

# **Using Tecnicos de Cirurgia to deliver Emergency Obstetric Care in Mozambique: Safety, Retention and Cost**

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*20 years with surgically trained assistant medical officers (tecnicos cirurgia) saving mother's lives in Mozambique*



# Mozambique

Area: 799.390 Km<sup>2</sup>

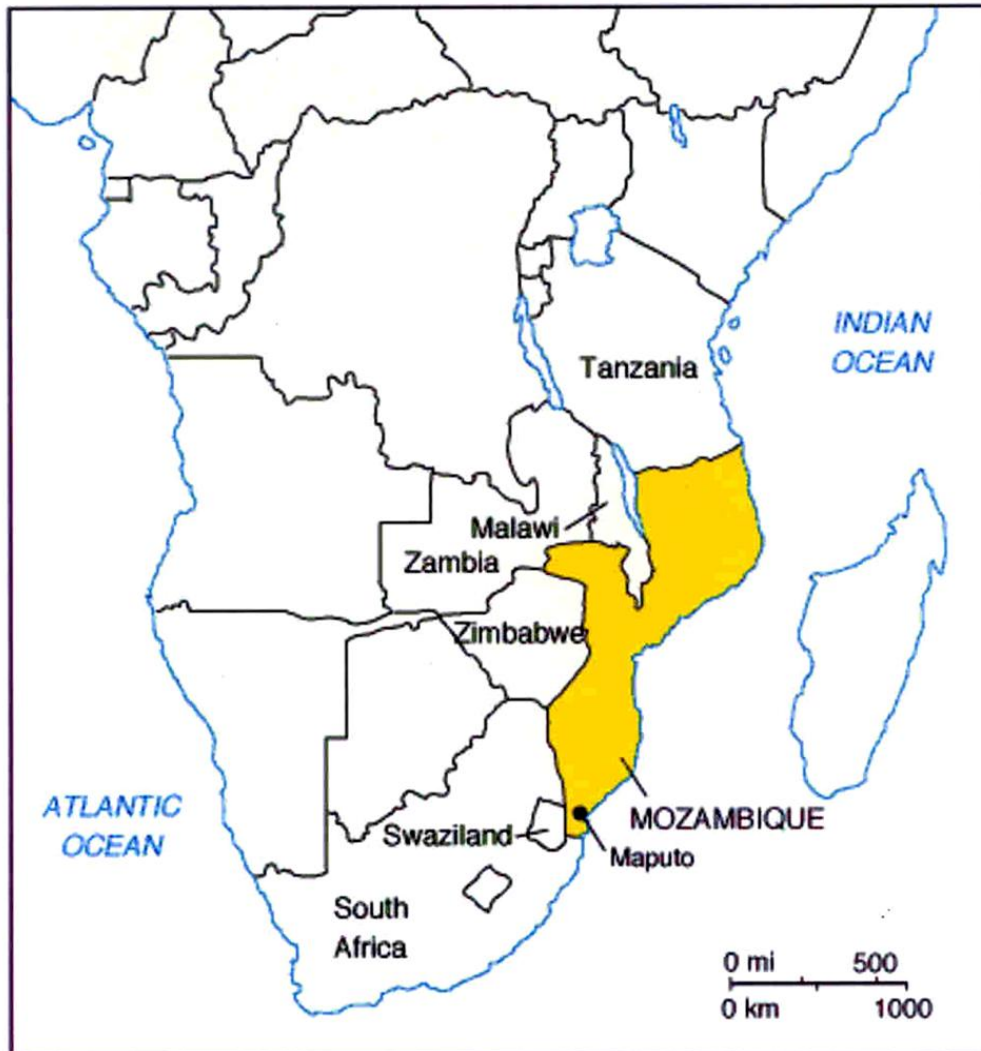
Location: East coast of Southern Africa

Population in 2004:  
18.9 millions

Maternal mortality ratio:  
408/100,000 live births

Infant mortality rate:  
48/1,000 live births

Absolute poverty index:  
54%



# History of Tecnicos de cirurgia in Mozambique

*After independence in 1975:*

- Only 80 Mozambican doctors left for a nation of 14,000,000 people
- With a limited pool of:
  - qualified applicants for medical training
  - senior trainers.

# History of Tecnicos de cirurgia

## *Policy Response in 1975*

A new training policy was adopted with an intensive programme to train health workers, particularly nurses, midwives, and assistant medical officers “técnicos de medicina” to take the place of doctors in many roles.

# History of Tecnicos de cirurgia

*After 1980 following a civil war over ten years:*

- Mozambican health system weakened especially in rural areas
- Significant unmet need for care of obstetric emergencies and war casualties.

# History of Tecnicos de cirurgia

## *Policy Response in 1980*

- Ministry of Health began training of selected “técnicos de medicina” to become assistant medical officers with special skills in surgery – the “técnicos de cirurgia” (TCs)
- The first cohort of these mid-level providers was admitted for training in 1984.

# Training of TCs

- Trainees have two years of clinical surgical training at the Central Hospital in Maputo, followed by one year “internship” with qualified Surgeons and Obstetricians at provincial hospital.
- Main focus was on emergency obstetric care and trauma

What is the evidence over the  
past 20 years?

# Técnicos are key part of Government Policy

Training of técnicos is considered a priority for the Mozambican Ministry of Health because they help maintain the health system and constitute the backbone of emergency surgical care in Mozambique – particularly in rural hospitals

# Current situation of técnicos

- Seventy - five técnicos have been trained and have been assigned to different peripheral hospitals in the country, mainly rural hospitals .
- Outside the three central hospitals (that serve 10% of the population), técnicos now constitute the backbone of emergency surgical care in Mozambique for 90% of the population.

# Técnicos are safe and effective

One study in 1996 assessed the characteristics of the técnicos' surgical activities and their outcomes:

No clinically significant difference in postoperative outcomes between 978 caesarean deliveries performed by técnicos and 1,113 caesarean deliveries carried out by obstetricians.

# Técnicos perform a wide range of major surgery

In an assessment of 10,258 surgical operations carried out exclusively by técnicos, procedures performed include:

- Caesarean sections and obstetric hysterectomies,
- craniotomies,
- bowel resections and colostomies
- skin transplants,
- splenectomies and
- war surgery

# Técnicos perform a wide range of major surgery

70% were emergency interventions.

Postoperative mortality was 0.1% for elective interventions and 0.4% for emergency interventions performed by técnicos.

# Técnicos expand access to EmOC

- Técnicos perform 92% of major surgical interventions in obstetrics at district hospital level

# Técnicos' quality of care widely accepted

A study assessing perceptions of the standard of care provided by the técnicos, found that 90% of doctors , including surgeons, obstetricians, traumatologists, and other health workers rated highly the care provided by the técnicos

# Técnicos are well retained in the district hospitals

A study reviewing retention rates of técnicos compared to doctors (graduating in 1987, 1988, 1996) revealed that after seven years following graduation:

## Técnicos (n=34)

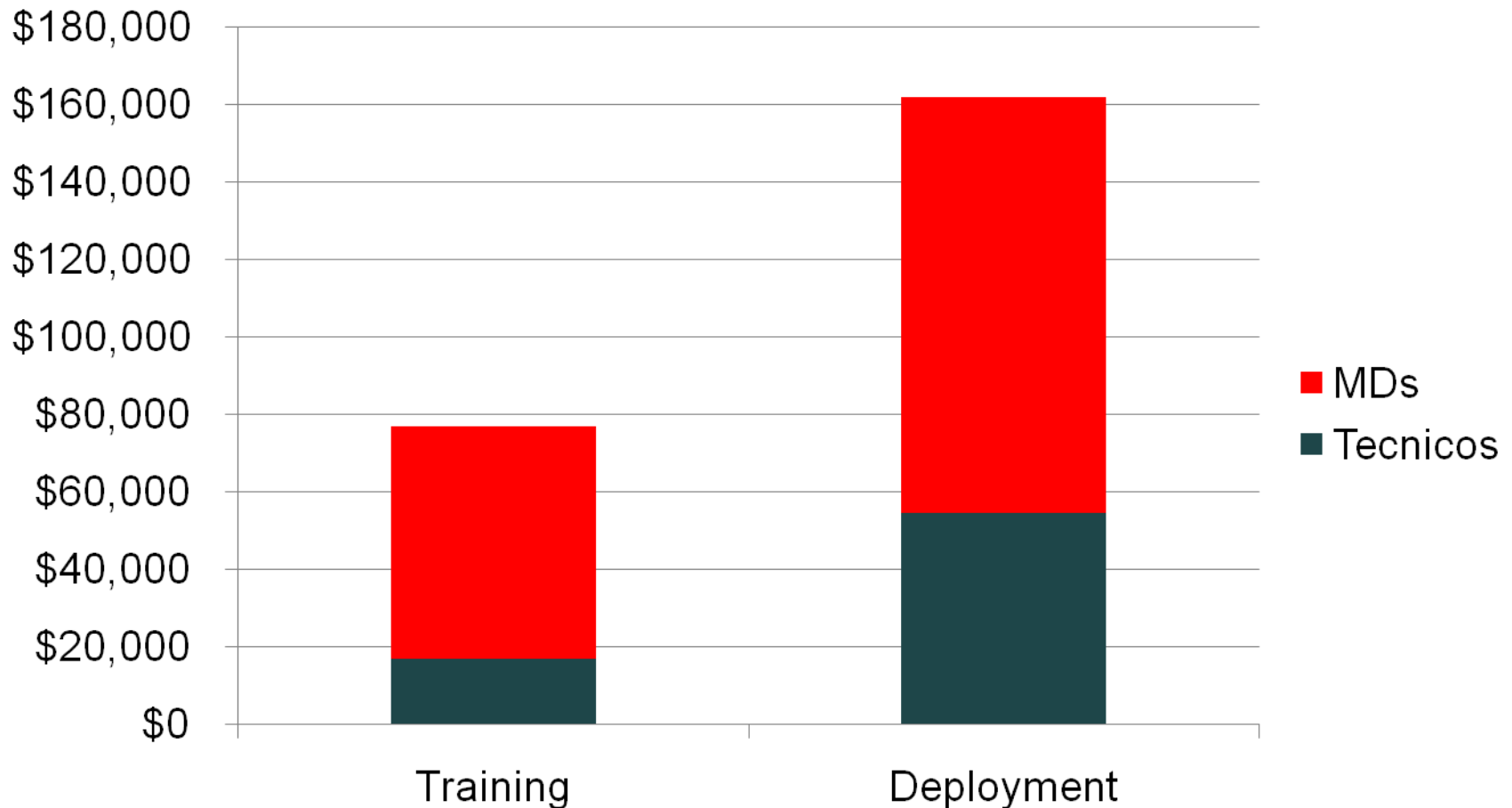
- 88% remain in district hospitals at seven years after graduation

## Doctors (n=59)

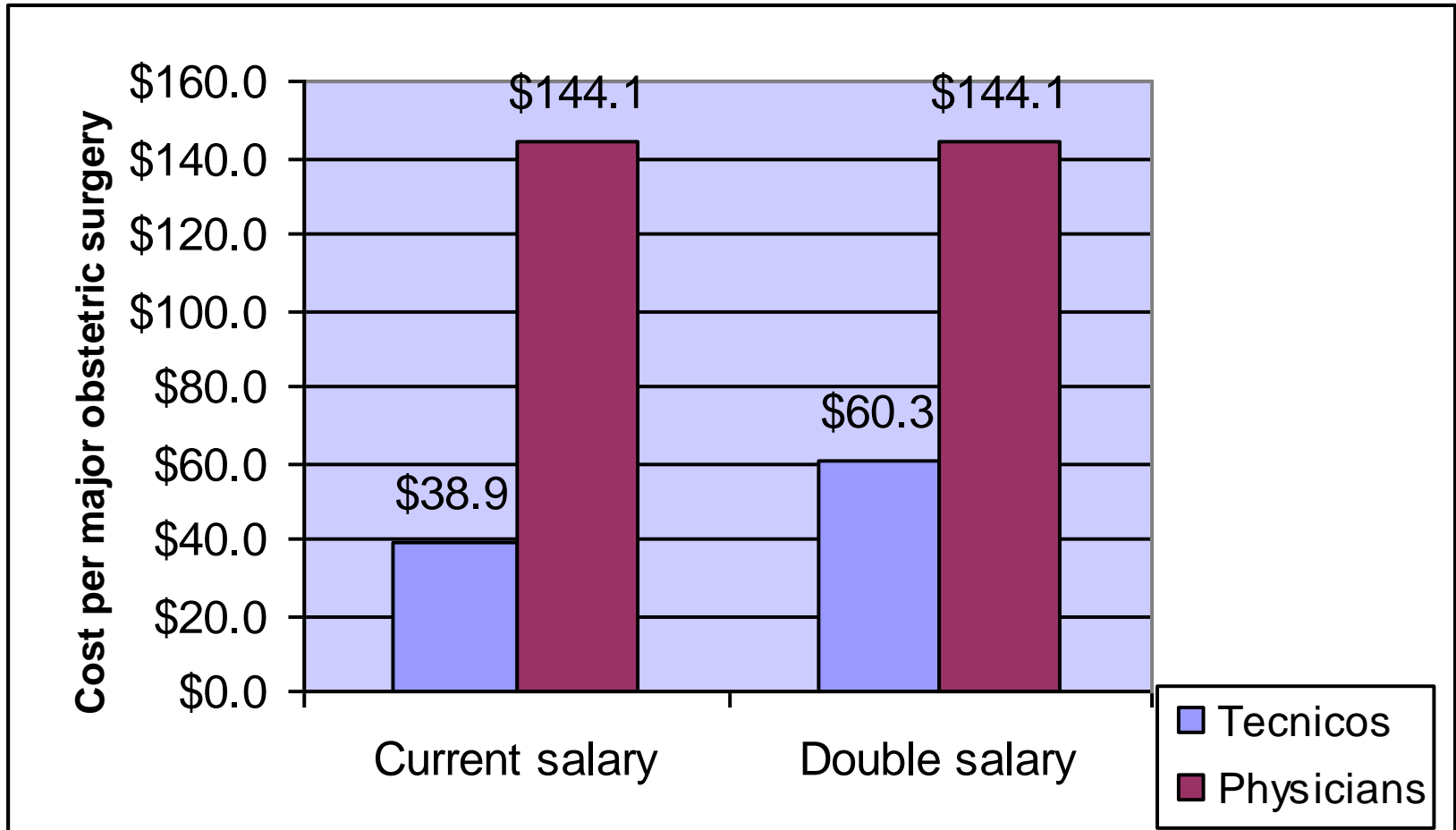
- There was not a single doctor there at seven years after graduation

# Técnicos are cost-effective

Average total deployment and training cost over a 30 year career



# Career cost-effectiveness ratios (30 years) for técnicos de cirurgia and doctors at current salaries and at double salary for técnicos



# Difficulties faced by TCs

- Some conflict with inexperienced young doctors
- Poor working conditions
- High work loads
- Lack of regular supervision

# Difficulties faced by TCs

This will require attention to:

- Increasing motivation of técnicos through better working conditions and improved and adequate salaries.
- Training of young doctors in surgery and better preparation to lead a multi-professional team to reduce potential conflict.

# Response from the Government

- Creation of High Institute of Health Science in 2003 for training of this sort of cadres. The degree is bachelor of surgery.
- Increasing motivation among TCs through better working conditions and improved and adequate salaries.

# Response from the Government

- Recommendation to university and provincial directorate of health to train the young doctors in emergencies (surgery and obstetrics) and in better preparation to lead a multi-professional team to reduce potential conflict.

## In conclusion:

- Técnicos de cirurgia do most of emergency obstetric surgery in Mozambique, especially in rural and district hospitals, and retention rates are high
- Obstetric surgery including Caesarean sections, and other surgical emergencies can be provided with good quality even in remote areas where there are no doctors.
- Training and deployment of técnicos is less expensive than for doctors

## In conclusion:

- When doctors are not available, técnicos provide a pragmatic and safe solution to avoid unnecessary maternal deaths and complications of deliveries like VVF and fetal deaths.
- Even where doctors are available, mid-level providers such as técnicos de cirurgia are complementary to the health team working to expand access to emergency and life saving care.

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**Thank you**