



BUNGOMA COUNTY



HEALTHCARE INNOVATIONS



Nairobi, August 2022

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BUNGOMA COUNTY INNOVATIONS REPORT [Innovations in Healthcare: Bungoma County]

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ABOUT OPEN PHENCES HUB



Public Private Healthcare Engagement and Collaboration Enhanced through Stronger Systems (PHENCES) is a 'think-and-do' Hub housed within Strathmore University Business School, established to strengthen engagement and collaboration between the public and private health sector, as well as partnerships with the wider ecosystem and other sectors.

Part of our mandate is identifying the most promising innovations in counties and promoting conversations on how these can be taken up and scaled through the public and private sectors. We purpose to understand the ecosystem, identifying critically intersecting sectors and actors, isolating health challenges, innovations and other multi-sectoral resources needed to meet these challenges.

We support the development of an enabling environment allowing for the alignment of resources towards supporting promising innovations to improve health service delivery..

..... identifying the most promising innovations in counties and promoting conversations on how these can be taken up and scaled through the public and private sectors



FOREWORD



Counties across Kenya are working towards universal healthcare. Increasingly, they are recognizing the value of combining strengths and capacities of both the public and non-public sectors, yet information on the latter is often scanty or missing altogether. At the same time, there is a tendency towards reduced development assistance for health, which means that Kenya (like most other low- and middle-income countries) will need to identify alternative sources of resources (human, financial, technological, and physical). All these factors underscore the importance of encouraging public private sector engagement, collaboration, and partnership.

Effective engagement requires good information on what is happening outside of the formal government systems. It is for these reasons that the Open Phences Hub is undertaking to map tech and non-tech innovations being implemented/been implemented within the counties of Kenya.

Limited resources amidst boundless need create a huge demand for innovation. But these are unlikely to have meaningful impact, if policy leadership fail to appreciate their existence, role and impact, and therefore, consider them as resources during planning and budgeting.

This 'Bungoma County innovations' report presents a summary of county information (general and healthcare information), selected healthcare indicators and county innovations (description and distribution). It has been prepared for a diverse audience. Anyone working/having interest in healthcare space and related sectors including health management teams, health facility managers, practitioners, health service users, persons working in health financing institutions, innovators, communities and community-based organizations. It was also developed to help healthcare managers appreciate the diversity of ideas and resources available within and outside of their jurisdictions. Finally, it was developed for health providers and investors to understand innovations, who they are targeted at, how they work, and what their (perceived and measured) impacts are for adoption and/or scaling.

The Open Phences team developed this document in recognition (a) the gap in the healthcare system on the low awareness of health system users on existing innovations and their potential impact, excessive fragmentation and duplication of innovations that serves similar functions but don't speak/connect with each other resulting in small scale innovators and ideas which have low probability of scaling (b) county management teams do not have a one resource where they can access information about the available health infrastructure, mortality and morbidity indicators and health service utilization indicators (that is updated on a regular basis).

The document was developed by Paul Waswa, Dan Makuba and Francis Wafula, with input from the broader Open Phences team that includes Noelle Orata, Elizabeth Gitau, Muriithi Njogu, Brenda Bunyasi, Annette Murunga, Cornelius Kiptoo, Irene Khayoni, Eric Tama, Peter Nguhiu and Lyndon Marani. Funding was provided by the Open Phences Hub.

Paul Waswa
Lead Project Analyst

Table of Contents

1

Definition of Terms.....1

2

County Information.....2

3

Product Innovations.....9

4

Business Model Innovations.....17

INTRODUCTION

Definition of Terms

Dominant economic activity - This is the economic activity that contributes the highest gross value added to the county GCP

Gini coefficient - The Gini coefficient is a statistical measure of economic inequality in a population. The coefficient measures the dispersion of income or distribution of wealth among the members of a population.

Age dependency ratio- This is the proportion of the population (age 0-14 and 65+ years) that is dependent on the working population (age 15-64 years).

Old-Age Dependency Ratio- This is the population aged 65 years and above relative to the total number of persons aged 15-64 years.

Child Dependency Ratio - This is the number of children aged below 15 years relative to the total number of persons aged 15-64 years.

Total fertility Rates - The average number of children a woman would have throughout her childbearing years (15-49).

Child Immunization (Fully Immunized) - This is the proportion of fully immunized children from 0 to 59 months.

Rural Access Index - Measures the proportion of the rural population that can access an all-weather road within two kilometres.

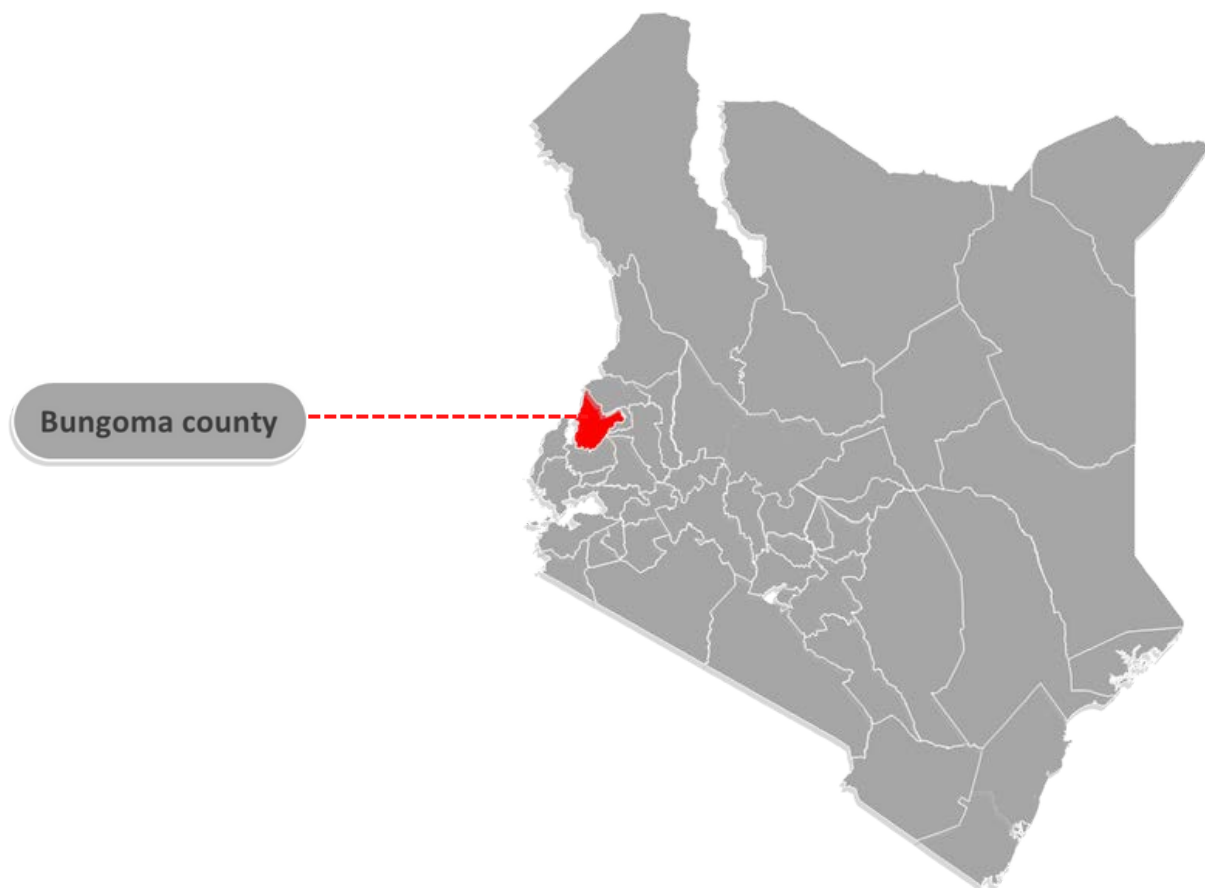
County Information

Overview

Bungoma county is situated within the Lake Victoria Basin. It has a land size of 3032.4 square kilometres. It borders the republic of Uganda to the North west, Trans-Nzoia County to the North-East, Kakamega County to the East and South East, and Busia County to the West and South West.

Bungoma County is divided into 12 Sub-Counties, 45 Wards and 236 Village Units (CIDP 2018 - 2022).

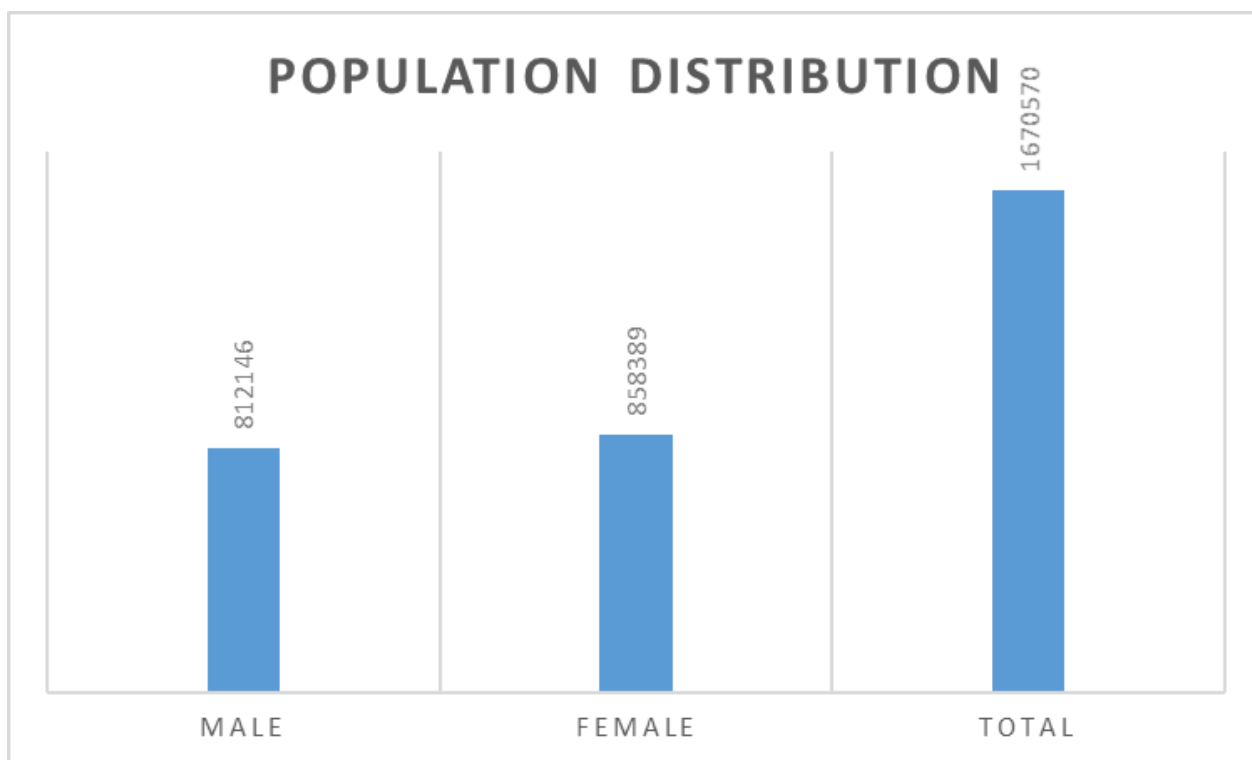
The dominant economic activities in this county is agriculture, forestry and fishing.



Demographic features

Bungoma county is a cosmopolitan county, though the dominant community is the Luhya. Other communities present include Kikuyus, Luo among others.

There main economic activities include sugarcane and maize farming, tobacco farming, cattle rearing and trading. The agriculture sector is dominant because of the county's background of settlement schemes with favourable ecological conditions.



552

The county's population density
(Persons/square kilometre)

Kenya population and housing census, 2019

OTHER FEATURES

FEATURE	COUNTY ESTIMATE	NATIONAL
Gini coefficient	37.6	40.4
Age dependency ratio	104	81.6
Old age dependency ratio	6.7	6.9
Child dependency ratio	97.3	74.7
Human development index	0.555	0.575
Rural Access Index - %	82	62.9
Population owning mobile phones (%)	36.8	47.3
Population accessing internet (%)	7.7	22.6

Distribution of Income

Bungoma county has a Gini coefficient of 37.6 (0.376). Whereas the Gini coefficient of 0 represents perfect equality where everyone has the same income, the score of 0.376 implies that there is a significant income gap in the population. Though the disparity is still lower than the national average.

Human Development

Bungoma county has a HDI of 0.555, slightly below the national score of 0.575. This is a summary measure of average achievement in the following key areas: a long and healthy life, being knowledgeable and having a decent standard of living. This ranks the county in the medium category of human development.

Healthcare Information



Infrastructure

The Bungoma County Health system is organized in accordance with the Kenya Essential package of health (KEPH) level structure from the household level to primary health care level to hospital level offering referral and specialized services. The health facilities are distributed as follows; 20 level IV facilities, 43 level III facilities and 205 level II facilities (KMHFL 2022).

Workforce

The county health worker force is at 9/10000 of the population (County fact sheet 2019)



Morbidity

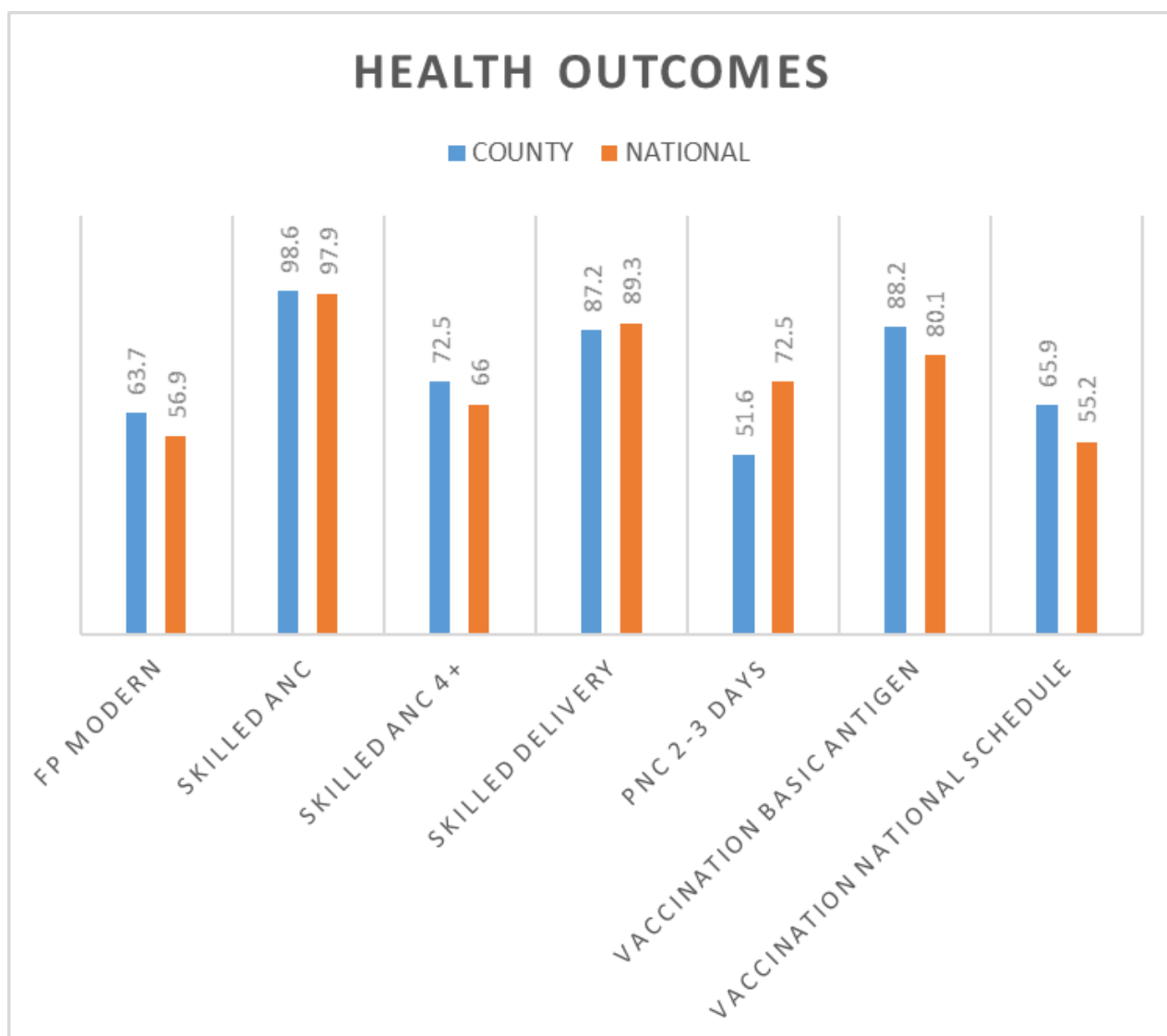
The top 5 diseases in the County as per the DHIS, 2017 are: Malaria, Anaemia, Pneumonia, Diarrhoea and Peptic Ulcers.

Nutrition

Children under-5 who are stunted stand at 24%, wasted take up 2%, underweight at 9% and overweight or obese stand at 3% (KDHS, 2014)



HEALTH SERVICE OUTPUTS



Contraceptive use

The modern methods include male and female sterilization, injectables, intrauterine devices, contraceptive pills, implants, female and male condoms, emergency contraception, the standard days method and the lactational amenorrhea method. Despite Nakuru county having a score of contraceptive use above the national score, there is still an unmet need for family planning of 14.6% (KDHS 2022) among married women.

Antenatal Care (ANC)

ANC care provided by a skilled provider is important for monitoring pregnancy, reducing mortality and morbidity risks for the mother and child during pregnancy, delivery and post-delivery. The ANC coverage in the county is at 98.6%. Those who do four or more ANC visits are 72.5%. This implies that there is either a high rate of dropout after the first ANC visit due to loss of follow-up or there is late timing for the first ANC visit thus unable to complete at least 4 visits.

Other Health outcomes

INDICATOR	COUNTY OUTCOME	NATIONAL
people living with HIV	30,091	1,517,708
Total fertility rate	3.6	3.4
Infant mortality rate	30.5	35.5
Under-5 mortality rate	49.2	52.0
Maternal mortality rate	238/100,000	355/100,000
Households accessing safe drinking water (%)	83.6	58.8
Health insurance coverage(%)	6.5	21.3

Source: County Fact Sheet, 2019

INNOVATIONS IMPLEMENTED IN THE COUNTY

According to WHO, health innovation is defined as a new or improved solution with the transformative ability to accelerate positive health impact. Innovations can be classified using different schemas. In this report we classify the healthcare innovations either as Product or Business model.



Product Innovations

They include new products or technologies or upward improvements on the existing ones either holistically or adding new features to meet customers needs in a novel way. Even though the risk of adding new features can be similar to launching a new product. Those which are new technologies/products are called radical innovations while those that are as a result of improving existing products are incremental innovations.



Business Model Innovations

These are innovations developed by enhancing advantage and value creation by making simultaneous and mutually supportive changes both to an organization's value proposition to clients and to its underlying operating model. successful business model innovations implement a holistic approach through integration of different business components into well organised systems

Product Innovations

NEW-BORN TELEMEDICINE



Target Geography

Rural

Target Population

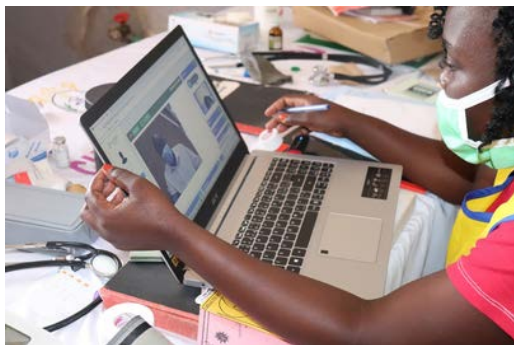
Children

Health Focus Area

Child health

The Need

Bungoma county has only one pediatrician in the entire county. To curb the shortage and also avert the process of training specialists that is time consuming and costly, Mount Kenya University in collaboration with County government of Bungoma launched a telemedicine application.



The Innovation

The application is mobile phone based and has features that virtually link clinicians in the remotest areas of Bungoma County to a pool of specialised consultants. A parallel effort is also ongoing to provide continuous mentorship to the front line providers of newborn care. Paediatric trainers from Kenya Paediatrics Association (KPA) and MKU have partnered with the County in the provision of continuous training.

INNOVATIVE DIGITAL RELATIONSHIP TOOLKIT AND INTEGRATED APPROACHES

Target Geography

Rural

Target Population

Adolescents and young people

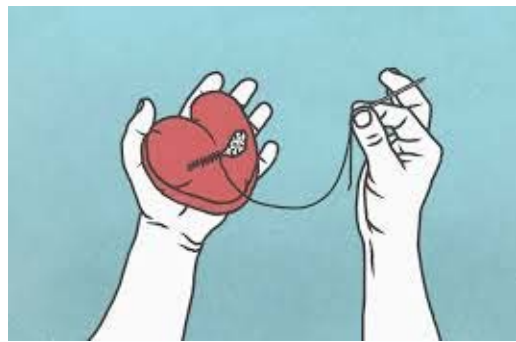
Health Focus Area

Sexual, Reproductive Health and Rights

The Innovation

The initiative is a multilevel approach to prevent intimate partner violence (IPV) and promote mental health among at-risk rural adolescent youths (15-24 years) in Bungoma County, Kenya.

A digital relationship toolkit allows youth seeking services in health facilities and community-based organizations (CBOs) to self-assess their risk of IPV, generate personalized relationship strength and weakness profiles, and set messaging preferences.



The program adopted the WHO recommended package of care for interpersonal group therapy for IPV and conduct group therapy sessions with participants. A government–CBO-academic partnership engagement model for IPV prevention and response were established by building the capacity of government and CBOs to monitor IPV, map existing resources and monitor intervention effectiveness.

ELECTRONIC PARTOGRAPH

Target Geography

Rural



Target Population

Women of Reproductive age

Health Focus Area

Reproductive, Maternal, Newborn, Child and Adolescent Health

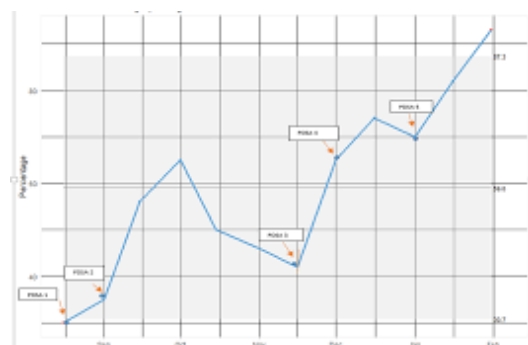
The Need

In Kenya, the number of women that die from pregnancy and birth-related causes is still high, despite increased investments to ensure that maternal health services are improved and that more women receive skilled assistance at birth.

The partograph is a useful tool in managing labour and - when correctly used - can help birth attendants detect abnormal labour progression and make timely decision on interventions.

The Innovation

Save the Children worked with software developers to develop an Android-based application for an electronic version of the standardised world health organization (WHO) partograph, using open source software to ensure it would be easy and cost-effective for use in many facilities.



The final product was in two versions – a mobile-based and a web-based version to allow for user flexibility. It enabled the user to systematically enter data that was automatically populated into a graphical format. It had an in-built alert system which was triggered by entry of any clinical parameters beyond the predefined normal range for each client. These alerts enabled the health worker to effectively monitor labor and take critical decisions if a problem arose.

JACARANDA HEALTH

MIDWIFE MENTORSHIP PROGRAM



Target Geography

Urban, Peri-urban, Rural

Target Population

Healthcare Workers

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent Health

The Need

Close to 60% of deliveries in Kenya occur at health facilities, but the quality of maternal care in the country remains inconsistent. With over 6000 women dying annually during child birth, low quality of clinical care and inequitable access to quality maternal care are major drivers of poor maternal and newborn health outcomes.

The Innovation

EmONC mentorship is an on-the-job training program on essential elements of quality maternal newborn care that Jacaranda Health has adapted into the public sector. Jacaranda's mentorship team has contributed to the development of a national EmONC mentorship package for providers across the country, incorporating learnings and best practices.

Addressing the need

The approach includes 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 life-saving skills are correctly applied.

The program has also developed a standardized toolkit that enables the trained mentors to guide trainees at their assigned facility towards continuous quality improvement.

PROMPTS

Promoting Mums Through Pregnancy and Postpartum Through SMS

Target Geography

Urban, Peri-urban, Rural

Target Population

Women of Reproductive age

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent Health

The Need

Maternal mortality ratio of 355 deaths per 100000 live births in Kenya. Newborn deaths contribute to almost half of all deaths of children under 5 years and younger in Kenya. Most of these deaths are either preterm deliveries or complications occurring at child birth (intrapartum). In an audit of deaths that occurred in 2014, delays in care-seeking was identified by the national committee that it contributed to 30% of maternal deaths. Empowering women with knowledge about pregnancy complications is critical to enable them seek care at the right time and place.

The Innovation

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. It 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. The personalized messages include: critical information on health, tips on financial planning for delivery, newborn nutrition, family planning and immunization.



TRIGGERISE

Target Geography

Urban, Peri-urban, Rural

Target Population

Adolescents and Young mothers

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent health

The Need

Our health ecosystem is diverse, and there was need to have a platform through which each player within the health ecosystem can be identified with what they do.

The Innovation

They connect across supply and demand, building an ecosystem of partners, local services and communities to deliver joined-up health services on the ground. The platforms connect the members' needs to existing local providers, by building ecosystems of local health services, community organizations and micro-entrepreneurs using tools such as reminders, follow-ups, subsidies and instant rewards to motivate members.



Currently connection is primarily adolescent girls and young mothers to a variety of sexual and reproductive health services and Antenatal care from local providers.

EVERY SECOND MATTERS FOR MOTHERS AND BABIES-UTERINE BALLOON TAMPONADE (ESM-UBT)



Target Geography

Urban, Peri-Urban, Rural

Target Population

Women of Reproductive Age

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent Health

The Need

Among the leading and common causes of maternal deaths in Kenya is postpartum hemorrhage (PPH).

The innovative solution

Every Second Matters for Mothers and Babies-Uterine Balloon Tamponade (ESM-UBT) an innovative device to help control postpartum hemorrhage (PPH) especially in resource constrained settings.



REWARD 'N' CONQUER: MOTORCYCLE ACCIDENT PREVENTION MODEL

Target Geography

Urban, Peri-urban, Rural



Target Population

Adolescents and Young mothers

Health Focus Area

Other

The Need

Road accidents are the world's most common cause of injury-related fatalities in the developing world, with Kenya being among those countries with the biggest problem.

The waiver of import tax on motorcycles has led to an increase in the use of motorcycles to ferry passengers, called 'bodaboda'.

This has led to an unprecedented increase in RTC (road traffic collisions) in Kenya.

Most of the accidents are due to untrained riders; accidents can result in severe head injuries, due the lack of helmets and poorly trained first responders.

The Innovation

Implemented in Bungoma County in Kenya, the 'Reward N Conquer' model implemented by Summit Pharmaceuticals Limited aimed at reducing death rates and traumatic brain injuries stemming from motorcycle accidents by addressing road safety knowledge gaps among local motorcycle taxi riders.

An interactive phone app with games was developed as a fun and easy reminder for motorcyclists to stay safe.

The app 'BodaRush' is transferable to any developing country.

The program also worked through the Kenya Red Cross, Bungoma Networks, to improve emergency first response at the scene of accidents. As a result it influenced members of the Bungoma County legislature thus the county government introduced legislation to make it mandatory for motorcycle taxi riders to undergo motorcycle-specific training in order to get licenses.

Business Model Innovations

BODABODA AMBULANCES

Target Geography

Rural

Target Population

Women of Reproductive age

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent health

The Innovation

In Cheptais Sub-county, motorcycle riders transport expectant mothers to the health facility to deliver babies. This has boosted the number of skilled delivery in the health facilities reducing the number of maternal and newborns deaths.

The Initiative is known as the bodaboda ambulance and was launched by the Chebyuk Community unit (Linked to Kopsiro Health Centre).



This was after it was realized that many women were delivering at home under the help of traditional birth attendants because they could not easily access the dispensary due to bad roads and the hilly terrain.

PREP N' BOUNCE

Target Geography

Rural

Target Population

Adolescents and Young mothers

Health Focus Area

Sexual, Reproductive, Health and Rights

The Innovation

The "PrEP N' Bounce" is a family planning and unsafe abortions prevention strategy through innovatively availing emergency contraception to adolescents and young mothers. This program developed and tested a culturally appropriate over-the-counter emergency contraception (EC) delivery model to reduce unwanted pregnancy and prevent unsafe abortion in adolescent girls and young women (17-24 yrs) in rural Bungoma County, Kenya.

An integrated platform was created where adolescent girls and young women can access education and information on how to negotiate/avoid dangerous sexual behavior and request EC via a telephone/SMS hotline. Pharmacists enrolled in the program received automated messages when requests for over-the-counter EC are made through the platform and will use an anonymous motorcycle dispatcher to deliver EC package to a location of the beneficiary's choosing. A tiered payment system is established based on the socio-economic status of the beneficiary as determined by a pre-programmed wealth index questionnaire on the app. The app is also integrated with Kenya's popular M-Pesa payment platform to ensure safe and secure payment.

STIMUKIT: A PEER SOCIAL MARKETING INTERVENTION

Target Geography

Rural

Target Population

Adolescent/Young mothers

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent health

The Innovation

This intervention provides sustainable home-based child stimulation training and child nutrition to vulnerable adolescent mothers, using a peer-led social marketing model championed by adolescent mothers who will be trained on the use of social marketing that is popular with adolescents. Appropriate child stimulation activities will be designed and shared on social networks, and toys will be bundled with infant food and sold to the mothers during home visits.



Primary outcomes include improved cognitive development in 3,600 children, along with improved socio-economic status of the adolescent mothers.

HEWA TELE



Saving lives through the provision of affordable quality medical oxygen to health facilities in Kenya

Target Geography

Urban, Peri-Urban, Rural

Target Population

General Population

Health Focus Area

Essential Commodities, Supply chain

The Innovation

Hewa Tele (“Abundant Air” in Swahili) is a social enterprise focused on saving lives in Kenya through the provision of affordable quality medical oxygen to health facilities. The mission of HewaTele is to provide a regular supply of medical oxygen at affordable rates to reduce delay in access to emergency healthcare.



They utilize a hub and spoke model of delivery. This ensures that all the clients are within 2 hours drive from the nearest plant using our customized trucks. In the case of Bungoma county which utilizes the Siaya oxygen Plant, a depot has been set up at the county referral hospital to ensure that clients get the oxygen in good time.

Hewatele, through its affiliate NGO CPHD, offer training to healthcare workers on oxygen use including patient identification and monitoring by using a curriculum approved by the ministry of health.

KANGAROO CARE

Target Geography

Urban, Peri-Urban, Rural

Target Population

Newborn Health

Health Focus Area

Reproductive, Maternal, Neonatal, Child and Adolescent Health

The Need

The causes of infant deaths in the neonatal period include complications due to prematurity (birth under 37 weeks' pregnancy), problems associated with the birth process, and infections. In Kenya, 12 out of every 100 live births in 2010 was a premature birth (WHO and UNICEF, 2010), and in 2015, complications associated with prematurity contributed to 24.6% of the neonatal deaths recorded in Kenya, and to 15% of deaths in children aged under five (UNICEF, 2017).

Premature and low-birth weight infants require extra care to avoid illness and death from secondary, preventable complications such as hypothermia and infection. This is a particular problem in Kenya and other developing countries, where incubators and similar technologies are often scarce, over-crowded or unreliable, as well as costly.

The Innovation

Kangaroo Care (KC) is a low-cost innovation recommended for the care for stable preterm neonates and low-birth weight babies.

It refers to the prolonged and continuous skin-to-skin contact between a mother (or other caregiver) and the preterm or low-birth weight baby for up to 24 hours a day. Besides prolonged, continuous skin-to-skin contact, KC also promotes exclusive breastfeeding of the infant.



Kangaroo Care allows for early discharge of the mother from a facility, and can therefore be practiced both in hospital and within the community.

BINTICARE FOUNDATION CBO MODEL



Target Geography

Urban slums, Rural

Target Population

Adolescents and Young people

Health Focus Area

Sexual health and Rights, menstrual hygiene, Mental Health, Education and Economic empowerment

Umeskia? Unajua?

This is a learning tool in form of a game that seeks to educate adolescent girls, boys and young men about menstrual hygiene and related topics and dispel myths. It involves education through school teachers and sanitary manufacturing companies.

Re-usable sanitary Towels

BintiCare Foundation supplies reusable sanitary towels to schools, slums, prisons and campaign attendees.

The towels are made within BintiCare using cheap material by rescued girls learning tailoring. A session is held where attendants are taught on SRH and menstrual hygiene before they receive the sanitary towels and sometimes complementary underwear.



Dignity campaigns

BintiCare holds campaigns especially during holidays to educate boys and girls on various topics to boost their self worth and encourage respectful development. Themes covered include identity, sexuality, relationships and reproductive health including contraception. They also hold talks within schools on invitation basis.

Mental health support

BintiCare offers mental health support to vulnerable girls in the community. These include sexual abuse survivors, pregnant teenagers, those from ultra-poor backgrounds and school dropouts. The director of the foundation is professionally trained to support those struggling with their mental health.

Economic empowerment of widows

BintiCare is financially enabling impoverished widows in the community through chicken projects. They train and equip them with the necessary skills, donate chicks and routinely assess productivity and sustainability.

Education Support

Sponsorships

BintiCare sponsors needy students and rescued girls wishing to continue with their education both in primary schools and secondary schools. Copayment with families that can afford is encouraged, even in kind.

Technical Training

The foundation offers technical training to girls not wishing to continue with their formal education. The various facets include hairdressing, tailoring, Computer Studies, food and beverages and mentoring certificates. The professional teachers are mostly volunteers and the examination is performed by National Industrial Training Authority which awards certificates after.

Binti House Rescue Home

The foundation offers a home to young girls who are stigmatized from their own homes due to teenage pregnancies and GBV. They also offer a home to the children born by the GBV survivors and teenage mothers.

BINTICARE BUNGOMA HOME AND CENTER



Menstrual Hygiene - So Sure Pads



Target Geography

Peri-Urban, Rural

Target Population

Women, Adolescents and Young Girls

Health Focus Area

Menstrual Hygiene

The Need

One Acre Fund is an organization that supports farmers by providing farming inputs and other products such as solar lamps at a flexible payment. They have recruited field officers who train farmers on best farming practices. The officers engage directly with the community members, thus realized the need to provide a solution to menstrual hygiene. There was a gap as girls were missing school during their monthly periods since they can not afford the available hygiene management products available.

The Innovation

Through their field officers, One Acre Fund has made available So Sure Pads made by AFRIpads. The reusable sanitary pads go for \$6 for a pack of 4 pads. The pads can be used for a period of 12 months, are highly absorbent, easy to wash and also dry quickly. They offer women and girls a more sanitary option for those who cannot afford to purchase disposable pads. Research done by One Acre Fund shows that 62% of the One Acre Fund farmers report using materials such as cloth, pieces of blankets, mattresses or cotton wool.

This solution has not only improved their menstrual hygiene, it has helped keep girls in school during their monthly periods.



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