

**Enhancing human resources  
for maternal survival:  
task shifting from physicians  
to non-physicians**

Staffan Bergström

Averting Maternal Death and Disability Program (AMDD)  
Columbia university, NY

**The formidable challenge:**

**20,000 daily deaths  
due to maternal ill-health,  
pregnancy complications  
and poor care at birth**

**The magnitude of the problem of pregnancy-associated deaths:**

**Four million stillbirths are directly caused by maternal disease and poor delivery care**

**The magnitude of the problem of pregnancy-associated deaths:**

**Three million neonatal deaths are directly caused by maternal disease and poor delivery care:**

- preterm births (1 million)**
- asphyxia (1 million)**
- neonatal infections (1 million)**

**The magnitude of the problem of pregnancy-associated deaths:**

**In addition to these 7 million deaths there are half a million maternal deaths, in total 7.5 million deaths associated with poor maternal care**

**Current research projects between Karolinska inst (IHCAR) and Columbia university (AMDD\* program):**

**”Assessment of emergency obstetrical care provided by assistant medical officers trained for surgery in Mozambique, Tanzania, Malawi, Burkina Faso and Zambia”**

**\*Averting Maternal Death and Disability**

**Various countries have tried to address this problem by establishing different categories of "non-physician clinicians".**

**Let us look at four of them, Mozambique, Malawi, Tanzania and Zambia.**

**Mozambique: "técnicos de cirurgia"**

**Malawi: "clinical officers"**

**Tanzania: "assistant medical officers"**

**Zambia: "licentate medical practitioners"**

**”Técnico de cirurgia”  
corresponds to a surgically trained  
assistant medical officer**

**A comparative study of  
caesarean deliveries by assistant  
medical officers and  
obstetricians in Mozambique**

**Caetano Pereira , Antonio Bugalho,  
Staffan Bergström, Fernando Vaz, Manuel Cotiro**

**Brit J Obst Gyn 1996;103:508-512**

**2071 caesarean deliveries  
in Maputo Central Hospital:**

**958 by "tecnicos de cirurgia"  
1113 by specialists (obst/gyn)**

**No clinically significant  
differences in postoperative  
outcome (morbidity or  
mortality)**

# **Training medical assistants for surgery**

**Fernando Vaz, Staffan Bergström, Maria da Luz  
Vaz, José Langa and Antonio Bugalho**

**Bulletin of the WHO 1999;77:688-691.**

**Summary of one year (1995)  
elective and emergency surgical  
and obstetrical interventions  
(n = 10,258) among 14 “técnicos de  
cirurgia” in Mozambique.**

**Total postoperative mortality rate  
among 10,258 patients operated  
upon by "técnicos de cirugía":**

**Emergency surgery: 0.4%**

**Elective surgery: 0.1%**

**How much work do they manage?**

# **Meeting the need for emergency obstetrical care in Mozambique:**

**Work performance and work histories of medical  
doctors and assistant medical officers trained for  
surgery.**

**Caetano Pereira, Amelia Cumbi, Raimundo Malalane,  
Fernando Vaz , Colin McCord,  
Alberta Bacci , Staffan Bergström**

**British Journal of Obstetrics and Gyn, 2007;114:1530–1533.**

## **MOZAMBIQUE:**

**We carried out an inventory of all district hospitals in the country during one year.**

**Of all:**

- Caesarean sections**
- Obstetric hysterectomies**
- Laparotomies for ectopic pregnancy**

**92% were carried out by non-physicians**

**Postoperative outcome of  
caesarean sections and other  
major emergency obstetric  
surgery by clinical officers and  
medical officers in Malawi**

**Garvey Chilopora, Caetano Pereira,  
Francis Kamwendo, Agnes Chimbiri,  
Eddie Malunga, Staffan Bergström**

**Human Resources for Health 2007, 5:17**

**Data from 2,131 consecutive  
obstetric surgeries in 38 district  
hospitals in Malawi were  
collected prospectively**

**Clinical officers performed:**

**90% of all caesarean sections,**

**Postoperative outcomes were almost identical in the two groups in terms of maternal general condition**

**Caesarean section and other  
abdominal surgical interventions by  
assistant medical officers in  
Tanzania**

**Caetano Pereira, Godfrey Mbaruku,  
Staffan Bergström, Colin McCord**

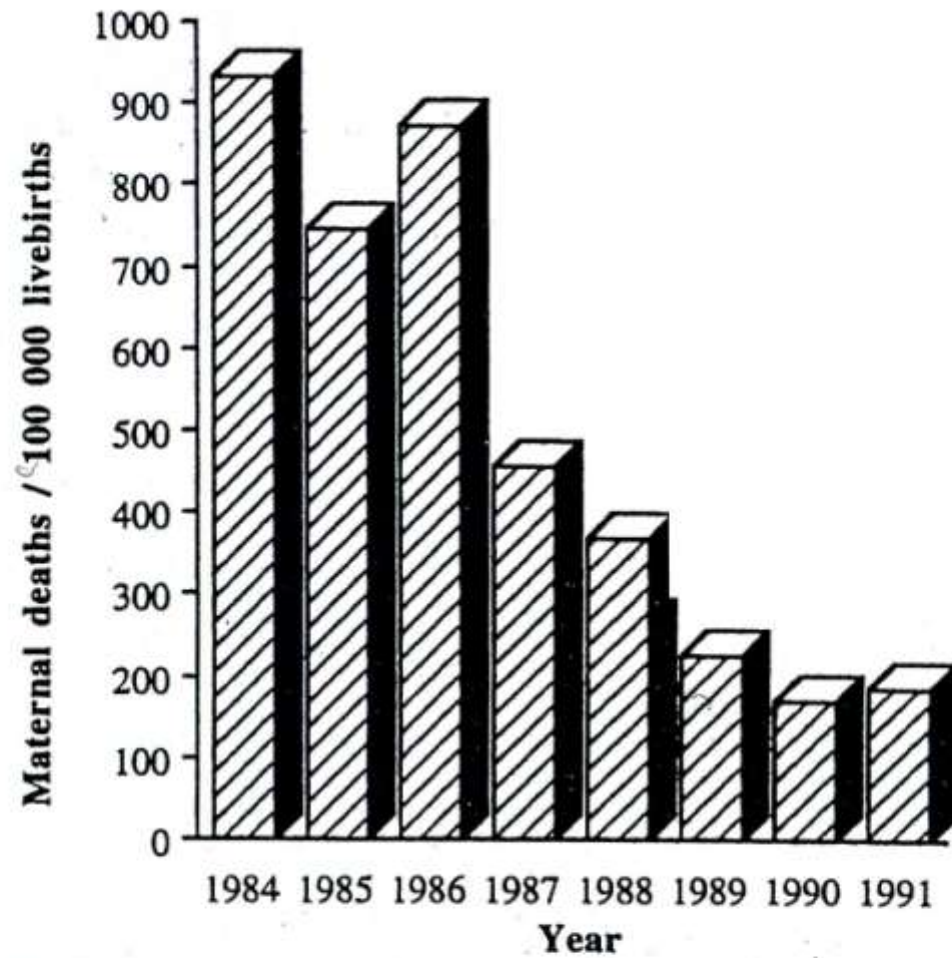
## **TANZANIA:**

**In two regions (Kigoma and Mwanza, pop 4.6 mill) the same inventory was made in all 16 hospitals during one year.**

**Of all:**

- Caesarean sections**
- Obstetric hysterectomies**
- Laparotomies for ectopic pregnancy**

**84% were carried out by non-physicians  
(assistant medical officers)**



**Figure 1.** Development of registered maternal deaths per 100 000 livebirths at the Kigoma Regional Hospital, Tanzania 1984-1991. The intervention programme was launched in 1987.

**The crucial question remains:**

**How many are staying on at  
district hospitals?**

# **Meeting the need for emergency obstetrical care in Mozambique:**

**Work performance and work histories of medical  
doctors and assistant medical officers trained for  
surgery.**

**Caetano Pereira, Amelia Cumbi, Raimundo Malalane,  
Fernando Vaz , Colin McCord,  
Alberta Bacci , Staffan Bergström**

**British Journal of Obstetrics and Gyn, 2007;114:1530–1533.**

# Retention of “non-physician clinicians” in district hospitals in Mozambique

- All graduated medical doctors and all “técnicos de cirurgia” are assigned to district hospitals
- We followed all “técnicos de cirurgia” from 3 graduating classes and found that, 7 years after graduation, 88% were still in district hospitals
- Of medical doctors from same graduating years none was in a district hospital at 7 years after graduation

## **Conclusion:**

**Non-physician clinicians (NPCs) in Mozambique, Malawi and Tanzania carry most of the burden of life-saving emergency obstetric care, particularly caesarean sections, with adequate skills in the countries investigated.**



**Each country has  
the maternal mortality  
its government deserves**