faso, Ethiopia, Sierra Leone, Myanmar, and Zambia. However, most of the nonprofit's operations are located in Kenya and Uganda, whereby in Q2 2021 the organization was supporting 12,200 CHWs serving 9.1 million people. Implementation of various communities of practice, technical working groups, cross-departmental collaborations, and fireside chat podcasts enables teams across the various country offices to share knowledge, foster collaborations, and improve performance.



PROBLEM

At least half of the world's population lacks access to essential health services. This gap is wider in sub-Saharan Africa and South Asia.¹ Additionally, many public healthcare systems in low- and middle-income countries are underfunded, understocked, and understaffed.² In Kenya, financing for the public health system is inadequate: the national government's health allocation falls below sufficient levels,³ while the human resource shortage means that its population of 47.5 million has only one nurse for every 1,600 people, one doctor for every 7,200 people, and one clinical officer for every 21,000 people,⁴ and experiences varying levels of CHW coverage across counties.^{5,6}

These challenges portend problems in access to basic health services, particularly in remote areas with limited health facilities, which further complicates Kenya's national vision of achieving UHC. While community health is considered essential in the achievement of UHC as it brings health services closer to households,⁷ government CHWs largely rely on paper-based tools and experience irregular supervision, erratic or no pay, shortages of supplies, lack of mentorship, and lack of recognition, all of which hinder the effective implementation of community health.⁸



HUMAN RESOURCES SHORTAGE

47.5M population size

1 nurse per **1,600**

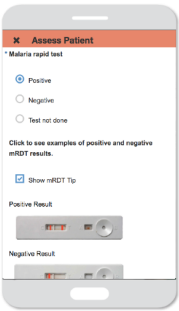
1 doctor per **7,200**

1 clinical officer per **21,000**



SOLUTION

The Kenyan Ministry of Health (MOH) has underscored the need for accelerated staff recruitment, better links between local and higher-level health facilities, timely funding, adequate supplies of medical commodities, and improved coordination and management to achieve UHC.⁹ Based on these needs and the gap previously described, Living Goods developed a solution that strengthens and professionalizes government community health systems¹⁰ by recruiting and training government CHWs to deliver lifesaving medicines, health education, diagnoses, and health products.^{11,12} **The solution is an integrated care platform that enables communities to access promotive, preventive, and curative health services from a well-trained and supplied CHW.** This model proves ripe for government investment because of its Return on Investment (ROI) in terms of lives saved and improved economic productivity.¹³



Supported CHWs conduct at least one monthly door-to-door visit with each family in their catchment area. Living Goods equips the CHWs with smartphones installed with an mHealth application that helps ensure a high quality of care as they educate, diagnose, treat, refer, and follow up with community clients. Additionally, Living Goods conducts monthly refresher training sessions to continuously upskill CHWs and implements comprehensive supervision and performance management systems for CHWs.¹⁴ Historically, Living Goods managed all aspects of digitally empowering CHWs, stocking them with essential medicines as well as supervision and compensation, but the nonprofit has increasingly pursued opportunities to partner with governments to take on responsibility for specific aspects of this work, including compensation and stocking of supplies.



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

Living Goods **partners with national and subnational (district or county) ministries of health** to implement its approach and to develop the capacity to better enable community health systems to deliver more equitable care. For instance, Living Goods has played a key role in helping the Kenyan MOH develop and start implementation of an electronic community health information system (eCHIS) that will **enable all 95,000 CHWs to become digitally empowered**, leading to a seamless flow of reliable and timely data from the community to the national level. The data from this system will provide critical information to support the development of national health policies that will address more equitable access to quality care and enable the Living Goods approach to be implemented across the nation.

The data collected through the Living Goods Smart Health app is used by public sector officials to drive policy and to better understand how to finance and operationalize community health programs. This has allowed Living Goods to influence and support the development of Kenya's community health strategy and eCHIS strategy. Also in Kenya, Living Goods has been able to advocate for the approval of amoxicillin disbursement by CHWs for patients with pneumonia who do not have signs of respiratory distress or severe disease. Governments can also use the data for sentinel surveillance to rapidly identify disease outbreaks.

Currently, Living Goods is directly uploading data into the District Health Information Software (DHIS2) for Isiolo County and will soon upload Kisumu data directly into DHIS2. In other parts of Kenya, Living Goods uploads data into DHIS2 through imported data tables provided by county governments.





SCALABILITY

Living Goods supports existing government CHWs who want to contribute to and make a difference in their communities. Motivating and supporting CHWs to achieve specific health targets in their communities as well as equipping and training them—inclusive of monthly refreshers—has made the Living Goods model replicable with a low attrition rate of 10%.¹⁵ By end of Q2 2021, Living Goods was implementing its solution in 7 of the 47 counties in Kenya and 20 of the 135 districts in Uganda. Its partner, BRAC Uganda, is implementing a version of the Living Goods solution in an additional 75 districts in Uganda. CHWs in these implementation sites cater to an average of 100 families per CHW. Living Goods recently formalized partnerships with the governments of Burkina Faso and Ethiopia to strengthen the digitization and performance management of their CHW workforces.

In Kenya, Living Goods is shifting its focus to support scaling of national impact and truly putting government in charge to sustainably lead and finance community health. In the long term, the organization will focus on a few counties that have co-financing in place to spur sustainable, government-led ownership. This model will ultimately enable the government to lead the financing, digitization, commodity supply, supervision, and compensation of its CHW networks independently.



SUSTAINABILITY

To ensure community health programs remain sustainable and impactful, Living Goods **works with the national and local ministries of health** to create innovative models for successful public-private partnerships to improve access to community-based healthcare services. Such a partnership has seen the Kenyan MOH expand the range of health diagnoses and treatments (such as for pneumonia and amoxicillin) administered by CHWs. Living Goods has also engendered the development of more accurate and comprehensive health budgets, supported health governance and policy frameworks, established operational systems, and developed digital capacity in health personnel to improve supervision and compensation plans for CHWs—all part of the essential capacity-building and system-building process to ensure sustainability of the Living Goods platform.

Through advocacy, Living Goods has influenced incorporation of DESC principles—Digitally enabled, Equipped, Supervised, and Compensated—into Kenya’s community health strategy and eCHIS strategy. Following the adoption of the DESC components into policy in Kenya, Living Goods will scale down its Kenyan operations to one learning site and increase its support to Kenya’s MOH as it implements the DESC policy. Living Goods is increasingly working to develop capacity in the Kenyan government to lead digitized community health and has pioneered co-financed programs in which the government manages the commodity supply chain and compensation. In turn, Living Goods focuses more on digitally enabling CHWs and improving supervision and performance of CHW care delivery networks.



CHALLENGES

In supporting governments to develop protocols for CHWs, the Living Goods team has found that they work faster than these protocols can be established. In Kenya’s devolved health system, this has necessitated that the nonprofit align with each county’s protocols, which has delayed program rollouts. To overcome this challenge, the organization crafts multiple new workflows for the CHW Smart Health app to align with the government’s decision-making process.¹⁶



IMPACT

A 2014 randomized controlled trial by J-PAL, Yale, MIT, and Innovation for Poverty Action in Uganda on the community-level outcomes of Living Goods showed a 27% reduction in child mortality for children under 5 in communities in which Living Goods operated. In 2020, Living Goods-supported government CHWs saved an estimated 17,000–19,000 lives, nearly doubling 2019 results.¹⁷

Living Goods is supported by a variety of donors and through partnerships with Johnson & Johnson, Lilly, Novartis, Pfizer, GSK, and the Bill & Melinda Gates Foundation to increase access to community-based primary healthcare for nearly 1.7 million people in up to six African countries as part of a shared commitment to accelerate universal health coverage.²⁰

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Organization	North Star Alliance
Website	www.northstar-alliance.org
Locations	20 Countries within Sub-Saharan Africa
Year Founded	2006
Health Focus Areas	Primary Healthcare, STI testing and treatment, HIV
Organization Type	Nonprofit
Innovation	Blue Box Clinics



Photo credit: North Star Alliance



INTRODUCTION

North Star Alliance (North Star) is a nonprofit organization that commenced its operations in September 2006, originating from a public-private partnership (PPP) between the World Food Programme (WFP) and TNT, a global logistics company, after both entities started recording HIV infection rates as high as 50% amongst truck drivers.¹ This situation greatly affected the drivers' ability to perform transportation work, which adversely affected transport companies' business performance. These dire statistics brought to light the urgent need for preventing further HIV/AIDS and related infections and deaths among truck drivers in sub-Saharan Africa. In response, North Star came in to fill a hitherto unrecognized need for health services designed for truckers and the communities around them by offering a package of HIV prevention and treatment services; testing and treatment for sexually transmitted infections (STIs), malaria, and tuberculosis (TB); and general check-ups and primary care. North Star provides these services at convenient locations and couples them with health education on relevant topics, including positive gender relations. North Star Alliance's services have been implemented largely in East, West, and Southern Africa. All sites practice the organization's core values: treat all clients with respect and dignity; embrace transparency and accountability to achieve integrity; offer quality service; and exhibit an entrepreneurial spirit through fostering new ideas and commitment to innovation.²



PROBLEM

Truck drivers and other mobile populations are not only particularly vulnerable to HIV and other diseases such as TB and malaria, but they also play a role in the spread of these diseases as they move along transport corridors. In addition, these groups have difficulty accessing health services at the usual sites and during the usual hours they are offered, as such visits often significantly compromise available working time. This motivated North Star to bring healthcare closer to trucking work routes to improve geographic access to healthcare and decrease the time away from work required to seek healthcare services. In addition to serving truck drivers, North Star offers its services to sex workers and residents living in communities along transport corridors.³





SOLUTION

CORE SOLUTION

North Star's core solution is to offer a high-quality health service package tailored to the needs of these designated populations, with support from the local ministries of health (MOH) and various strategic partners, such as the Centers for Disease Control and Prevention (CDC). North Star's clinics offer a range of services, including a comprehensive package of primary healthcare services; HIV services ranging from HIV counselling and testing to antiretroviral therapy (ART); and testing and treatment for STIs, TB, and malaria. All of these services are offered in their signature clinics, which are housed in converted shipping containers painted blue (thus referred to as "Blue Box Clinics") and located along transport corridors.

ELECTRONIC HEALTH PASSPORT SYSTEM

North Star's second innovation is an electronic health passport system, developed in 2009 in collaboration with a development partner. This system can be used to provide longitudinal healthcare records for hard-to-reach mobile populations such as those in the transport industry. The platform facilitates the exchange of patient-specific data between each Blue Box Clinic, thus ensuring cross-border continuity of care. Since North Star has grown its number of patients, clinics, and countries of operation over the years, a new electronic medical records (EMR) system with fit-for-purpose functionality for the current health landscape and technological advances is currently being piloted to replace the original award-winning software, which is still in operation in most of North Star's clinics today.

BALOZI PROJECT

Over the years, many new interventions have become part of the daily operations of the Blue Box Clinics. In 2013, an innovation known as the Balozi Project was piloted to build and train a network of community health workers (CHWs) consisting of truck workers, sex workers, and community members selected by the local community. As part of this project, the MOH trains CHWs and peer educators in addition to supplying commodities such as test kits, ART drugs, and lab tests.

STAR DRIVER PROGRAMME

Following the Balozi Project, another intervention known as the "Star Driver Programme" was launched in 2014 in the East Africa region of North Star's network. This loyalty program encourages truck drivers to return to Blue Box Clinics to not only receive both public health screenings, but also access nonmedical services such as professional development activities and job training to improve self-efficacy and build a sense of community among patients.⁴

CRISIS RESPONSE TEAMS (CRTS)

More recently, in 2016, North Star developed Crisis Response Teams (CRTs) to combat sexual and gender-based violence against sex workers and other vulnerable populations. The CRTs were piloted in eight Blue Box Clinics; these teams included sex workers, MOH staff, peer educators, and CHWs. The CRT model has since been embedded within North Star's existing peer educator model, which now mobilizes sex workers to become ambassadors for their peers. Peer educators mutually identify with each other as individuals and as members of a specific socio-cultural subgroup, and through the program they become strong role models for promoting the adoption of HIV-preventive behavior. The presence of sex workers in the CRTs encourages ongoing efforts to build and maintain trust, and the immediate and stigma-free assistance provided by the teams helps to overcome barriers preventing sex workers from reporting incidents or seeking help. North Star, therefore, actively recruits and trains sex workers as peer educators to expand its reach and impact among sex workers.

Peer educators play a key role in CRT setup and operations. Acting as information brokers and mentors, peer educators share knowledge about matters such as HIV and STI testing and treatment, negotiating safe sex, personal safety while working, and the importance of regular primary healthcare. Peer educators are trained to provide basic health checks and have facilitated North Star's efforts to improve patients' knowledge, attitudes, and practices related to sexual and reproductive health, including promoting greater understanding of HIV prevention and increased adherence to ART protocols. In addition, the peer educators provide psychological and social support that reduces stigma and empowers sex workers to advocate for their rights and wellbeing.



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

North Star’s model entails collaborating with governments, the business community, civil society, and other development partners to build a network of primary healthcare facilities in identified disease hot spot areas along major transport routes. The primary healthcare facilities work hand-in-hand with CHWs, who undertake outreach activities in the nearby communities to increase uptake of care provided at the clinics, make referrals, and provide health education. In Kenya, North Star’s collaborations with the MOH and non-governmental organizations (NGOs) also facilitate effective referrals to more specialized health facilities in the case of complications that cannot be handled at a primary healthcare level. Furthermore, MOH collaboration has enabled training of CHWs and peer educators by certified MOH officials and placement of the trained CHWs and peer educators in every Blue Box Clinic.



Additionally, the Kenyan MOH supplies most test kits, ART drugs, and lab tests to the clinics. The strategic locations of North Star’s clinics along transport corridors, coupled with the electronic health passport system, enable clients to access personal, longitudinal healthcare services at any Blue Box Clinic. North Star’s data analytics provides insights into the health-seeking behavior of hard-to-reach populations and guides North Star and its partners to areas where increased national, regional, and/or local health capacity may be required to equitably address the needs of these high-risk populations. As a MOH requirement, North Star shares its data with sub-county health records officers, who in turn upload the data to the District Health Information System (DHIS).



SCALABILITY

North Star’s use of containerized structures is highly scalable. The convertible shipping containers are semi-mobile, with a standard layout that can be produced and deployed quickly while still maintaining WHO standards for primary healthcare facilities. North Star Alliance signs memoranda of understanding (MOU) with its partners and conducts regular stakeholder engagement and feedback sessions to maintain and strengthen program offerings. Since its inception, North Star has used a health systems strengthening (HSS) approach to scale up from one clinic in Malawi to a network of primary healthcare clinics across East, West, and Southern Africa – 91 clinics in 20 countries as of October 1, 2020. At the time of publication, 48 of these clinics have been successfully transferred into local governments’ or other local organizations’ health systems.

53% of clinics successfully transferred to into local health systems



SUSTAINABILITY

One of the key approaches used by North Star to create sustainability is the diversification of its services. For example, at its wellness center located in Salgaa, along the Nakuru-Eldoret highway, North Star set up a low-cost, in-house laboratory to pilot the feasibility of providing convenient and timely acute care services to its clients while also saving the costs associated with outsourcing lab services to public and private labs. Similarly, North Star has piloted eye care by selling glasses in its clinic in Mlolongo to generate revenue that could contribute to the operational costs of that clinic.

More recently, in South Africa, North Star piloted a revenue-generation project (RGP) at one of its clinics in Cato Ridge to diversify its funding sources as well as attract potential investors in an effort to decrease dependence on external donor funding and become more financially sustainable. The RGP has shown great potential amid numerous challenges, including the COVID-19 pandemic and its associated lockdown restrictions. The pandemic led to countless unintended consequences, such as clients’ fear of infection and subsequent reluctance to access care or clients’ newfound financial instability and uncertainty surrounding their sources of income. Despite these external factors, the clinic successfully made the transition from free to paid services. As with any pilot, the project offered a wealth of learning, and with time and funding, the pilot has been adapted to maximize its

revenue-generating potential. The RGP is still in a pilot phase, with a final evaluation of the pilot at Cato Ridge planned in 2022. An expansion of the pilot to a clinic in the East Africa region is planned between 2022 and 2023, pending the findings of the current pilot.

North Star also employs a “lean” staffing model and strives to deliver products and services through streamlined processes that distribute tasks among team members to effectively leverage each staff member’s abilities. For example, a typical Blue Box Clinic is staffed by one clinician or nurse, an HIV lay counsellor, a security guard, and a receptionist.



CHALLENGES

North Star relies on donor funding to implement its programs and attain its goal of providing high-quality healthcare to mobile workers and their communities. Diminishing funding, however, threatens the organization’s ability to achieve its mission. The organization has begun taking steps to increase its financial sustainability and reduce dependency on donor funding, though many of these programs are still in the pilot phase. Additionally, due to the mobile nature of its clients, North Star must continuously recruit and train peer educators and CHWs to maintain adequate human resources for its programs. Finally, the COVID-19 pandemic has negatively affected care delivery as patients have become more reluctant to seek healthcare services at the clinics.



IMPACT

In 2019, North Star provided 243,694 services, including primary healthcare services as well as STI, HIV, malaria, and TB services to 108,745 clients who visited their Blue Box Clinics across its African network. **North Star has supported 91 clinics in 20 countries** as of October 1, 2020, of which 28 are owned and operated by North Star, while 48 have been successfully handed over to the MOH or other local organizations*. In addition, about 71,503 clients participated in behavioral change communication engagements, and 39,045 clients received services via additional outreach sessions. Of the total patient population reached, 26% were truck drivers, 34% were sex workers, and 40% were local community members.⁵

in 2019,
243,694 services
provided to
108,745 clients
at **91** blue box clinics
in **20** countries

*15 clinics were handed over to private organizations



1. https://www.northstar-alliance.org/wp-content/uploads/2018/03/North_Star_Strategy_2017-2020.pdf
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3. https://www.northstar-alliance.org/wp-content/uploads/2018/03/North_Star_Strategy_2017-2020.pdf
4. <https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0481>
5. <https://www.northstar-alliance.org/key-figures/>

Photo credit: North Star Alliance

Organization	Pro Mujer
Website	https://www.promujer.org
Locations	Latin America
Year Founded	1990
Health Focus Areas	Primary healthcare, women's health
Organization Type	Hybrid (for-profit and nonprofit)
Innovation	Integrated Healthcare and Wellness Model



INTRODUCTION

Since 1990, Pro Mujer has been focusing on advancing gender equality in Latin America by creating **sustainable economic, health, and social opportunities for underprivileged women and their families**. These services are offered in supportive, social spaces as well as digitally with the goal of enhancing community-building and equipping community members with the knowledge and tools that will help them realize their maximum potential. The social enterprise has found success, becoming one of Latin America's leading organizations committed to women's empowerment.¹ With headquarters in New York City, Pro Mujer has implemented its programs in Argentina, Bolivia, Mexico, and Nicaragua. The organization invests in women's health and well-being by providing access to low-cost, high-quality services in the neighborhoods where women live and work. Its services encompass preventive care; regular cancer screening; family planning services; and, through alliances, laboratory tests, ultrasounds, and dental care. More than ten million health interventions have been provided to date.²



PROBLEM

Since 2015, Latin America has experienced **increased levels of extreme poverty**. Following a decline between 2017 and 2018, incidences of poverty and extreme poverty started to record higher levels than those experienced from 2012 to 2015. In 2018, 30.1% of the total Latin American population lived below the poverty line. During that year, Mexico and Bolivia – two target countries for Pro Mujer – recorded their highest poverty and extreme poverty rates to date, with **poverty rates of 30% - 35% for Bolivia and more than 35% for Mexico and extreme poverty rates of 10% - 15% for each of the two countries**. Poverty and extreme poverty incidences in the region have been seen to disproportionately affect women, children, adolescents, those living in rural areas, indigenous persons, and Afro-descendants.³

In matters of women's health, Latin American countries have made mixed improvements. Between 1990 and 2015, maternal **mortality ratio decreased from 136 to 68 per 100,000 live births**. However, this progress was uneven, with countries such as Bolivia and Haiti still recording very high maternal mortality ratios of 155 and 480 per 100,000 live births, respectively. Inequalities also exist within countries, with indigenous and rural women facing maternal mortality ratios two or three times higher than national averages, a disparity that can be largely attributed to low access to medical care resulting from geographic and financial barriers, which are further compounded by women's lack of agency. For example, in Bolivia, fewer than 60% of indigenous, rural women give birth with the assistance of skilled birth attendants.



SOLUTION

Pro Mujer’s solution is based on an **integrated healthcare and wellness model** and uses a digitally enabled delivery platform to facilitate education and increased access to high-quality and low-cost promotive, preventive, and curative services. The organization responds to country-specific challenges by providing targeted – adapted for specific country contexts and demonstrated needs – but integrated financial, health, and educational services to underserved, low-income women living in poor and marginalized regions, as well as extending these services to their families. Pro Mujer’s digital platform brings together education and information about its in-person services to streamline patient experiences and complement the physical spaces and community engagement activities that Pro Mujer maintains as the other essential components of its integrated model.

Financial services offered by Pro Mujer include training on financial best practices and responsible borrowing. **Health services** range from education on healthy habits to clinical services such as family planning, oral hygiene, cervical cancer screening in high-burden countries such as Nicaragua, and sexual and reproductive health counseling. Additional educational services include digital literacy as well as entrepreneurial and workforce development skills. By leveraging its research and data, Pro Mujer is able to identify subpopulations and geographic neighborhoods with the greatest needs in health, education, gender equality, physical security, and financial inclusion; these areas are where the organization then focuses its efforts.⁷



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

Pro Mujer began by primarily providing microfinance solutions but has been able to integrate health services into its offerings. This has allowed its clients to access reproductive health education, awareness, and disease prevention services. Pro Mujer reaches its clientele by **setting up local centers that act as “one-stop shops” where women and their families can easily access healthcare and financial services**. Pro Mujer also collaborates with the ministries of health in its countries of operation. The modus operandi differs from country to country and depends on factors such as public sector interest, political environment, and available resources. In some countries, the government supports the organization’s rural health campaigns, providing additional free health services to the patients. In other regions, ministries of health supply Pro Mujer’s clinics with contraceptives and other health products, and in other areas there are agreements to facilitate access for Pro Mujer’s clients to higher-level diagnostics or treatment for cervical and breast cancers.⁸



SCALABILITY

Pro Mujer works closely with **government agencies and social enterprises on local and global levels**. With the help of these groups and corporate and foundation partners, the organization has been able to expand its outreach, build new clinics, and launch new offerings as well as improve the reach and quality of existing services to offer transformative services to more women. As of 2020, Pro Mujer operates 18 clinics across four countries. In addition, Pro Mujer’s regions of implementation present a great opportunity for expansion of its digital literacy initiatives and educational services, as the organization has observed high need for digital skills capacity building in the areas it serves in Latin America, particularly following the increase in prevalence of digital health tools during the COVID-19 pandemic.⁹

As of 2020,
ProMujer operates
18 CLINICS
across four countries.



SUSTAINABILITY

Pro Mujer's **integrated model for service delivery at local centers close to clients** enables these clients to access financial and health services conveniently, thereby averting the lost time and wages that result from long travel times to other facilities. This model also makes use of a cross-subsidy approach whereby funds from high-demand services (such as loan services) are used to cover the costs of high-impact services (such as screening), which are traditionally "not profitable." In this regard, the cost of basic screening and educational services is incorporated into the operational costs of financial services, which in turn are covered through loan interest or other monthly fees, fee-for-service, and prepaid health packages that can be used over the period of one year at a cost between 35 and 55 USD (about 3,850 - 6,050 KES), depending on the country. Additional financial support also comes from various donors, including family foundations and corporations.¹⁰ Since developing its integrated model of services in 2009, Pro Mujer has successfully scaled the model across all four of its countries of operation, incorporating standardized trainings for health workers at all centers and global health protocols and best practices from the WHO to guide standard service provision.



CHALLENGES

While the Sustainable Health Agenda for the Americas (2018-2030) recommends that public health expenditure be at least 6% of GDP, central government spending for the Latin American countries averaged 2.4% of GDP in 2019. This represents a substantial funding gap of about 3.6% of GDP for health services. **Both public and donor funding are key to scaling up Pro Mujer's services.** Insofar as its model provides a level of sustainability, the organization requires additional funding to reach more people as well as to sustain the already existing programs in all four countries.

The health landscape in Latin America also proves challenging: the incidences of poverty and extreme poverty are still high in Latin American countries, coupled with high prevalence of chronic diseases that account for 68% of mortality. Furthermore, epidemiologists predict a 200% increase in the number of deaths from heart disease, diabetes, and stroke in the next 20 years.¹² Social, economic, and political contexts such as sociopolitical unrest, high inflation rates, and strict regulation of foreign funding in some Latin American countries can pose further challenges to Pro Mujer's operations and growth.



IMPACT

In 2019, Pro Mujer offered 446,000 health services, retained a gross loan portfolio of 140 million USD, and served more than 250,000 beneficiaries. The organization is currently serving 17,000 women in Argentina, 43,000 women in Nicaragua, and 120,000 beneficiaries in Bolivia annually.¹³



in 2019

446K health services

250K beneficiaries

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Organization	Clínicas del Azúcar
Website	https://www.clinicasdelazucar.com/
Locations	Mexico
Year Founded	2010
Health Focus Areas	Diabetes, Hypertension
Organization Type	For profit
Innovation	Affordable Diabetes Clinic Network



INTRODUCTION

Clínicas del Azúcar is a for-profit social enterprise founded in 2010 that operates a chain of **affordable diabetes management clinics in Mexico**. These clinics provide **preventive, diagnostic, and supportive patient-centered treatment services to underserved populations**, integrating screening devices and health technology innovations to streamline care delivery and reduce cost of care while still maintaining quality. Patients work with a **multidisciplinary team of doctors, nurses, nutritionists, and psychologists** to develop a comprehensive treatment plan that includes lifestyle changes in addition to a medication plan. Clínicas del Azúcar offers these services through memberships, packages that bundle different levels of service for an annual fee, with several programs to ensure accessibility for low-income populations. Each clinic is located in a convenient, high-traffic area—often near larger retailers—to afford it greater visibility and the opportunity to reach large numbers of patients. By prioritizing convenience and affordability, Clínicas del Azúcar serves as an accessible alternative to expensive private facilities and overburdened public facilities for patients seeking diabetes care.



PROBLEM

In Mexico, diabetes presents a significant public health challenge, affecting 10.4% of the population in 2016.¹ Type 2 diabetes—a chronic condition in which the body cannot process sugar properly, resulting in high blood sugar levels that can lead to further health problems, such as heart disease²—is the leading cause of death and disability combined in Mexico.³ The Mexican Ministry of Health declared the diabetes epidemic a national health emergency in 2016 and has implemented prevention measures such as public awareness campaigns and a soda tax.⁴ However, forecasts predict that diabetes prevalence in the country will continue to rise,⁵ driven in part by increasing rates of obesity, which is highly linked to type 2 diabetes.⁶ **Additionally, millions of people may have undiagnosed diabetes or be prediabetic.**⁷

10.4%
of the population
is affected by
diabetes

With this rise in prevalence, Mexico's public healthcare system is increasingly burdened by patients seeking treatment, which **requires ongoing management, continuous follow-up, and risk mitigation through sustained lifestyle changes.**⁸ Furthermore, patients often face several barriers to seeking treatment in the first place. Increased patient volume at public health facilities leads to greater wait and travel times, exacerbating challenges to accessing care faced by low-income and rural populations.⁹ Diabetes prevention, diagnosis, and treatment services in private healthcare facilities are often expensive and thus inaccessible for low- and middle-income populations;¹⁰ as a result, many patients go undiagnosed and untreated.¹¹



SOLUTION

Clínicas del Azúcar offers affordable, high-quality, and convenient diabetes management through its network of branded clinics, which provide a more accessible alternative to public facilities and a more affordable alternative to other private providers.¹² These clinics are located in convenient and frequently visited places in communities, often in retail areas anchored to larger retailers, such as supermarkets. They offer **diagnostic and treatment services built around evidence-based algorithms using a high-volume, low-cost model based on maximizing the number of patients served**; in this way, services can be offered at a lower cost to the consumer while still generating enough profit for the organization to meet its targets. Through its “one-stop shop” model, Clínicas del Azúcar brings different specialized providers—such as doctors, nurses, nutritionists, and psychologists—together in one facility so that patients can access multiple specialties in one visit and receive comprehensive treatment and lifestyle change plans that are collaboratively developed by the provider team. Teams implement task shifting to improve efficiency and reduce the time required for each visit: patients are able to complete comprehensive treatment services in 90 minutes.¹³ This model allows Clínicas del Azúcar to operate as a sustainable, for-profit social enterprise.



The founders of Clínicas del Azúcar chose a retail-inspired strategy to increase its growth potential and to minimize dependence on donor funding. They used market research of target consumers to set price points and developed a pricing model based on bundling services for a flat annual fee. Clínicas del Azúcar offers several packages, called memberships, that cover varying levels of service. The annual cost of these memberships ranges from about 150 to 300 USD (about 16,000 to 32,000 KES). Patients can purchase memberships up front or pay in monthly installments, and Clínicas del Azúcar offers discount programs to ensure that its services are accessible to patients with low incomes or those facing financial difficulties. These efforts have enabled Clínicas del Azúcar to reduce the cost of its healthcare services to a level more than 60% lower than out-of-pocket costs at other private providers.¹⁴



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

Although Clínicas del Azúcar’s model is not integrated into local health systems, the organization often works with local health facilities to fully meet patient needs. For example, a patient who visits a public clinic and shows signs of diabetes may then visit Clínicas del Azúcar to be evaluated by a specialist with greater expertise on diabetes, either after being referred by a public provider or based on the patient’s own desire for further care. After performing the necessary tests or imaging and providing a diagnosis, Clínicas del Azúcar shares documentation—including imaging, diagnosis, and prescription information—with the patient so that they are able to return to the public health system and obtain treatment and medication through Mexico’s public health coverage, the Mexican Institute of Social Security (IMSS). Additionally, since the membership packages offered by Clínicas del Azúcar do not include the cost of medications, some of its members regularly obtain medications through IMSS while continuing to visit Clínicas del Azúcar for follow-up care and access to the behavioral and lifestyle aspects of their treatment plans. As Clínicas del Azúcar continues to scale, its team hopes to eventually partner with local and national governments to collaborate on common goals of expanding healthcare access and reducing the burden of diabetes in Mexico.





SCALABILITY

Clínicas del Azúcar's chain-based model is scalable through **further expansion of the network by opening new clinics**. Furthermore, the **chain-based, retail-inspired model could be expanded to encompass comprehensive primary care services**: Clínicas del Azúcar has added hypertension treatment to its service offerings while maintaining its model and cost structures, highlighting the adaptability of the model to treat various health conditions. Standardization of operational and clinical procedures across the network of clinics streamlines the process of opening new clinics and thus facilitates greater ease of scaling to serve new geographies and populations. For example, evidence-based protocols for care are consistent throughout the network of clinics, and the clinics use electronic medical records to ensure continuity of care across different clinic locations. Additionally, Clínicas del Azúcar has developed integrated care, staffing, pricing, and patient engagement models that are standardized across all clinics.

Clínicas del Azúcar has expanded to 25 clinics across eleven states in Mexico, successfully replicating its model of leveraging high-traffic locations, offering services through membership packages, and providing integrated behavioral and medication-based services and treatment through multidisciplinary teams according to standardized processes. Clínicas del Azúcar continues to open new clinics and has formed a team to identify additional sites for expansion.



SUSTAINABILITY

Clínicas del Azúcar's for-profit model is designed for **financial sustainability: membership packages provide a steady stream of revenue, and high-volume, low-cost service provision enables revenue generation while keeping costs affordable for patients**. As Clínicas del Azúcar scales, its team continues to standardize workflows and processes, adopt new technologies to improve patient care and outcomes, recruit quality talent, and build brand recognition and reputation. Developing the business in this way streamlines the continued process of opening new clinics, as the organization is increasingly prepared to open, staff, and operate new clinics according to tested and improved methods and to generate patient demand through its recognizable brand and good reputation. Clínicas del Azúcar's internal systems of standardization that facilitate rapid scaling to new locations contribute to its capacity for sustainability as it continues to expand across Mexico.



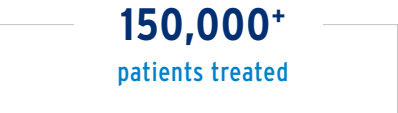
CHALLENGES

Developing pricing plans that create steady revenue for Clínicas del Azúcar without excluding low-income patients continues to present challenges for the team. To balance these two priorities, the team developed **flexible alternative payment options**, such as monthly payments, for patients who are unable to afford the regular membership plan structure. Clínicas del Azúcar has committed to providing care even if patients have overdue accounts, so that patients with lower incomes or who are facing other financial hardships are still able to access necessary care, regardless of their current financial situations.¹⁵



IMPACT

As of February 2021, Clínicas del Azúcar is the **largest private provider of specialized diabetes care**. Clínicas del Azúcar has treated more than 150,000 patients. More than 65% of patients have met their blood sugar level goals, in contrast with 19% of patients receiving care through the public system.^{16,17}



1. World Health Organization, "Mexico" (diabetes country profile), 2016, https://www.who.int/diabetes/country-profiles/mex_en.pdf. {{COMMENT: Please note that, per Chicago style, the numbers at the start of each footnote should be formatted to be in line rather than superscript (in this example, 1. World Health Organization...)}}
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Organization	Noora Health
Website	https://www.noorahhealth.org/
Locations	India
Year Founded	2012
Health Focus Areas	Post-hospital care, patient and caregiver education
Organization Type	Nonprofit
Innovation	Family Caregiver Education Program



INTRODUCTION

Noora Health is a nonprofit operating in collaboration with government and health system partners across 7 states in India and Bangladesh. **Noora Health trains and empowers family members to take care of patients after they are discharged from the hospital by equipping them with lifesaving skills.** Noora Health's programs focus on improving home care following hospital visits, helping to positively impact health outcomes, reduce preventable complications, avert avoidable readmissions, and reduce mortality.¹



PROBLEM

In India and similar low-resource settings, hospital patients and their families are often ill-informed about their health conditions and the procedures that they have undergone as well as ill-equipped with the skills needed to support the recovery process due to high patient volumes in facilities, low health literacy, and language and cultural barriers limiting family member engagement.² In these low-resource settings, there are also significant health worker shortages, and staff often lack time to focus on tasks outside of urgent medical treatment and as a result spend limited time conveying care instructions. **Family members constitute an untapped resource in the healthcare delivery process:** the time that they spend with patients after discharge from the hospital presents an opportunity to contribute to successful patient outcomes, such as minimized complications, reduced readmission rates, and increased patient satisfaction and retention.



SOLUTION

Through Noora Health's Care Companion Program, the Noora Health team trains healthcare staff to transfer health skills to family caregivers prior to patient discharge from facilities. **The Noora Health team also provides follow-up guidance and support to healthcare staff and families.** This program has been adapted for major medical conditions such as maternal and newborn care, cardiology and cardiac surgery, oncology care, general medical and surgical care, and COVID-19.



Engaging content



Training of trainers



Implementation support



Digital follow-up



Quality monitoring

Through the **Care Companion Program**, healthcare staff are empowered to offer facility-based training for patients and their accompanying family members, providing them with greater health literacy, foundational health information, and actionable skills so that they can continue to maintain high-quality care and support recovery at home. To develop these trainings, the Noora Health team employed a user-centered, iterative process that focused on close collaboration with patients, families, healthcare providers, and government stakeholders and that aimed to integrate smoothly with existing hospital structures and processes so as to minimize additional burden to staff members.



To implement its family caregiver education program, Noora Health uses a **train-the-trainers approach**, training hospital staff members to provide family members with interactive, condition-specific, skills-based training sessions supplemented by learning aids and materials developed by content specialists. Each healthcare facility has three to four designated “master trainers” who serve as local champions of the program and train additional staff. The master trainers receive support in building technical and interpersonal skills from Noora Health to ensure they are able to provide health education in an effective, empathetic, and emotionally competent manner, supplemented over time by regular “booster” trainings. Family caregiver trainings, which are culturally adapted and evidence-based,

cover theoretical concepts presented in a class format complemented by practical sessions where family members can practice implementing new skills and ask questions. These trainings seek to equip family members with the knowledge and skills needed to assist with patient support activities and identify warning signs or complications.

Family caregiver training sessions are tailored to local languages, cultural contexts, and community practices; have **class sizes of 15 to 30 people**; and take place during the patient’s stay in a facility. Each staff member can reach over 100 caregivers per week. The location of the training varies depending on the capacity of the facility; training can take place in hallways, waiting rooms, or in available spaces in wards, for instance. Upon discharge, caregivers gain access to Noora Health’s Care Companion Platform, through which they receive reminders and new educational content through a digital platform such as WhatsApp. Caregivers can also access on-demand support from a clinical team of nurses, who can supplement behavior change advice or recommend facility visits if needed based on reported symptoms. Noora Health staff checks in with patients during follow-up appointments at hospitals and conducts phone surveys of the participating patients and families to evaluate the impact of the training on patient outcomes.

Once the family caregiver education program is in place, Noora Health works with stakeholders to build capacity and ownership so that the program is sustainable and integrated into the hospital’s internal culture rather than being viewed as an external intervention. **Noora Health remains involved as needed to support implementation through quality control, assistance with content updates, and adjustments to the program based on hospital feedback.**



IMPLEMENTATION AND INTEGRATION INTO THE PUBLIC HEALTHCARE SYSTEM

Noora Health works with both **public and private hospitals and healthcare facilities**. Since its programs leverage existing hospital resources and staff, Noora Health is able to easily integrate into health systems. Public partnership agreements focus on integrating the program into the ongoing operations of these facilities and into government health budgets. These agreements ensure government partners commit specific resources: a program official to help oversee programs; staff capacity at each healthcare facility; and a portion of the health budget for training logistics. **The program is designed to be offered at no cost to patients and families, with program fees covered by the facilities and health systems.** The organization is working to develop a cross-subsidization program whereby revenue from working with private hospitals covers or reduces the cost of implementation in public hospitals, where funds may be more limited.



SCALABILITY

Noora Health continues improve its model in its existing 165 implementation locations to prepare for scaling to new locations. The team adapts the training content to the specific context of the locations to improve its alignment with family members' backgrounds and optimize the uptake of the information. Its program has been implemented in India and Bangladesh, demonstrating the adaptability of the model to different cultural contexts and socioeconomic settings.⁵



SUSTAINABILITY

Noora Health focuses on building ownership of the program within each facility's staff and leadership so that implementation can be maintained with minimal intervention from the nonprofit. Building on cost-sharing partnership agreements, Noora Health embeds its programs into ongoing health system operations with the **goal of enabling sustainable government ownership**. This allows Noora Health to decrease engagement over time and transition program monitoring and operations to the government, while still providing light-touch support and new program materials, models, and improvements when available. To cover program costs, health facilities and systems pay Noora Health a fee based on the number of trainings provided, according to cost-sharing agreements. However, the organization **relies on charitable funding** since the fees charged to public hospitals do not fully cover implementation costs. Noora Health plans to implement a model involving **subsidies from private hospitals** to reduce dependency on donors.⁶



CHALLENGES

Noora Health has faced challenges in balancing its focus on local sustainability and ownership with a need for consistency in its family caregiver education program. The organization is working on auditing, monitoring, and evaluation processes to facilitate greater standardization and replicability of its program across facilities. Another ongoing challenge is maintaining high morale, motivation, and buy-in of hospital staff following trainings, to prevent the staff from becoming overburdened during the implementation of this program.



IMPACT

Noora Health has implemented its family caregiver education program in **165 partner hospitals**, training over 5,000 nurses and over 1.3 million family members. Noora Health found that its training contributed to a 71% reduction in 30-day postsurgical complications for cardiac patients and a 54% reduction in avoidable newborn readmissions, a 16% reduction in newborn complication rates, and an 18% reduction in deaths within the first month of birth.⁷



5K+ nurses trained
1.3M+ family members trained

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ABOUT THE PROJECT IMPLEMENTERS AND FUNDER

The United Nations Sustainable Development Goals Partnership Platform–Kenya (UNSDGPP) is a UN development assistance platform spearheaded by the Kenyan government with the support of the UN system in Kenya. UNSDGPP aims to take leadership on the overarching facilitation and coordination of public-private collaboration, demonstrating how it can effectively translate sustainable development goals (SDGs) into action on the ground and thereby guide and accelerate innovations and impact, maximize investments, and optimize resource utilization in support of the realization of Kenya Vision 2030 and the “Big Four Agenda” which focuses on developing universal healthcare, manufacturing, affordable housing, and food security.

Innovations in Healthcare (iiH) is a nonprofit organization hosted by Duke University and founded in 2011 by Duke Health, McKinsey & Company, and the World Economic Forum. iiH seeks to improve healthcare worldwide by supporting the scale and impact of promising innovations. The nonprofit collaborates with and receives support from a global and diverse group of organizations, including corporations and foundations that are committed to strengthening and increasing the scale of healthcare innovations.

Takeda is a patient-focused, values-based, R&D-driven global biopharmaceutical company committed to bringing Better Health and a Brighter Future to people worldwide. Our passion and pursuit of potentially life-changing treatments for patients are deeply rooted in our distinguished history in Japan since 1781.

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innovationsinhealthcare.org
innovationsinhc@duke.edu

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