The Thamini Uhai (Value Life) program uses innovation and partnership to save mothers and their newborns in rural Tanzania.
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**COVER**

I, Ashura Joseph (age 35) live at Chekenya village, Kasulu, Kigoma. I delivered my previous four children at home but I could not dare to do so for my fifth baby due to listening to radio adverts and receiving health education about the importance of facility delivery. I am happy for the service I received from Nyenge Health Center.
LETTER FROM THE CHIEF EXECUTIVE OFFICER

Maternal deaths are mostly preventable, but because of a lack of access to emergency obstetric care, pregnant women in some parts of the world die needlessly from birth complications. In the past year, World Lung Foundation (WLF) expanded on our previous successes in building capacity to provide quality emergency obstetric and neonatal care to women in some of Tanzania’s most remote areas. As unintentional pregnancies also pose a significant burden, WLF has worked with local partners to integrate family planning into its maternal and reproductive health work in Tanzania.

Along with our generous donors—Bloomberg Philanthropies, Fondation H&B Agerup, Swedish International Development Cooperation Agency, and Merck for Mothers—we understand that this work requires innovation, adaptability, local collaboration, and staying power, so that these life-saving improvements in healthcare delivery can take root and continue long after our project ends.

INNOVATION
Two of the innovative strategies we have adopted in this project are making a significant difference. First, we train local, non-physician assistant medical officers (AMOs) to provide emergency obstetric and neonatal care, including cesarean section surgery. Second, we provide ongoing supportive supervision to our AMOs to help them develop skills and build confidence, until ultimately, they can become the trainers of the next group. We have contributed to Tanzania’s leadership in this task-shifting strategy, and our project has proven that this innovative approach saves lives.

ADAPTABILITY
As our experience of working in rural Tanzania deepens, we adapt elements of our model to reach more women. For example, when we realized that the growth in the number of women coming to give birth at WLF-supported facilities had slowed, we launched a hard-hitting media campaign to address the dangers of home delivery and promote the benefits of giving birth in a health center. The evaluation of the campaign that ran in 2014 showed a remarkable recall rate and a significant improvement in women’s expressed intention to deliver in a facility.

LOCAL COLLABORATION
We know that nothing we do will stand the test of time unless we work through our colleagues in the Tanzanian health system. From day one, we have collaborated with them on every aspect of the project. This partnership has led to WLF becoming a respected partner in Tanzania, invited to participate in national policy development efforts on maternal care. We work closely with regional- and district-level health managers and routinely involve them in supervision and monitoring visits to facilities.

STAYING POWER
We understand that making our project’s work sustainable in Tanzania takes time. We believe that this model for providing emergency obstetric and neonatal care, which the Government of Tanzania has formally endorsed, can endure and ultimately become fully integrated into the Tanzanian healthcare system. We have come a long way since we began in 2008. And we have saved and improved thousands of lives.

We look forward to building on our accomplishments to date and continuing to support the effective leadership and program implementation of our WLF team in Tanzania.

Sincerely,

Peter Baldini
CHIEF EXECUTIVE OFFICER
World Lung Foundation
LETTER FROM THE COUNTRY DIRECTOR

In 2014, the World Lung Foundation Maternal Health Program continued to realize significant achievements in reducing maternal and neonatal morbidity and mortality in rural Tanzania. WLF-supported facilities in Kigoma, Pwani and Morogoro handled 26,055 deliveries, an 11 percent increase from 2013. At least 596 women with potentially life-threatening complications received treatment at these facilities, and there was a decrease in the number of obstetric-related referrals from WLF-supported facilities to other health facilities, as a proportion of all deliveries managed. These indicators show that the facilities are providing appropriate, comprehensive and life-saving treatment for an increasing number of women in the region. Outcomes also improved: Both the facility-based maternal mortality ratio and the facility-based neonatal mortality rate decreased compared to 2013. These results reflect continued improvement in the provision and quality of care in the supported facilities.

Notable successes in the past year include the design and rollout of a comprehensive e-learning platform for healthcare providers in WLF-supported facilities. WLF produced many of the materials available on the platform, including e-learning modules and educational films on cesarean section and obstetric anesthesia, all narrated in Kiswahili.

Another major achievement was the development and rollout of Thamini Uhai (Value Life), a radio and community outreach communication campaign aimed at increasing the number of women delivering their babies in health facilities. The results of our campaign evaluation indicate that Thamini Uhai was highly effective in improving the intention to deliver in facilities.

Our team has continued to strengthen its relationship with local, regional and national government. Having witnessed the success of WLF’s Maternal Health Program, the national government has adopted our model for reducing maternal and neonatal mortality. WLF was invited to contribute to the development of the government’s three-year (2015-2018) national health initiative, Big Results Now. Our strategic approach to improving access to comprehensive emergency obstetric and neonatal care is the major intervention in reproductive, maternal, neonatal and child health (RMNCH) prioritized by the national government in this initiative.

In addition to these achievements, the program team developed a new three-year strategic plan, together with new policies, procedures and systems all aimed at improving organizational performance.

In 2015, we are looking forward to an even more fruitful year, with the addition of new activities and campaigns, stronger program governance, and further improvements in the quality of care provided in WLF-supported facilities. We are also eager to further strengthen our partnerships with government and RMNCH stakeholders in Tanzania.

Dr. Nguke Mwakatundu
COUNTRY DIRECTOR
TANZANIA
World Lung Foundation
World Lung Foundation acknowledges the commitment, expertise and effort of our staff and consultants in Tanzania and New York, whose contributions helped to ensure that the program achieved significant results in 2014.

WLF also thanks the Ministry of Health and Social Welfare and the Regional Health Secretariats of Kigoma, Morogoro and Pwani for their support and collaboration in WLF’s activities in Tanzania.

Finally, we acknowledge and thank Bloomberg Philanthropies, Fondation H&B Agerup, the Swedish International Development Cooperation Agency, and Merck for Mothers for their generous financial support, which made our activities and achievements possible in 2014.
World Lung Foundation’s Maternal Health Program is an innovative strategy to reduce maternal and neonatal deaths in rural areas of Tanzania. Since 2008, WLF, working in partnership with the Government of the United Republic of Tanzania, has established comprehensive emergency obstetric and neonatal care (CEmONC) in 15 facilities in the regions of Kigoma, Morogoro and Pwani. These facilities include ten health centers and five hospitals. The project is funded by Bloomberg Philanthropies, Fondation H&B Agerup, Merck for Mothers, and the Swedish International Development Cooperation Agency.

Working closely with the government at national, regional and local levels, WLF has established a model for scaling up CEmONC to save the lives of mothers and newborns. This model has helped the government to move closer toward its goal of achieving Millennium Development Goals (MDGs) 4 and 5. MDG 4, reducing deaths of children under five years of age to 54 per 1,000 live births, has now been achieved. Tanzania is also closer to achieving MDG 5, which calls for the maternal mortality ratio to decline by three-quarters: Tanzania’s MMR has declined 55 percent since 1990, and currently stands at 410 deaths per 100,000 live births.1

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1 Levels & Trends in Child Mortality Report 2014, Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation
WLF continually works towards developing sustainability in the supported facilities, with the objective of eventually transitioning responsibility and oversight to the Tanzanian government.

Since its inception, the program has trained more than 100 assistant medical officers (AMOs), nurse-midwives and clinical officers in comprehensive emergency obstetric and newborn care (CEmONC) and anesthesia.

The Maternal Health Program operates on two basic principles: that decentralizing CEmONC services to the health center level significantly expands access to life-saving services, and that CEmONC can be provided safely by non-physician mid-level healthcare providers (assistant medical officers).

To achieve these goals, WLF upgrades health centers, strengthens district hospitals, trains and mentors AMOs to provide emergency obstetric care including cesarean sections, and trains and mentors nurse-midwives/clinical officers to provide anesthesia.

Since its inception, the program has trained more than 100 AMOs, nurse-midwives, and clinical officers in CEmONC and anesthesia.

Interventions to reduce maternal mortality are generally based on the “three-delay model,” which suggests that maternal deaths result from three types of delays: delay in deciding to seek care, delay in reaching appropriate care, and delay in receiving proper care at health facilities. While the clinical side of WLF’s work focuses primarily on the third delay, in 2014 the program began intensive communication activities to address the first and second types of delay. The Thamini Uhai campaign included mass media communication and community engagement to encourage women to: deliver in a health facility rather than at home; take active steps to plan for a facility birth; and seek skilled care as soon as danger signs of pregnancy and childbirth occur. The campaign was implemented in Kigoma, where maternal health indicators lag behind the national average. WLF supports a number of facilities in Kigoma, so that the program is well-placed to meet the increased demand for service provision generated by communication campaigns.

WLF continually works towards developing sustainability in the supported facilities, with the objective of eventually transitioning responsibility and oversight to the Tanzanian government. Ultimately, WLF aims to support the Ministry of Health and Social Welfare in integrating this model into the national maternal health program and successfully replicating the model throughout the country.
WHAT WE DO

The cornerstone of World Lung Foundation’s Maternal Health Program is continuous investment in health facility infrastructure, as well as training, supervising and supporting non-physician clinicians to provide care to thousands of women and newborns in project-supported facilities. After successful initial training, we help these healthcare providers maintain and improve their new level of competency through continuous mentoring, medical education, skills workshops, clinical audits, and information and communication technology (ICT).

PROFESSIONAL DEVELOPMENT

The program has provided competency-based training in CEmONC for non-physician AMOs and obstetric anesthesia training for nurse-midwives and clinical officers. The curriculum covers both theory and practical skills.

Continuing medical education (CME) entails highly focused and practical skills-building workshops conducted by specialist obstetricians, pediatricians and anesthesiologists. The workshops are about three days long and cover subjects such as neonatal resuscitation and vacuum extraction.

Mentoring is a central pillar of the program. Senior specialists have created an environment of close interaction, where team-based learning focuses on actual clinical scenarios in the facilities. On their regular visits, regional program officers who are consultant obstetrician/gynecologists spend one to three days in each WLF-supported facility to conduct team-based practical training, which includes guiding and closely supervising AMOs and nurse/midwives. This team-based approach to case management focuses on case studies, including emergency situations, that provide critical learning opportunities. Ongoing mentoring and support is provided primarily through the use of ICT.

ICT INNOVATIONS

WLF recognizes the potential of ICT in addressing some of the challenges in providing accessible, cost-effective, high-quality healthcare services. Since 2012, the program has developed and implemented a number of ICT innovations to help improve the quality of care in WLF-supported facilities, including weekly teleconferences, emergency call support, and e-learning.

Weekly teleconferences are used as virtual classrooms for discussing challenging obstetric cases encountered over the previous week. Healthcare providers in WLF-supported facilities, WLF consultant obstetrician/gynecologists, and senior anesthesiologists are routinely connected through toll-free mobile phones by way of a closed user group. The content of these teleconferences is documented and disseminated to the relevant stakeholders for action-oriented feedback.

In an emergency situation where further guidance or advice is needed, healthcare providers working in WLF-supported facilities can call senior obstetricians using toll-free mobile phones. This service is available 24 hours a day, every day. Occasionally, senior, experienced practitioners may travel to assist the facility in need.

WLF is also assisting with the implementation of Tanzania’s National e-Health Strategy (2013-2018), advocating e-health solutions and enabling healthcare providers to access continuing professional development through e-learning and digital resources. The e-learning platform developed for healthcare providers improves clinical decision-making skills needed to manage life-threatening obstetric emergencies. The new virtual classroom enables healthcare providers to access clinical instructions in lecture format, through educational videos and interactive online training modules.

MATERIAL SUPPORT

WLF has built and renovated operating theaters and delivery and post-partum wards, and has provided key equipment for CEmONC. Staff housing has been built at several program sites in order to retain health workers in rural settings, where highly skilled healthcare providers are scarce. The program also procures supplies and commodities for partner sites, particularly in cases of severe stock-outs.

Mentoring is a central pillar of the program: senior specialists offer team-based learning focused on actual clinical scenarios in the facilities.
**MONITORING AND EVALUATION**

The project conducts data collection and clinical auditing in order to assess the level of services provided, monitor service provision, and identify clinical issues requiring attention. Routine service statistics are collected on a monthly basis. Additional data is collected and analyzed on a quarterly basis to enable qualitative assessments in areas such as “near-misses,” cesarean section, CEmONC signal functions, and maternal and neonatal deaths. The findings are used by WLF to monitor the progress of clinical care, in supervision visits, and in CME.

**PARTNERSHIPS**

WLF develops and maintains a number of strategic partnerships to help facilitate its objective of improving maternal health in Tanzania.

WLF works closely with the Ministry of Health and Social Welfare, as well as district councils and regional authorities, to identify maternal health interventions that the government can absorb and sustain. WLF also supports the Ministry in its efforts to scale up CEmONC service delivery at health centers in other regions of Tanzania. WLF continues to build partnerships with regional and district authorities to address barriers to the availability of CEmONC service delivery in health centers.

WLF is providing technical support to EngenderHealth to expand CEmONC service delivery through new, upgraded facilities in Kigoma. WLF also works closely with the U.S. Centers for Disease Control and Prevention, which monitors and evaluates the WLF program.

In 2014, WLF joined the international White Ribbon Alliance in Tanzania and became one of the Alliance’s board members. The Alliance advocates for the reduction of maternal mortality through improving access and availability of skilled care at birth. Membership in this alliance enables WLF to be more involved in national advocacy efforts on maternal health.

**COMMUNICATION**

WLF developed a communication campaign, launched in Kigoma in October 2014, to help people make life-saving choices regarding pregnancy and childbirth. The Thamini Uhai campaign aimed to promote behavioral change in three key areas: deciding to deliver in a health facility rather than at home; taking active steps to plan for a facility birth; and seeking skilled care when danger signs of pregnancy and childbirth occur.

WLF has also advocated in the media for the training and deployment of additional skilled human resources to support maternal health, ensuring continuous and adequate supplies in health facilities, and securing sufficient budgets for maternal health service provision, among other priorities.
Mr. Ngoja (nurse anesthetist) at Mtimbira Health Center with a new operating table donated by WLF.
Our Vision

Sustainable maternal and neonatal care is available in all vulnerable communities in Tanzania, thereby eliminating maternal and neonatal mortality and morbidity.

Our Mission

To develop and promote accessible and sustainable comprehensive emergency obstetric and neonatal care (CEmONC) service delivery to vulnerable communities in Tanzania for the reduction of maternal and neonatal mortality to 193 per 100,000 live births and 19 per 1,000 live births, respectively, in targeted districts.
ACCOMPLISHMENTS

In 2014, the World Lung Foundation's Maternal Health Program built upon the achievements of previous years by delivering upon a number of significant goals.

I. STRATEGIC PLAN

The Maternal Health Program team developed a three-year strategic plan to inform the future direction of the program. With guidance and coordination from an experienced management consultant, WLF staff formulated a detailed plan for activities in 2015 through 2018 and made recommendations on how to improve the governance of the Tanzania program.

A major goal of the strategic plan is to increase investment of human and financial resources by government and other players to facilitate the adoption of a sustainable CEmONC model that will help to deliver reductions in maternal and neonatal mortality and morbidity.

Strategic priorities include: designing and installing sustainability measures for all 15 supported facilities and handing them over to government; continuing the relationship in implementation research; supportive supervision and mentoring; developing and piloting the sustainable CEmONC model in new facilities; promoting the national adoption and scaling up of sustainable CEmONC by the government and other key players post-2018; building a sustainable institution to advocate for the adoption and scaling up of sustainable CEmONC; leading innovation in maternal and neonatal care; and nurturing the strategic relationships from previous phases, laying the foundation for national roll-out and regional adoption of the model post-2018.

II. IMPROVING CLINICAL SKILLS

MENTORING AND SUPPORTIVE SUPERVISION

In 2014, improvements were made to the supervision and mentoring of healthcare providers in WLF-supported facilities, in order to enhance quality assurance and cost efficiency. Previously, supportive supervision was conducted monthly by a team of regional program officers and deputy regional program officers. These monthly visits were replaced by quarterly supportive supervision, conducted by a group that now includes a selected member from the Regional/ Council Health Management Team, as well as consultant anesthesiologists. In-person support and mentoring is now supplemented with information, communication and technology (ICT) solutions.

CONTINUING MEDICAL EDUCATION (CME) WORKSHOPS

The major CME topics highlighted in 2014 were neonatal resuscitation and obstetric anesthesia. A total of four workshops on neonatal resuscitation were conducted in the first quarter of 2014, two in Kigoma and one each in Pwani and Morogoro, accommodating approximately 50 AMOs and nurse-midwives working in WLF-supported facilities. In the second half of 2014, two workshops were conducted at St. Francis Hospital in Morogoro for 28 anesthetists working in WLF-supported facilities in Morogoro and Pwani.

INFORMATION, COMMUNICATION & TECHNOLOGY INNOVATIONS

Teleconferences: A total of 34 teleconferences were conducted in 2014, the majority chaired by WLF consultant Dr. Donald Mawalla, a senior obstetrician/gynecologist. More than 500 clinical cases were discussed among the participants. The facility recording the highest levels of participation in these calls was Mabamba Health Center in Kigoma, which participated in 80 percent of the teleconferences.

Emergency calls: In 2014, the emergency call system was expanded from a few trial facilities in Kigoma to all WLF-supported facilities. Five more obstetrician/gynecologists, including WLF’s deputy clinical director, were included in the emergency call roster. Around 70 emergency calls were received and attended by consultant obstetricians/gynecologists in 2014.

E-Learning: Two initial modules (on cesarean section and spinal anesthesia) were successfully developed in 2014 by the Tanzania Training Center for International Health, working closely with WLF experts. The sessions are hosted on a web-based e-learning platform, Moodle, which is linked by a web portal to the WLF Tanzania website.
To address the challenge of Internet connectivity in rural facilities, a Multi-Protocol Label Switching Virtual Private Network was installed in all WLF-supported facilities by Airtel Tanzania. This enables users in remote facilities to connect with the WLF e-learning application server through laptops. Wireless routers were also installed at the facilities to enable multiple users to gain access to the application.

**Educational films:** In collaboration with the Sinza Hospital Authority in Dar es Salaam, two educational films were produced in 2014, on the topics of cesarean delivery and spinal anesthesia. These films were produced in Kiswahili to provide instructions, developed by WLF’s clinical experts, to teach healthcare providers in remote CEmONC health centers about best practice surgical and anesthetic procedures.

### III. COMMUNICATION

In partnership with the government of Kigoma, WLF launched the Thamini Uhai (Value Life) mass media and community outreach campaign in October 2014.

The campaign’s objectives involved increasing the likelihood that pregnant women will: form an intention to deliver at a health facility; make a birth plan with their partners and families; and seek skilled care immediately in response to pregnancy danger signs. The campaign used the tagline *Okoa Mjamzito na Mtoto* (Save Pregnant Mother and Child), emphasizing the importance of protecting the lives of women and newborns.

This multi-channel campaign featured radio spots, outreach by community health workers, printed materials, outdoor media, social media, and earned media. Radio spots were aired on two local radio stations, covering all of Kigoma and several neighboring regions. In addition to the radio spots, one particular radio program focused on increasing the visibility of the campaign.

Thamini Uhai reached an estimated one million adults, representing 92 percent of adults in their reproductive years (aged between 15 and 50) in Kigoma.

WLF recruited and trained community health workers, one for each of the nine supported facilities in Kigoma, to conduct direct outreach with pregnant women. Interactions took place with women’s groups, drama groups, and money-lending groups in various locations, including health facilities on antenatal care days, marketplaces, water points, and in private households. These health workers also raised the campaign at meetings of community leaders and influencers. Other campaign materials and events included local drama productions and printed materials such as discussion cards, brochures and posters.

The post-campaign evaluation showed that Thamini Uhai reached an estimated one million adults, representing 92 percent of adults in their reproductive years (aged between 15 and 50) in Kigoma. Radio emerged as the primary medium driving campaign recall, as 87 percent of those who recalled the campaign recalled hearing it on the radio. This finding emphasizes the continued power of this mass medium in rural areas of Tanzania. The campaign was well-received by the community: It was rated as relevant, believable and persuasive by more than 90 percent of people who recalled the campaign. An evaluation study of pre- and post-campaign surveys showed that the campaign improved knowledge, attitudes and behavioral intentions. Specifically:

- Recognition of the warning signs of pregnancy increased—particularly recognition of bleeding and abdominal pain, which had been emphasized by the campaign.
- There was increased belief that: delivering in health facilities is the best way to protect the health of mother and child; birth planning is important; and men who encourage their pregnant partners to give birth in a facility are responsible men.
• Campaign awareness was associated with a nearly four-fold increase in intention to give birth in a medical facility.

These findings suggest that sustained communication activities could prompt changes in institutional delivery rates.

USE OF SOCIAL MEDIA TO PROMOTE THAMINI UHAI
WLF used Jamii Forums, a popular Tanzanian social media site, to promote Thamini Uhai and its messages. The team also established a Twitter account (@ThaminiUhai), a #ThaminiUhai hashtag, and a Facebook page. The campaign generated more than one million views across all social media channels—Jamii Forums, Fikra Pevu (an online magazine owned by Jamii Forums), Twitter and Facebook.

IV. INFRASTRUCTURE
BUILDINGS
WLF continued building staff houses, addressing a major need by helping to attract and retain staff in upgraded facilities. In 2014, WLF commenced building two staff houses, each capable of housing two families at Nguruka Health Center in Kigoma and Mlimba Health Center in Morogoro. The Nguruka one was nearly completed by end of 2014. One house was also renovated to accommodate staff in Mabamba.

EQUIPMENT FOR CEMONC
In 2014, WLF installed and repaired equipment in all WLF-supported facilities, including electrical suction machines, operating tables, vacuum extractors, cesarean section sets, blood pressure machines, laryngoscopes, oxygen concentrators, baby warmers, and autoclaves.

V. PARTNERSHIPS
In 2014, WLF continued building relationships with the government, with the objective of transitioning project activities and helping the government to implement the WLF model elsewhere in the country. WLF held meetings with key officials, including the Minister of Health and Social Welfare, Dr. Seif Rashid, and the Deputy Permanent Secretary at the Prime Minister's Office-Regional Administration and Local Government.

WLF was invited to share its innovations, successes and challenges at the first national telemedicine conference, in Bagamoyo in September 2014.

Dr. Deo Mtasiwa. During these meetings the government expressed appreciation for WLF's efforts and showed eagerness to continue using the WLF model once the program facilities are handed over.

WLF was one of a few NGOs invited to share its innovations, successes and challenges at the first national telemedicine conference, co-hosted by the Ministry of Health and Social Welfare and Ministry of Communication, Science and Technology in Bagamoyo in September 2014.

In October 2014, WLF was invited by the President's Office to attend a four-week planning meeting aimed at achieving significant progress in reproductive, maternal, neonatal and child health (RMNCH). The Big Results Now program is a government initiative, modeled after Malaysia's Big Fast approach, which aims to establish a strong and effective system to oversee, monitor and evaluate implementation of development plans. Big Results Now hinges on prioritization, detailed monitoring mechanisms, and accountability for performance. The meeting included a HealthCare Lab (the Lab) with four streams: human resources for health, health facility performance, health commodities, and RMNCH. WLF's position as the leading organization in the delivery of RMNCH services in rural settings was showcased in the Lab, and the WLF model and methods were featured throughout the Lab process.

Major initiatives proposed in the RMNCH stream were: CEmONC; basic emergency obstetric and neonatal care (BEmONC); strengthening blood transfusion services; use of community health workers to improve RMNCH services; multi-media community-based campaigns; and mobile health. These initiatives will be rolled out in the five regions most in need of improved maternal health provision: Kigoma, Simiyu, Geita, Mwanza and Mara. Implementing the CEmONC model includes interventions such as: construction or
renovation of maternity wings and operating theaters; installation of waste disposal systems, clean water systems and generators; knowledge and skill training for healthcare providers; equipping the facilities; supply of relevant medications; routine supportive supervision and mentoring; and a strengthened referral system. Of the Lab’s four streams, RMNCH received the highest budget allocation, with TZS 107 billion of a total TZS 185 billion (approximately 58 percent). The Big Results Now plan will be implemented for a three-year period from July 2015 to June 2018. Funding is expected to come from the government and development partners.

In December 2014, WLF pioneered and supported a technical meeting that brought together human resources experts from the eight district authorities in Kigoma to review and strengthen their human resources for health plans for 2015-2016. Participants discussed strategies for improving the quantity and quality of health workers for CEmONC, among other health areas, on a short- and long-term basis.
WLF CEO Peter Baldini (second from right), speaking during a meeting with the Minister of Health and Social Welfare, Dr. Seif Rashid (center) at the minister’s office in June 2014. Also attending were WLF Tanzania Country Director, Dr. Nguke Mwakatundu (far left) and Dr. Margaret Mhando, the Director of Curative Services at the ministry (far right).

President of the United Republic of Tanzania, HE Dr. Jakaya Mrisho Kikwete and First Lady Mama Salma Kikwete visited Mwaya Health Center on Aug. 20, 2014 to meet WLF representatives and Mwaya staff. Seated, from left to right: Hon. Joel Bendera, the Morogoro Regional Commissioner; the First Lady; Kelvin Maokola, WLF Senior ICT Technician; the President; Dr. Godfrey Mtei, the Morogoro Regional Medical Officer; and Dr. Sunday Dominico, WLF Deputy Clinical Director.

In October 2014, WLF participated in the planning meeting for the government’s Big Results Now initiative. WLF Deputy Clinical Director Dr. Sunday Dominico (seated, second from left) worked with other reproductive, maternal, neonatal and child health (RMNCH) partners in the HealthCare Lab to design interventions for RMNCH during the Big Results Now initiative period through 2018.

WLF CEO Peter Baldini (second from right), speaking during a meeting with the Minister of Health and Social Welfare, Dr. Seif Rashid (center) at the minister’s office in June 2014. Also attending were WLF Tanzania Country Director, Dr. Nguke Mwakatundu (far left) and Dr. Margaret Mhando, the Director of Curative Services at the ministry (far right).
WLF-supported facilities handled 26,055 deliveries in 2014, a 20 percent increase since 2011, and saved at least 596 women and 520 newborns with life-threatening complications.

MATERNAL LIVES SAVED
A total of 596 cases with life-threatening obstetric complications were successfully treated in WLF-supported facilities in 2014 (Figure 2). The complications included severe pre-eclampsia, eclampsia, antepartum hemorrhage, post-partum hemorrhage, ruptured uterus, and puerperal sepsis. Post-partum hemorrhage was a factor in the majority of these cases (38 percent), followed by eclampsia (22 percent). WLF intends to address the management of these complications in the future through CME workshops.

Figure 2: Obstetric complications successfully treated in 2014 (n=596)

Severe Pre-eclampsia: 23
Post-partum hemorrhage: 226
Puerperal sepsis: 49
Eclampsia: 131
Ruptured uterus: 83
Ante-partum hemorrhage: 84

NEONATAL LIVES SAVED
A total of 520 newborns with birth asphyxia underwent resuscitation with at least a bag and mask, in the second half of 2014 alone. Comparison with the preceding year is not possible as this indicator was not measured prior to July 2014.
VI. QUALITY OF CARE INDICATORS AND TRENDS (CONT.)

VACUUM EXTRACTION
A total of 399 deliveries were assisted by vacuum extraction in 2014, which gives a vacuum extraction rate (percentage of all deliveries assisted by vacuum extraction) of 1.5 percent (Figures 3 and 4). This number represented a 17 percent decline from the previous year, when the number of vacuum extractions had peaked following a series of skill-based workshops on the procedure (Figure 3). However, Pwani facilities reported an overall 30 percent increase in number of vacuum extractions in 2014. Mwaya Health Center reported the highest vacuum extraction rate (8.9 percent) and Kakonko the lowest (0.1 percent). Targeted on-site skill-based training has been planned for 2015 to offset the decline in vacuum extractions.

Figure 3: Annual trend in the number of vacuum extractions

Figure 4: Vacuum extraction rate (%) in 2014

CESAREAN SECTIONS
A total of 2,590 cesarean sections were performed in 2014 (Figure 5), giving an institutional cesarean section rate of 9.9 percent (the accepted normal range is 5 to 15 percent). The most reported indications for cesarean section were obstructed labor, poor progress of labor, fetal distress, and a failed trial of scar. The absolute number of cesarean sections performed in WLF-supported facilities increased by 19 percent compared with the previous year, although the annual cesarean section rate has remained relatively stable over the years. This is most likely due to strict clinical audits conducted by regional program officers, which focus on justifications and pre-, intra- and post-operative management of cesarean section cases. The number of cesarean sections had declined in 2013, and the number of vacuum extractions peaked in the same year.

Figure 5: Annual trend in the number of cesarean sections

Figure 6: Annual trend of referral cases out

REFERRALS
A total of 222 cases were referred from WLF-supported facilities to higher-level facilities in 2014. Pwani accounted for 34 percent of all referrals, despite attending just more than 10 percent of the caseload. Kibiti Health Center alone accounted for 32 percent of all referrals in 2014. The most common reason for referral was a lack of blood at the facilities, due to limited supply from the National Blood Transfusion Service. Nonetheless, the slowly decreasing number of referrals reflects continually increasing facility readiness and healthcare providers’ competence in managing various life-threatening obstetric emergencies (Figure 6).
VI. QUALITY OF CARE INDICATORS AND TRENDS (CONT.)

MATERNAL DEATHS
A total of 62 maternal deaths were reported in WLF-supported facilities in 2014, of which the majority (73 percent) occurred in hospitals. Four of the 10 health centers (Mlimba, Mabamba, Kibiti and Nyenge) registered no maternal deaths throughout the year. Nonetheless, the facility-based maternal mortality ratio of 243 per 100,000 live births in 2014 represents a continuing decline from 2013 (252) and 2012 (258).

Among the 62 maternal deaths in 2014, the leading causes were obstetric hemorrhage (12 cases, or 19 percent of the total), ruptured uterus (16 percent), puerperal sepsis (16 percent), and severe pre-eclampsia/eclampsia (13 percent). Indirect causes contributed to 15 percent of all deaths, while the cause was not established in 10 percent of maternal deaths, but thromboembolic phenomena were suspected from the clinical features (Figure 7).

**Figure 7: Causes of maternal deaths in 2014 (n=62)**

- Obstetric Hemorrhage: 12 cases
- Ruptured Uterus: 10 cases
- Puerperal Sepsis: 10 cases
- Severe Pre-eclampsia/Eclampsia: 8 cases
- Others: 5 cases
- Unknown: 6 cases
- Indirect causes: 9 cases
- Missing case notes: 2 cases

EARLY NEONATAL DEATHS
Program-supported facilities reported a total of 119 early neonatal deaths, representing a 6 percent decline from the previous year. Kigoma had a remarkable 23 percent decline in early neonatal deaths, compared to the preceding year. Mlimba Health Center reported zero neonatal deaths the entire year. The facility-based neonatal mortality rate per 1,000 live births decreased to 4.7 in 2014, compared to 5.6 in 2013 and 5.5 in 2012.
CHALLENGES

Structural issues and cultural norms within Tanzania mean that WLF faces several challenges in implementing the program. These include:

- Insufficient allocation of financial resources to comprehensive emergency obstetric and neonatal care (CEmONC) health centers; the funds allocated are similar to those of non-CEmONC health centers.
- Need to address both supply and demand for maternal health services: The program has been focused primarily on the third delay of maternal mortality, although the communication campaigns that began this year are beginning to address the other delays.
- Continued human resource shortages: Seven out of ten health centers have only one assistant medical officer (AMO) surgeon; three facilities have one anesthetist; and nearly all health centers have only one skilled nurse per shift.
- Tanzania’s low institutional delivery rate, which means that many women are still delivering at home.
- Continued delays in many women reaching facilities for obstetric care or delivery.
- Inadequate communication among health facilities, e.g. for referrals or during emergency situations.
- Widespread infrastructure issues: inadequate space in some maternity wards, renovations required for some operating theaters, and water supply shortages at some facilities.
- Common logistic problems, i.e. frequent stock-outs of medical supplies and medicines.
- During the rainy season some roads are impassable, making it impossible to reach certain facilities to meet supervision or other needs.

WLF continues to implement its maternal health program in spite of the above challenges, advocating for structural change as well as addressing clinical, behavioral and communication needs.
PRIORITY AREAS IN 2015

In order to achieve further improvements in maternal health in Tanzania, WLF aims to pursue the following strategies in 2015:

1. Continue to build partnerships and collaborate with central and local governments to build sustainable service delivery and wider implementation of the CEmONC model, with the aim of handing over program activities to the government. Key areas of engagement with the government will include:
   - Addressing the problem of resource allocation: maintaining support to the facilities while advocating for improved resource allocation by the districts (setting milestones with districts on sustaining program activities).
   - Addressing the human resources challenge: advocating at national, regional and district levels to increase the number of skilled healthcare providers in facilities, e.g. assistant medical officers (AMOs) and skilled nurses.
   - Supporting Kigoma region to organize Human Resources for Health workshops.

2. Facilitate increased availability of CEmONC service delivery in health centers and hospitals, and basic emergency obstetric and neonatal care (BEmONC) services in dispensaries. WLF seeks to continue working with local government authorities to strengthen service delivery in already supported facilities and to provide support to new facilities (dispensaries). Ways of strengthening service delivery will include:
   - Developing clinical apprenticeships in CEmONC for newly deployed AMOs in high-referral hospitals, to ensure acquisition of competencies for management of life-threatening obstetric complications.
   - Training new nurse/clinical officer anesthetists in facilities with only one anesthetist.
   - Providing training on BEmONC for clinical officers, nurse midwives, and selected medical attendants in WLF-supported facilities, to increase the number of skilled attendants.
   - Conducting continuing medical education (CME) workshops on selected topics as identified through routine supervision activities.
   - Supporting dispensaries with basic training on BEmONC, improving communication between health centers and dispensaries, and making supervisory visits to the select group of dispensaries on a quarterly basis.
   - Building strongly on the previous year’s successes by supporting more targeted mentoring, supportive supervision, clinical audits, and routine data collection.
   - Promoting and supporting more sustainable and cost-effective e-Health solutions in the program-supported sites. This will include portable Moodle (Poodle), emergency calls, and teleconferences.
3. Strengthen interventions outside facilities to increase demand for facilities’ services.

- Promote and support behavioral change through mass media (radio), interpersonal (community health workers, community events), and other communication channels (posters and billboards), with the aim of increasing facility deliveries and use of family planning.
- Support communication among communities and facilities (hospitals, health centers, and dispensaries); extend the mobile phone closed user group.
- Support community-based research to identify solutions to the first and second delays leading to maternal and neonatal mortality.
- Strengthen the relationship and increase trust among communities and health facilities.

4. Strengthen referral systems and improve access.

- Promote participation of communities in referring and transporting women to facilities in emergency situations.
- Identify potential improvements in transport to facilities, such as better management of existing motorized vehicles and exploring the use of locally owned, private vehicles for emergency transport.
WORLD LUNG FOUNDATION STAFF
Front line, from left

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WLF Consultants
The WLF team includes the following consultants, who have played a huge role in ensuring the success of the program during 2014. We thank them for their valuable contributions to date and look forward to working with them in 2015, as we continue to deliver our life-saving work in Tanzania; Prof. Jos Van Roosmalen, Prof. Senga Pemba, Dr. Donald Mawalla, Dr. Angelo Nyamtema, Dr. Richard Rumanyika, Dr. Angela Kairuki, Dr. Irene Kasiga, Dr. Calist Nzabuhakwa, Dr. Bigilimana Mapigano, Dr. Jonas Chagi, Dr. Omar Issa, Dr. Allan Shayo, Mr. Geoffrey Mwanyingili and Ms. Maria Sarungi-Tsehai.

Credits
Annual report written by WLF Tanzania staff including Dr. Ngue Mwakatundu, Dr. Sunday Dominico, Victoria Marijani and Fadhili Jamadini with assistance from WLF global staff including Jeffrey Hale, Stephen Hamill, Tracey Johnston, Mego Lien, Samantha Lobis, Sandra Mullin, Whitney Reitz, Karen Schmidt and Hongjin Yan.

Photos by Moiz Husein, Victoria Marijani, Kelvin Maokola and others.

Design by Benjamin Ojwang and Johnny Hsu.
Photos

ABOVE
Community health worker conducting health education during outreach for immunization.

LEFT
The WLF Tanzania staff held a retreat in December 2014 at Lushoto, Tanga.

Nurse Zawadi Kasunzu outside the labor ward at Kasulu District Hospital.

Neena Prasad (Bloomberg Philanthropies), Sandra Mullin (WLF), Peter Erichs (SIDA) and Feddy Mwanga (EngenderHealth) in Kigoma.
Computer training for health care providers in Kigoma.

Geoffrey Mwanyingili, WLF's equipment maintenance consultant, maintaining the borehole at Mtimbira Health Center, which was drilled with support from WLF.

Antenatal section of the labor ward at Ujiji Health Center

Equipment provided by WLF to Ujiji Health Center in Kigoma.
Helen Agerup of the Fondation H&B Agerup (left) met with WLF staff and partners at the office of the Rufiji District Medical Officer, Utete District Hospital, in September. WLF Clinical Director Dr. Sunday Dominico (second from left) and Pwani Deputy Regional Program Officer, Dr. Jonas Chagi, were present along with members of the Rufiji Council Health Management Team, including the District Medical Officer, District Nursing Officer, and District Reproductive and Child Health Coordinator, among others.

Maternal and child health partners for Kigoma region met in September 2014.

Nurse Anna Zacharia at Nguruka Health Center in Uvinza district.

Helen Agerup of the Fondation H&B Agerup (left) met with WLF staff and partners at the office of the Rufiji District Medical Officer, Utete District Hospital, in September. WLF Clinical Director Dr. Sunday Dominico (second from left) and Pwani Deputy Regional Program Officer, Dr. Jonas Chagi, were present along with members of the Rufiji Council Health Management Team, including the District Medical Officer, District Nursing Officer, and District Reproductive and Child Health Coordinator, among others.