Lwala Community Hospital, Lwala, Kenya

Date:	Prepared by:
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I. Demographic Information

1. City & Province:
Lwala Village, Kameji Sub-location, North Kamagambo Location, Rongo District, Migori County, Kenya

2. Organization:
Real Medicine Foundation (www.realmedicinefoundation.org)
Lwala Community Alliance (www.lwalacommunityalliance.org)

3. Project Title:
Lwala Community Hospital

4. Reporting Period:
October 1, 2018 – December 31, 2018

5. Project Location (region & city/town/village):
Lwala Village, Kameji Sub-location, North Kamagambo Location, Rongo District, Migori County, Kenya

6. Target Population:
North Kamagambo and East Kamagambo locations and those surrounding–approximately 60,000 people

II. Project Information

7. Project Goal:

Lwala Community Alliance (LCA) is a community-led, nonprofit health and development innovator working in Migori County in rural western Kenya. Through Lwala Community Hospital, the organization provides approximately 50,000 patient visits each year. The mission of the organization is to build the capacity of rural communities, including their neediest residents, to advance their own comprehensive well-being. The hospital is part of a larger effort to achieve holistic development in Lwala and the surrounding community, including educational and economic development.

8. Project Objectives:

- Improve patient care and clinical operations
- Improve access and facility infrastructure
- Expand and improve quality of education programs
- Professionalize the organization through better policies and practices
- Properly procure and account for physical, financial, and human resources
- Increase impact of health outreach programs
- Build capacity of community members in income generating activities
- Include community in program planning, monitoring, and evaluation

9. Summary of RMF-sponsored activities carried out during the reporting period under each project objective (note any changes from original plans):

- Funded maternal and child health costs including:
  - Personnel costs for nurse Caren Siele and clinical officer Wycliffe Omwanda
  - 58% of medicine costs

10. Results and/or accomplishments achieved during this reporting period:

Hospital Program
IMPACT: Sustained reduction of morbidity and mortality through complete and comprehensive access to quality health care for the people of Rongo Sub-County

- We saw 101,613 total patient visits across all seven facilities that we supported during the year 2018.

- In 2018, we maintained a 98% elimination rate for HIV-exposed children. In November, we graduated our cohort of 63 HIV-exposed infants from the elimination of mother-to-child transmission (eMTCT) program. Of the 64 children that were enrolled into this cohort in May 2017, only one child has tested positive.
- Through our community-led reproductive health model, we have drastically increased contraceptive uptake. In fact, in 2018 we provided 14,833 couple years of protection (CYP), a measure that weighs the value of a contraceptive method by the number of years it provides protection from pregnancy.
- 12 Lwala villages have been certified by the Ministry of Health as Open Defecation Free. Because of our success providing sanitation coverage in our innovation hub, Lwala has been tasked to lead all villages in North Kamagambo to become Open Defecation Free.
- This year, we scaled up the non-pneumatic anti-shock garment (NASG) to treat obstetric hemorrhage, a leading cause of maternal death. To date, we have trained 17 facilities, including three tertiary facilities and 166 clinical officers, on the NASG, and distributed 40 garments.

Public Health Program

IMPACT: Improved and sustained positive health-seeking behavior of the people of Rongo Sub-County

- 10,179 children under five regularly received care from our cadre of 204 Community Health Workers across our innovation hub (North Kamagambo) and expansion site (East Kamagambo)—a 60.1% increase from our 2017 enrollment rates.
- We continue to provide education to community members on the consequences of poor sanitation and the benefits of latrine construction through an intensive community-led total sanitation (CLTS) initiative. This year, 12 villages in our catchment area were certified Open Defecation Free by a third-party verification firm contracted by the Ministry of Health. After villages are certified, we begin working with them on water infrastructure projects. So far, two villages have completed water access projects to rehabilitate broken handpumps.
- Lwala has continued to exceed its target of fully immunizing 90% of children under five. We achieved an immunization rate of 97% for 2018, which is significantly higher than the county rate of 57% (DHIS 2014). The immunization rate in our expansion site is 65%. We expect that this rate may decrease as we enroll more children into our Community Health Worker program who were not previously accessing the formal healthcare system. Over time we will increase this number through ongoing care and support.

Education Program

IMPACT: Improved graduation rates, educational results, and health outcomes for school-aged girls and boys of North Kamagambo

- We hold three Better Breaks sessions every year to give kids a fun, safe, and educational activity to enjoy during school vacations. In our 2018 Better Breaks sessions, we administered 96 pregnancy tests, provided 528 pieces of contraception, and tested 691 children for HIV. We survey the attendees of our Better Breaks sessions on topics such as contraception access, gender-based violence, and perceptions of safety in the community.
- For the 2018 school year, we provided 706 girls with school uniforms and 1,120 girls with sanitary pad kits. We also provided mentorship to 385 girls in school and 117 girls who have dropped out of school.

Economic Development Program

IMPACT: Increased economic opportunities to promote self-reliance and sustained livelihoods for the people of North Kamagambo

- In order to provide financial access to even the most impoverished community members, Lwala partners with the organization Village Enterprise. Village Enterprise provides training and microgrants to community members so that they can start their own small businesses.
    - Since Lwala began partnering with Village Enterprise in March 2017, 4,371 people have been measured by the Progress Out of Poverty Index (PPI); 3,082 have qualified as ultra-poor, and 2,119 have enrolled in the Village Enterprise program. In Village Enterprise's 2018 fiscal year, our enrollees increased average household savings by 91% to $43.12 USD, and average household consumption increased from $273 to $352. Both of these measures are standard indicators in measuring economic wellbeing and reflect how our innovative partnership with Village Enterprise is improving the livelihood of our community members.

Monitoring and Evaluation

The M&E team is responsible for all data collection and data management for the organization and is a support system for the program teams to successfully track and improve their activities.

- In September, Lwala published a peer-reviewed article with Vanderbilt University in *PLOS ONE* (the Public Library of Science journal) on our achievements in under-5 mortality in Rongo-Sub County.[1] This cross-sectional survey found a significant decrease in under-five mortality following the establishment of Lwala Community Alliance. Between 1999–2006, before Lwala's intervention, the under-five mortality rate was 104.8 deaths per 1,000 live births. After Lwala's intervention, this rate was 53 deaths per 1,000 live births, and in the last five years this number has decreased further to 29.5 per 1,000 live births. This is compared to regional data which shows the under-five mortality rate is 82 deaths per 1,000 live births.
- We are in the midst of conducting a robust evaluation of our program expansion. This quasi-experimental study employs repetitive cross-sectional surveys to understand health impacts in Lwala sites compared to control sites. The study focuses on maternal and child health, but also collects a wide range of socioeconomic data to help us understand more about the drivers of health outcomes. In March and April, we surveyed households across our current innovation hub and primary expansion location. Through our partnership with Vanderbilt Institute of Global Health, the data from the most recent iteration of this evaluation is being analyzed.
    - In December, we trained 21 enumerators for our latest surveying effort, who will collect baseline information in two locations that will be included in our catchment area during our expansion. In previous iterations of this survey, the sampling frame factored in approximately 6,000 households, and sample size was calculated using a binomial test to compare one proportion to a reference value. For survival analysis, Cox regression models with clustering at the household level were used to estimate hazards ratios. We will continue to gather this data over time. For the first time, we are engaging a control site in a neighboring sub-county, Uriri, to better understand the impact Lwala has had in our catchment areas.

Administration and Management

- Lwala Executive Director Ash Rogers was published twice, once as a co-author of the Community Health Worker Assessment and Improvement Matrix (CHW AIM)—a toolkit for improving CHW programs—and once on One.org to showcase our efforts to end maternal mortality and share her personal experience of obstetric hemorrhage.
- Lwala Sexual and Reproductive Health Coordinator Elisha Opiyo traveled to Kigali to present our innovations in adolescent and youth reproductive health at the 2018 International Family Planning Conference.
- Lwala Co-Founder Fred Ochieng was featured on the *Future of Healthcare* podcast to share the story of how Lwala Community Alliance was born to bring hope from tragedy when his parents died of AIDS.

11. Impact this project has on the community (who is benefiting and how):

The primary beneficiaries of RMF-supported Lwala Community Alliance are children, women, HIV-infected persons, and the elderly. Prior to the establishment of Lwala Community Hospital, there was no immediate access to primary health care or HIV/AIDS testing and care in the area. For this reason, Lwala's health intervention has focused on primary care for children, access to medicines (particularly vaccines and antimalarials), HIV testing and care, public health outreach, and safe maternity. The impact has been substantial since opening, though more work is to be done, and systems of measurement need to be strengthened.

12. Number served/number of direct project beneficiaries (for example, average number treated per day or per month and if possible, per health condition):

Outpatient Monthly Totals

This chart reflects the number of patients reporting for outpatient care due to illness and does not capture the mothers and children who report to the MCH clinic for growth monitoring, immunizations, family planning, antenatal care and postpartum care.

	Under 5		Over 5		
Month	Male	Female	Male	Female	Total
October	300	260	335	492	1,387
November	321	296	247	461	1,325
December	305	294	321	422	1,342

[1] Starnes JR, Chamberlain L, Sutermaster S, et al. Under-five mortality in the Rongo Sub-County of Migori County, Kenya: Experience of the Lwala Community Alliance 2007-7 with evidence from a cross-sectional survey. *Public Library of Science*. 2018;13(9). doi:10.1371/journal.pone.0203690.

Total outpatients for reporting period:	**4,054**
Average per month	**1,351**

Child Welfare Clinic Monthly Totals

This chart reflects the number of well children under 5 reporting for regular growth monitoring and immunizations.

Month	New Clients		Re-visits		Total
	Male	Female	Male	Female	
October	28	29	491	467	1,015
November	28	27	426	507	988
December	16	23	430	389	858
				Total:	**2,861**
				Average per month:	**953**

Family Planning Clinic

Month	New Clients	Re-visits	Total
October	108	120	228
November	120	126	246
December	77	117	194
		Total:	**668**
		Average per month:	**223**

Inpatient Ward

Month	Under 5		Over 5		Total
	Male	Female	Male	Female	
October	14	11	5	21	51
November	9	13	12	24	58
December	17	14	24	17	72
				Total:	**181**
				Average patients per month:	**60**

Antenatal Clinic

Month	New Clients	Re-visits	Total
October	60	252	312
November	59	205	264
December	49	182	231
		Total:	**807**
		Average per month:	**269**

Deliveries and Postnatal Care

Month	Number of deliveries at LCH		Deliveries at partner facilities through MCH outreach	Total	Women receiving postnatal care
	Boys	Girls			
October	29	29	58	116	82
November	36	28	56	120	104

December	30	38	49	117	112
			Total:	**353**	**298**
			Average patients per month:	**118**	**99**

HIV/AIDS patients reporting for HIV appointments					
	Under 5		Over 5		
Month	Male	Female	Male	Female	Total
October	89	73	225	606	993
November	85	69	213	546	913
December	57	49	170	489	765
				Total:	**2,671**
				Average patients per month:	**890.3**

13. Number of indirect project beneficiaries (geographic coverage):

Approximately 60,000. The total population of North Kamagambo is about 16,500, and programs are a magnet to people beyond North Kamagambo, including our expansion site, East Kamagambo.

14. If applicable, please list the medical services provided:

- Basic primary care services
- Maternal and child health services
  - Antenatal and Postnatal Care
  - Vaccination
  - Growth Monitoring
  - PMTCT of HIV
  - Family Planning
- Treatment of TB
- Comprehensive care for HIV
  - Preventative services (including PMTCT and male circumcision)
  - Counseling and testing (voluntary, diagnostic, and provider-initiated)
  - Care and treatment for people living with HIV (including ARVs and nutritional support)

15. Please list the most common health problems observed within your region.

The morbidity charts below detail the number of patients reporting to the outpatient department for various conditions. Only conditions with 10 or more reported cases are listed.

October 2018			
Under 5		Over 5	
Clinical Malaria:	693	Clinical Malaria:	610
Respiratory Illnesses:	212	Confirmed Malaria:	45
Skin Infections:	45	Skin Infection:	33
Diarrhea:	37	Urinary Tract Infection:	157
Anemia:	15	Diarrhea:	30
		Pneumonia	60
		Rheumatism/Joint Pain:	62
November 2018			
Under 5		Over 5	
Clinical Malaria:	667	Clinical Malaria:	555
Confirmed Malaria:	45	Confirmed Malaria:	49
Respiratory Illnesses:	233	Skin Infections:	47
Diarrhea:	50	Urinary Tract Infection:	74
Skin Infections:	113	Diarrhea:	16

Upper Respiratory Tract Infection:	204	Pneumonia:	38
		Rheumatism/Joint Pain:	45
		Accidents:	49
December 2018			
Under 5		Over 5	
Clinical Malaria:	562	Clinical Malaria:	576
Respiratory Illnesses:	121	Confirmed Malaria:	29
Confirmed Malaria:	47	Skin Infections:	54
Diarrhea:	72	Urinary Tract Infection:	119
Skin Infections:	115	Pneumonia:	16
Anemia:	20	Diarrhea:	36
		Rheumatism/Joint Pain:	45
		Accidents:	46

16. Notable project challenges and obstacles:

- One challenge that we faced was a lack of electricity at one of our partner facilities. This facility has not had electricity for the past 4 years. In addition, the facility did not have a facility management committee that could advocate on its behalf. To solve this problem, we resurrected the inactive facility management committee and trained them on leadership and financial management. They then used those skills to re-evaluate the facility's budget, prioritizing funding for electricity. The facility now has electricity, which allows it to maintain 24-hour maternity services. As a result, women are able to deliver at the facility at all hours of the day and night, when they would have otherwise delivered at home.

17. If applicable, plans for next reporting period:

- Bring patient enrollment directly to the doorsteps of new HIV-positive clients through mUzima's mobile application.
- Conduct the first Lwala Community Hospital Health Facility Assessment using the 6 WHO building blocks to compare our hospital to the clinics we have already assessed.
- Lead North Kamagambo in its effort to certify every village as Open Defecation Free.
- Provide 12,000 couple years of protection to the communities we serve.
- Recruit, train, and deploy a new cadre of 26 Youth Peer Providers to address adolescent and youth needs surrounding sexual and reproductive health.
- Bring the lifesaving non-pneumatic anti-shock garment intervention to all of Migori County.
- Recruit a new cadre of at least 180 Community Health Workers in our secondary expansion site, South Kamagambo.

18. If applicable, summary of RMF-sponsored medical supply distribution and use:
NA

19. Success story(s) highlighting project impact:

SUCCESS STORY: Mary Ochieng

On July 3, 2018, Mary Ochieng, a 17-year-old young woman, arrived at Lwala Community Hospital. She had come from a village called Gem, which is 40 minutes away by motorbike. Mary was semi-conscious and complaining of abdominal pain.

Mary was immediately put on IV fluids and assessed by a clinician. During the assessment, Mary became unconscious. The tests revealed that she was pregnant, and the clinicians determined that Mary was suffering from internal bleeding due to an ectopic pregnancy.

Ectopic pregnancies are the most common cause of death for women in their first trimester. Often, women experience a rupture in the fallopian tube, which leads to internal bleeding and can cause hypovolemic shock and, ultimately, death. Patients in middle- and lower-income countries are 10 times more likely to die from their ectopic pregnancies than patients in wealthy nations.[2]

The clinicians applied the non-pneumatic anti-shock garment (NASG), a tool that RMF-supported Lwala Community Alliance has introduced to facilities throughout Migori County, and Mary regained consciousness five minutes later. She was then referred to Homa Bay County Hospital for surgery.

Mary was interviewed on her experience using the NASG.

A patient can remain in the NASG for up to 72 hours because it conserves blood flow to the vital organs. This addresses a major cause of death in cases of obstetric hemorrhage: delays in care while waiting to be seen by a clinician or during transport to a higher-level facility. The NASG can reduce almost all obstetric bleeding, while redirecting the remaining blood from the lower extremities to the vital organs, which keeps the patient stable and reverses shock.

Mary was accompanied by one of Lwala's clinical officers, Tom, on the ambulance to Homa Bay County Hospital for further treatment. Tom instructed the operating team to perform Mary's surgery without removing the NASG. Homa Bay County Hospital was able to successfully perform the surgery to remove the damaged fallopian tube while Mary remained stable in the garment.

Mary recovered at Homa Bay County Hospital, and the NASG was eventually removed. She has been able to make a full recovery and was discharged and sent home on July 6, 2018.

Lwala Clinical Officer Tom Magolo was interviewed about the benefits of the NASG.

As a clinical officer, Tom is grateful for the value the NASG has brought to his community. He can recall many instances before the introduction of the NASG in which patients died while being transported to receive advanced care. During the time it takes to initiate the referral process, find a facility with blood, and transport the patient, the NASG keeps the patient alive. To date, Lwala has trained over 166 healthcare providers from 17 clinics on the NASG as a lifesaving intervention

III. Financial Information

Detailed accounting report sent separately each quarter.

[2] Filippi V, Chou D, Ronsmans C, et al. Levels and Causes of Maternal Mortality and Morbidity. In: Black RE, Laxminarayan R, Temmerman M, et al., editors. Reproductive, Maternal, Newborn, and Child Health: Disease Control Priorities, Third Edition (Volume 2). Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2016 Apr 5