

Review Article

Maternal, neonatal and children's health in Sub-Saharan East Africa

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Summary

The Czech model for reducing maternal and neonatal mortality for countries in sub-Saharan East Africa was created on the basis of the Archdiocesan Charity Prague project for a specific region-subcounty Buikwe, Diocese of Lugazi, Mukono Region in Uganda, a region with about 30,000 inhabitants. The aim of the first phase of the project was to build a new hospital, equip it completely for obstetric and surgical operations from the Czech Republic, ensure its activities with Czech and Slovak doctors experts, junior Ugandan doctors and Ugandan medical staff, provide obstetric training for villagers, ensure connections with villages and possibility of fast transport and urgent solution of all acute pathologies in the hospital, capable of 24-hour surgical readiness. In the second phase of the project, a school for midwifery was to be established. This second part of the project has not yet been implemented. The project could serve as an example and guide for similar humanitarian activities in other regions of Uganda and other countries in equatorial Africa.

Project realization

The first phase of the project included the construction of a hospital, the provision of acute health care in the area and the current medical and preventive program of the hospital. The idea for the project originated in 2002, when the project received a grant from the Ministry of Health of the Czech Republic and was implemented under the name Uganda-Czech Buikwe Hospital and Midwife School in cooperation with the Diocese of Lugazi. The construction of the hospital was carried out in 2005-2006 [1], the activity was started in February 2007. In 2008, the hospital was donated by the Archdiocesan Charity of Prague to the Diocese of Lugazi. In 2010, the hospital was accredited by the Ministry of Health of Uganda and is currently funded by a third of the Czech Archdiocesan Charity Prague, the State of Uganda and patient payments. The hospital is now operated by the Diocese of Lugazi with Czech financial support under the name St. Charles Lwanga Hospital in Buikwe. The hospital consists of 5 atrium-connected buildings and a separate HIV clinic, a drug store and 2 buildings for medical staff. The hospital has a fully equipped operating and delivery room, 87 beds in 4 wards (obstetrics and gynecology, pediatric, general and surgical). Outpatient care is provided by 3 general outpatient clinics and 8 specialized outpatient clinics, including an HIV clinic. There are currently 92 employees: 3 doctors, 3 medics with completed bachelor's studies, 23 nurses, 7 midwives, 15

assistant nurses, anesthesiologist, dental assistant, radiologist, 4 laboratory technicians and support staff. The basic requirement of the project was thus met - the construction of a new, fully functional hospital with a 24-hour ability to deal with acute obstetric and surgical cases.

Continuing education, acute obstetric care in the region

The training of hospital paramedics and health attendants of the surrounding villages, the connection of the villages with the hospital by mobile phones and the transport of acute cases by the hospital car were only partially implemented. It includes training of village health attendants by the hospital, preventive examinations in the villages by a mobile clinic and the hospital's 24-hour ability to deal with life-threatening complications in obstetrics. The objective results of the activities Uganda-Czech Buikwe Hospital were published in Czech medical journals a few years ago [2-4].

Medical and preventive programs of the hospital:

a) The acute medical care for complicated pregnancies, deliveries and obstetrical emergencies

The health care would be available to inhabitants of the area around the above hospital and would also reach future patients directly in the field.

More Information

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Submitted: 20 May 2020

Approved: 28 May 2020

Published: 29 May 2020

How to cite this article: Donát J. Maternal, neonatal and children's health in Sub-Saharan East Africa. Clin J Obstet Gynecol. 2020; 3: 043-045.

DOI: 10.29328/journal.cjog.1001049

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From the very outset of the project, we want to pay particularly attention to urgent obstetrical cases such as obstructed labors, preterm labors, septic abortions, preeclampsia, uncontrollable bleeding, and infections after cesarean section and fetal distress. Such a focus will soon give us some ideas about the characteristics of urgent care.

b) Provide appropriate treatment of malaria during pregnancies and reduce its complications for mothers and newborns.

One of major problems in the developing countries is preterm labors, which are secondary to malaria. During pregnancy women are more susceptible to new malarial infection, especially cerebral malaria. Of growing importance is the interaction between malaria and HIV infection.

Prevention and treatment of malaria are essential components of antenatal care in endemic areas, but require special considerations during pregnancy.

Achieving the safest treatment of malaria during pregnancy and reducing the incidence of low birth weight among newborns is a way of preventing severe and fatal cases of malaria in children.

c) Preventing mother-to-child transmission of HIV.

HIV remains one of the major causes of infant and maternal mortality in the countries of Sub-Saharan Africa. Already 15 years ago, McIntyre published data on more than 600,000 children infected each year, 1,700 a day, as the most frequently observed infection in this region [5]. Mother to child transmission of HIV continues to be major cause of infant morbidity and mortality. Intrapartum and postpartum nevirapin-based regimens have been introduced in many settings. The latest news from U.S Department of Health and Human Services (DHHS) to minimize the risk of mother-to-child HIV transmission recommends the use of Retrovir (AZT, zidovudine) plus Efavir (3TC, lamivudine) of first-line antiretroviral therapy (ART). Recommendations for the prevention of HIV transmission are given by DHHS for pregnancy, childbirth and breastfeeding [6]. Women who need antiretroviral therapy for their own health should receive it in pregnancy, and access for pregnant women needs to expand urgently. Improving access to treatment will reduce maternal morbidity and mortality and have beneficial effect on child survival.

d) Treatment of acute health complications, especially in children (acute surgical diseases as appendicitis or incarcerated hernias) and acute complications of infectious diseases as malaria, AIDS, TBC and so on.

e) Prevention of infectious diseases of children by vaccination.

The second phase of the project - the establishment of a

school for midwives - failed to be implemented, although the hospital project included teaching facilities, in the Czech Republic there was interest in specialist volunteer positions and a publication was published as a textbook [7]. The reason for the failure was the negative attitude of the Archdiocesan Charity Prague and the highest representatives of the Catholic Church in the Czech Republic to support this educational project. Above all, there was a lack of goodwill and probably fear of high financial spending. However, the project would require not only finances, but above all an honest effort to help, courage and personal commitment.

Discussion

The maternal mortality rate (MMR) in east equatorial Africa was enormously high in the years of implementation of the Czech hospital. In 2000 it was 642 deaths per 100,000 livebirths in Uganda, in 2008 it was reduced to 352 (for comparison in the Czech Republic it was 7 in 2000 and 2008), in Kenya 413, in Tanzania 449, in Zambia 603 and absolutely the highest in Malawi 1,140 [8]. With the exception of Malawi, the MMR has improved significantly in some East African countries over the last 10 years. Thus, Kenya reports number 332 in 2017 and Zambia 183 in 2018 [9]. In Uganda, MMR 368 per 100,000 livebirths [10], is reported in 2015, which is still more than 60 times higher than in the Czech Republic. The number of Ugandan women using antenatal care or labor services remains especially in the countryside very low, is restricted mainly by lack of obstetrical specialists, midwives, financial support and transport in rural or poor municipal areas. In general, these statistics reflect women's powerlessness in making any decisions about their health, their lack of information about their condition and the risk of complications, and even the verbal abuse of health care workers who lack professional training. Thus, correct information of women must play a central role in health promotion programs if maternal mortality is to be reduced.

The most common transverse maternal deaths are bleeding in 24%, sepsis in 24% and non-progressive childbirth and uterine rupture in 20%, complications of miscarriage in 18%. The remaining deaths are eclampsia, malaria, HIV infection and other diseases. [11]. The numbers are similar in all East African countries. They show that about 60% of women could be saved by rapid transport and quick intervention in a hospital with 24-hour emergency service. In poor areas of Sub-Saharan Africa health care for women and for the pregnant women pre- and postpartum is practically no existing. In rural Africa complicated pregnancies and home deliveries attended by nonprofessionals result in many preterm deaths and postpartum complications, resulting from obstructive labor, uterine rupture, hemorrhage, preeclampsia, infections and sepsis, septic abortions, HIV/AIDS, malaria, tuberculosis and COVID-19 infections in the future time as well. The death of women as a consequence of nonprofessional assistance, mostly by traditional birth attendants (TBA) or a lack helps



during delivery is not uncommon. The critical shortage of health professionals in sub-Saharan Africa has long been commented on and its causes are known [12]. The current situation does not provide effective interventions to achieve long-term changes. The key initial actions should be to provide the population with information about important health issues and preventive measures and the management of obstetrical emergencies and focus on the burdens as that are the consequence of HIV/AIDS and malaria or COVID-19 infection. Along with MMR, there are critical numbers in neonatal mortality. Even more critical situation is in mortality and morbidity of children before the age of 5 years. According to UNICEF, 1 child in 11 will die within 5 years [13]. Most of them are newborns after premature or complicated births.

No health information is available to the population living in poor areas of east equatorial Africa, including facts about AIDS, its prevention, and many other aspects of a healthier and more productive life. Many children have never been seen by a physician because their parents or local guardians do not have the funds to travel to the nearest hospital or health center. The most common causes of children death are neonatal disorders, pneumonia, diarrheal diseases, malaria and AIDS.

The aim of the Czech project was to show the possibility of an easy way to improve acute obstetric and neonatal care in rural Africa and to provide people with the poorest areas of Africa with qualified health care. Journey simple but difficult, extremely financially and humanly demanding, but bringing joy from healthy mothers and healthy newborns.

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