ACCESSING SAFE DELIVERIES IN TANZANIA
FACT SHEET

Background information

With maternal mortality ratio at 556 per 100,000 live births, and the neonatal mortality rate at 19 per 1,000 live births (TDHS, 2015), the government targets to expand the number of health centers (HCs) providing comprehensive emergency obstetric and neonatal care (CEmONC) services from 12% in 2015 to 50% by 2020. As part of the Innovating for Maternal and Child Health in Africa (IMCHA) initiative, the Tanzanian Training Center for International Health and Dalhousie University in Canada are implementing a research project called Accessing Safe Deliveries in Tanzania (ASDIT). The goal of this project is to reduce maternal and neonatal morbidity and mortality in Tanzania by means of enhancing safe deliveries through supporting comprehensive emergency obstetric and neonatal care services at the health center level. From 2016 to 2019 the project introduced and strengthened CEmONC services in five health centers located in underserved rural areas in Morogoro region using associate clinicians.

Project sites

Gairo HC in Gairo, Kibati and Melela HCs in Mvomero, Ngerengere HC in rural Morogoro and St. Joseph HC in Kilosa district. Mlimba and Mkamba HCs in Kilombero district did not receive any intervention and were considered as controls.

Interventions

1 Face-to-face training in CEmONC and anaesthesia

Forty two associate clinicians from five health centers were trained in teams for three months in CEmONC and anaesthesia. Assistant medical officers were trained in CEmONC and clinical officers and nurse/ midwives (diploma) were trained in anaesthesia and care of the sick and premature newborn.

2 eLearning program

Six eLearning modules were developed and uploaded on stand-alone computers in all supported health centers to reinforce CEmONC and anaesthetic skills and knowledge. These computers did not require continuous internet access since this was not available in most of the health centers. In early 2019 the modules were also uploaded on the care providers' mobile phones through a mobile app called Moodle.

3 Supportive supervision and mentorship

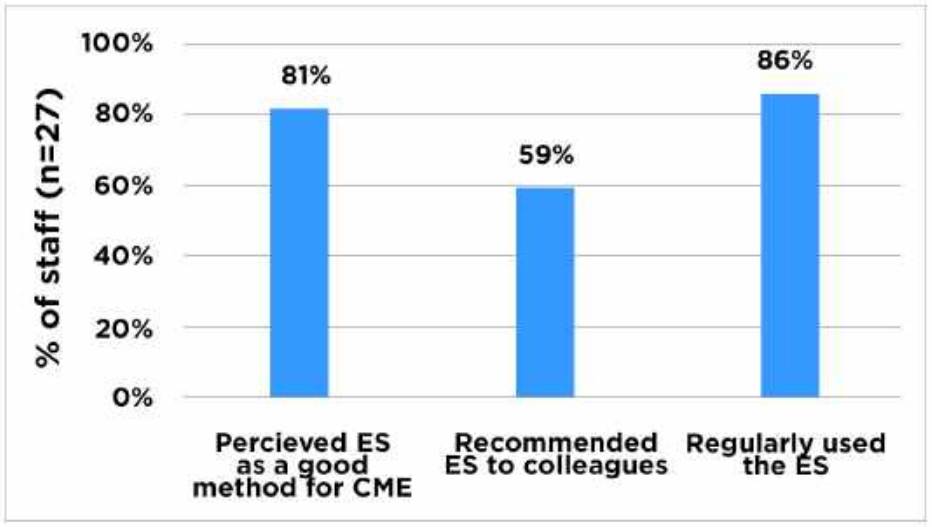
Supportive supervision and mentorship were done every quarter and included clinical audits for C-sections, maternal and deaths and morbidities, fresh stillbirths, early neonatal deaths and anaesthesia.

Key achievements

1 Utilization of eLearning for quality health care

Twenty seven (27) health care providers from the five health centers were registered for the eLearning system. Of these 96% were able to identify and use features within the platform (site news, chat room, resources), navigated through the sessions and perform quiz within the platform at least with average efficiency. The perceived ease of use of eLearning, their attitude toward using eLearning and their intension to use the system was considerably very high (Figure 1). These findings suggest the potential of eLearning strategies for strengthening knowledge and skills of health care providers for provision of quality health care in rural Tanzania

Figure 1. Health workers' attitude toward the eLearning system, intension to use and actual use of the system.

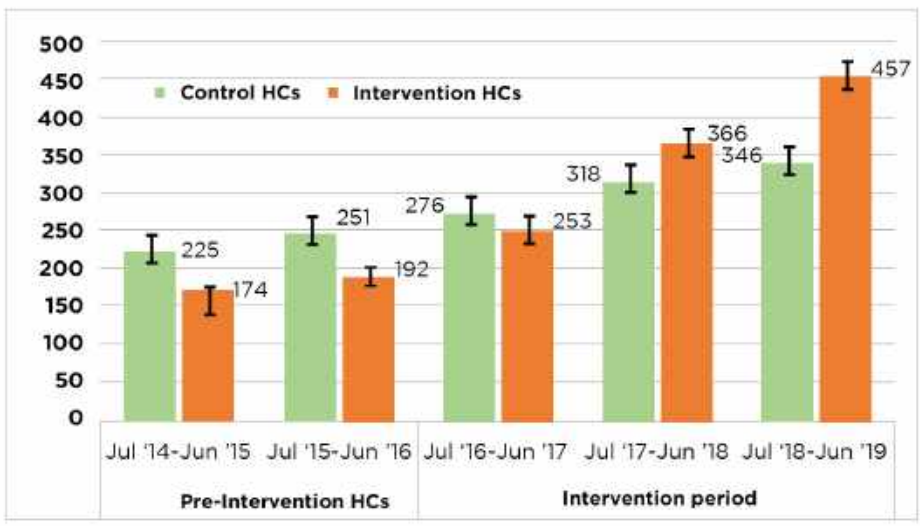


Note: ES = eLearning system; CME = continuous medical eductaion

2 Provision of CEmONC services at health centres

All five health centres are now providing CEmNOC services as planned. Only two of these HCs provided CEmONC services before the intervention. The quality of CEmONC services was strengthened in the two facilities that already provided the services before the intervention. The intervention HCs experienced huge increase in the number of women coming for delivery care after they began providing CS services and strengthening the services (Figure 2).

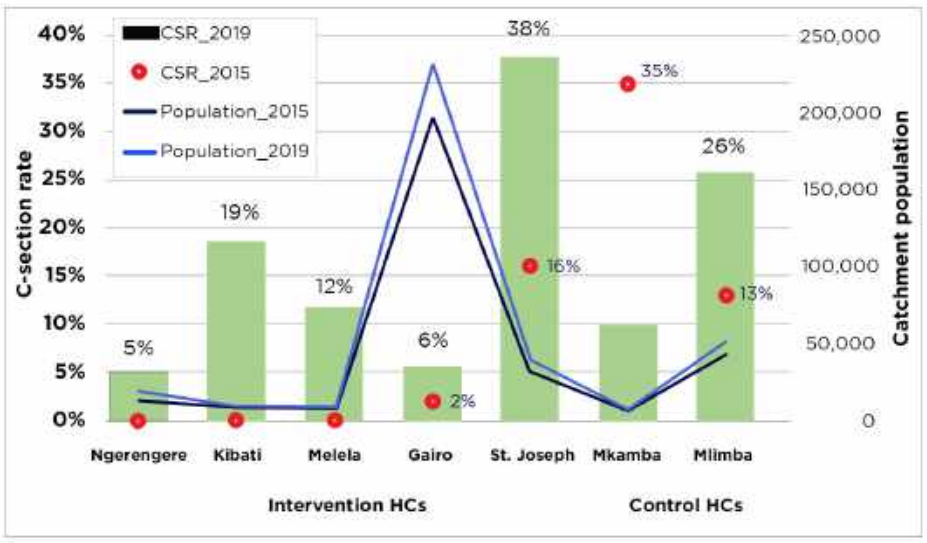
Figure 2. The mean monthly health facility deliveries before and during the intervention period.



3 The caesarean sections as a proportion of all births in the intervention and control catchment populations

The overall numbers of CS in the intervention and control HCs during the intervention period (July 2016 to June 2019) were 2,179 and 969 respectively. The population based CS rates in the three intervention health centres that never had CS services before, ranged between 5% and 19% in 2019, the year three of the intervention (Figure 3).

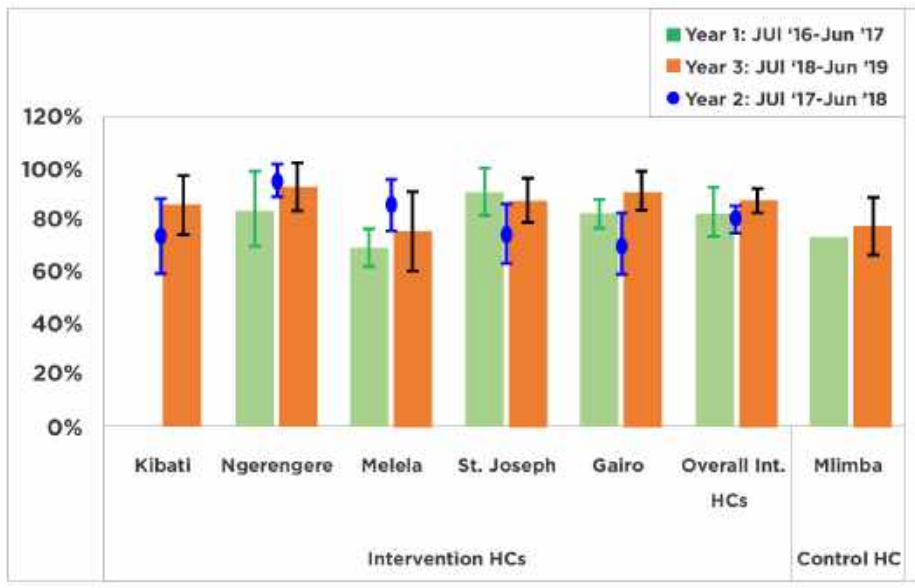
Figure 3. Caesarean sections as a proportion of all birth in the intervention and control catchment populations



4 Safety of C-sections at the health centres

During the intervention period the overall proportions of justified CS, ranged between 80% and 88% in the intervention HCs, and between 74% and 78% in the control HCs (Figure 3). Out of the 2,179 CS that were performed during the intervention period in the intervention facilities a total of five women died from immediate complications of obstetric surgery and two from complications of anaesthesia. The risks of a woman dying from complications of caesarean section and anaesthesia in these health centres was 2.3 and 1 per 1,000 caesarean deliveries respectively

Figure 4. Proportions of CS performed with justifiable indications in the intervention and control health centres



5 Referral rates to hospitals because of pregnancy & childbirth complications

Introduction/ strengthening of CEmONC in supported HCs led to significant reduction of referral rate in interventional HCs from 5.4% (229 out of 4,266) at baseline to 3.5% (191 out of 5,492 women) in the year three. The referral rate increased in control group from 0.8% (48 out of 5,678) at baseline to 1.7% (69 out of 4,041) in year three of the intervention period

6 Maternal Morbidity and Death

Although the number of women with obstetric complications increased significantly in the intervention facilities, the proportion of women who died from complications of pregnancy and child birth (case fatality rate) did not change. The proportion decreased slightly from 5.2% to 3.7% in the intervention group and from 4.8% to 2% in the control group (Table 1).

Table 1. Case fatality rate before and after the intervention in the control and intervention health centres

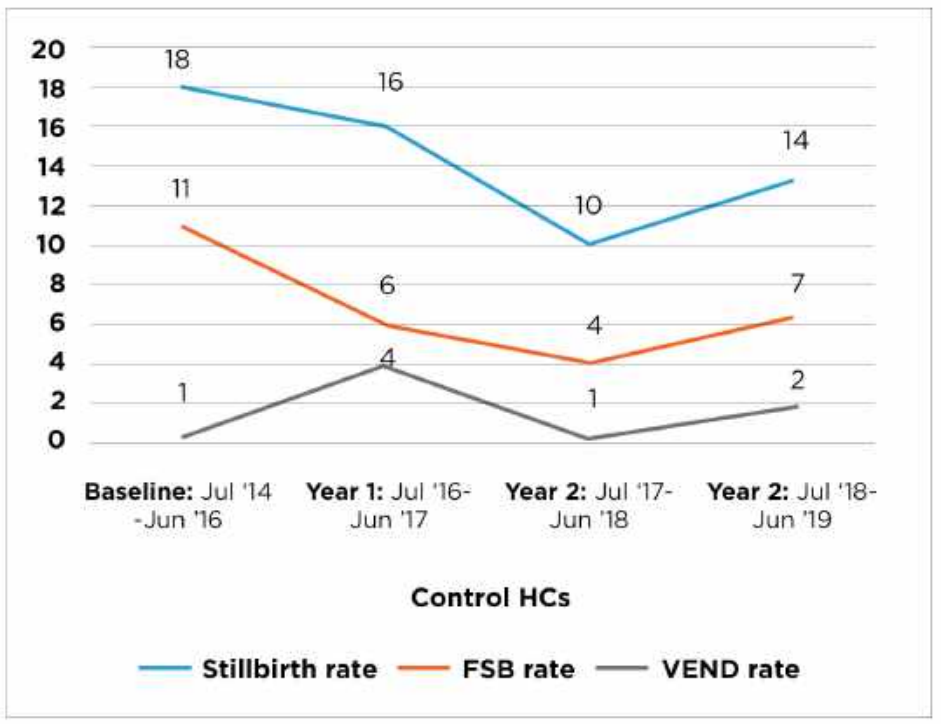
	Maternal deaths	Maternal morbidities	Case fatality rates	95% CI
Intervention HCs				
Baseline	7	135	5.2%	1.4% - 8.9%
Intervention period	22	597	3.7%	2.2% - 5.2%
Control HCs				
Baseline	6	125	4.8%	1.1% - 8.5%
Intervention period	5	295	1.7%	0.2% - 3.2%

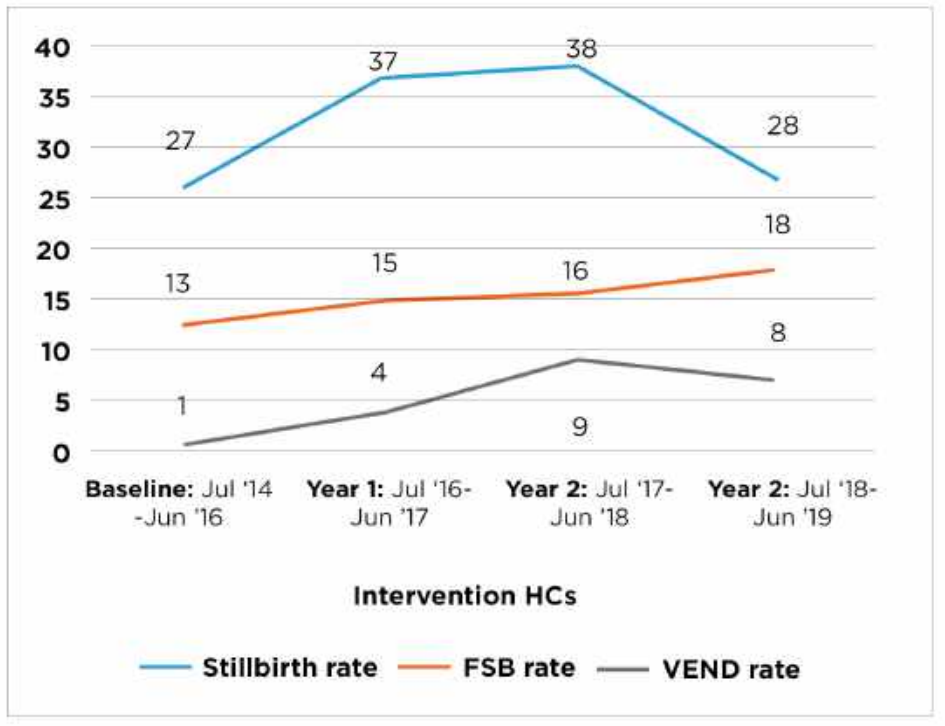
Note: Baseline = Jul 2014 – June 2016; and intervention period = Jul 2016 – June 2019

7 Perinatal Deaths

While total stillbirth rate decreased in the control group from 18 per 1,000 births at baseline to 14 by year three of the intervention, it did not change in the intervention group (Fig. 5). Following introduction of CEmONC services, the facilities started to receive more women with obstetric complications from the surrounding lower facilities. Some had severely distressed fetuses and intrauterine fetal deaths that had already occurred by the time women were received. The low stillbirth rate at the baseline could also have been due to poor documentation before the intervention as detected during our data collection.

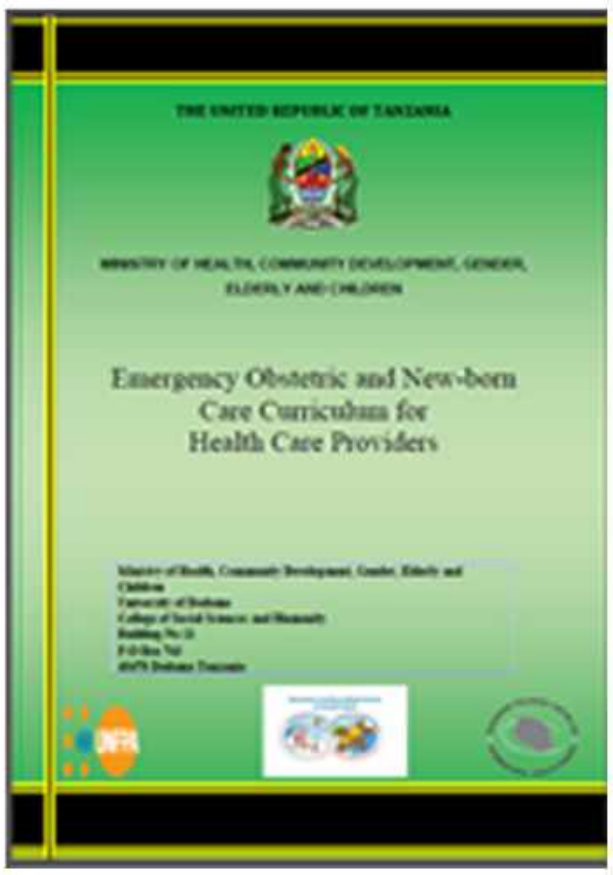
Figure 5. Stillbirth and very early neonatal death rates before and after intervention in the control and intervention health centers.





8 Uptake of ADSIT project innovations

In collaboration with the ASDIT project team, the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) developed a three month competency-based educational training curriculum for CEmONC program, and a six month curriculum for anaesthesia training program.



9 Conclusion and recommendations

The three month training program for associate clinicians in maternal and newborn emergency care (including surgery and anaesthesia) is a safe, effective and an immediate solution that is currently saving lives of mothers and babies in rural Tanzania. Given the critical shortage of anaesthetists at present, as well as a shortage of training positions, it will take several years before trained physician anaesthetists can staff every remote healthcare facility. Until then, associate clinicians will remain the backbone and hope of anaesthesia in rural areas. Since greater numbers are needed, this education and mentoring program can be used to meet the demand for maternal and newborn emergency services and anaesthesia in remote areas.

Acknowledgments

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