

# POLICY **Brief**

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Ministry of Health

## **Improving Quality of Care: The Key to Ending Preventable Maternal and Neonatal Mortality**

**Insights from the Kenya Harmonized Health Facility Assessment 2018**

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### **Executive Statement**

- The major causes of maternal complications in Kenya is haemorrhage (52%) and obstructed labour (28%) which can all be managed by ensuring availability of Basic Emergency Obstetric and Newborn Care (BEmONC) and Comprehensive Emergency Obstetric and Newborn Care (CEmONC) services
- Availability of all BEmONC tracer items in facilities carrying out deliveries is low hence low capacity to manage maternal complications
- Facilities self-reporting to provide BEmONC and CEmONC services is high but the quality of these services assessed by the comprehensiveness of service and availability of all required tracer items like commodities and equipment to provide these services are lacking.
- There is need to implement and enforce maternal and newborn quality of care standards to ensure the facilities are equipped as per their level of norms and standards to perform BEmONC and CEmONC services
- Implement supervision, monitoring and evaluation mechanisms to ensure that facilities meant to be offering BEmONC & CEmONC services are always continuously able and ready to offer these services.
- Strengthen the national blood transfusion services to be able to forecast and meet the blood supply needs of the country while empowering counties to be able to carry out blood donation drives.

## KEY MESSAGES

- Despite increasing skilled Birth Attendance in Health facilities, Maternal mortality rates largely remain unchanged
- Only 12% of facilities offering delivery services offer all the 7 BEmONC signal functions
- Only a third of primary hospitals are able to offer all 7 BEmONC signal functions but only 10% had all the required tracer items
- 8 in 10 secondary and tertiary hospitals offered all 7 BEmONC signal functions but only a third had all BEmONC Tracer items
- Only a quarter of all hospitals offering CEmONC services had all the 9 CEmONC signal functions available
- 1 in 5 of secondary and tertiary hospitals had all the CEmONC tracer items but virtually no public primary hospitals (1%) had all the CEmONC tracer items
- Six out of ten CEmONC hospitals have an inadequate blood supply despite hemorrhage accounting for half of the maternal complications
- Cross matching is only available in about half of CEmONC facilities

## Introduction

### Problem Statement

The Government of Kenya has made great investments aimed at reducing maternal and neonatal deaths. These have largely been aimed at increase in coverage of facility-based services which include increased contraceptive use to reduce unwanted pregnancies, increase antenatal care and increase skilled deliveries. Despite these investments and increasing coverage, the expected reduction on maternal and neonatal deaths has not been realized (Table 1).

Evidence from other countries has shown focus on increasing ANC and skilled birth attendance coverage to reduce maternal mortality is important but not exclusively sufficient in reducing maternal mortality. Facility birth alone, in a setting with low facility capability and provider skill, does not confer any survival benefit for women or babies. Encouraging women to deliver in facilities that are unable to safely manage routine deliveries and complications might actually cause harm and be unethical<sup>1</sup>. Increased utilization of the health services including skilled birth attendance has to be backed with adequate inputs like sufficient equipment, commodities, skilled workers to ensure optimal quality of care is delivered<sup>1</sup>. In Kenya, most of the deliveries and hence maternal deaths are now taking place in the facilities but increase in skilled birth attendance has not had a significant impact in reduction of maternal mortality<sup>2</sup>.

### Maternal and Neonatal Death Trends

Maternal mortality ratio is a measure of maternal deaths per 100,000 live births. Neonatal mortality rate is a measure of new born deaths from birth to 28 days of life. About 75% of neonatal deaths occur in the first week of life and can be averted through effective and timely emergency obstetric and new born care given during and after delivery<sup>3</sup>. Ending of preventable maternal and neonatal deaths has been a key focus of most health systems with global commitments, funding and interventions geared towards this.

Table 1 shows slow reduction of maternal mortality by 12 % from 2000 to 2015 against the expected 75% millennium development goal 5.

**Table 1: Kenya Progress in Achievement of Maternal and Neonatal Outcome and Impact Indicators:**

Achievements in Reduction of Maternal and Neonatal Deaths						
	NMR (per1000)	U5MR (per 1000)	MMR (per 100,000)	SBA coverage	4th ANC coverage	CPR (All methods)
2003	33	115	414	40%	52%	39%
2009	31	74	448	44%	47%	46%
2014	22	52	362	62%	58%	58%
Change	-33%	-55%	-12%	+55%	+12%	+49%

Source : KDHS 2003, 2009, 2014(MOH, 2014)

Reduction of neonatal mortality has also been slow over the 15 years with a decline of only 33%.

### Why Reduce Maternal and Neonatal Mortality?

Kenya is committed to achieving the social development goals (SDGs) to be achieved by 2030 which includes reduction of maternal deaths to less than 70 per 100 000 live births, neonatal mortalities to less than 12 per 1000 live births and under-5 mortalities to at least as low as 25 per 1000 live births.

Death of a mother negatively impacts health, social and economic outcomes of the family and children. Children growing up without the mother are more likely to die within their first year of life, and are also more likely to suffer from malnutrition resulting in stunting<sup>4</sup>. In homes where the mother has died, there is loss of income if the mother was carrying out an income generating activity. The children may have delays in school entry and drop out of school to take up labor to generate income and/or carry out caregiver roles to younger siblings. The lack of education also consequently contributes to reduced economic development for the country. The female children are more likely to end up in early marriage to alleviate financial pressures on the family. Both school dropout and early marriage tend to renew the cycle of poverty for the next generation<sup>5</sup>. The loss of a mother also results in both the immediate and long-term economic shocks of maternal death only add to the vulnerability of poor households who already face financial uncertainty and seldom have the institutionalized social protection<sup>6</sup>.

Reduction in neonatal mortality is also important to allow all newborns live out their social and economic potential in their families and societies.

### Top Causes of Maternal and Neonatal Deaths in Kenya and Appropriate Interventions

Maternal and newborn care services need to target timely management of the major causes of maternal complication and ultimately deaths in Kenya. These are hemorrhage 52% (35% post-partum, 17% antepartum), obstructed labor (28%) and Eclampsia (14%) (KHIS). These maternal complications also contribute to asphyxia in the newborn which is the leading cause of neonatal deaths in Kenya (31.6%)<sup>7</sup>. Improving access to emergency obstetric and newborn care is an effective strategy for the reduction of maternal and infant mortality.

To reduce maternal and neonatal mortality, WHO, UNICEF, and UNFPA jointly recommend having at least five basic emergency obstetric care facilities (including one comprehensive facility) for every 500,000 population to immediately manage any obstetric and newborn emergencies. Basic emergency obstetric care (BEmONC) includes capacity to provide all these seven signal functions in table 2. Comprehensive emergency obstetric care (CEmONC) in addition to the 7 BEmONC signal functions include caesarian section and blood transfusion.



**Table 2: Basic and Comprehensive Emergency Obstetric Signal Functions**

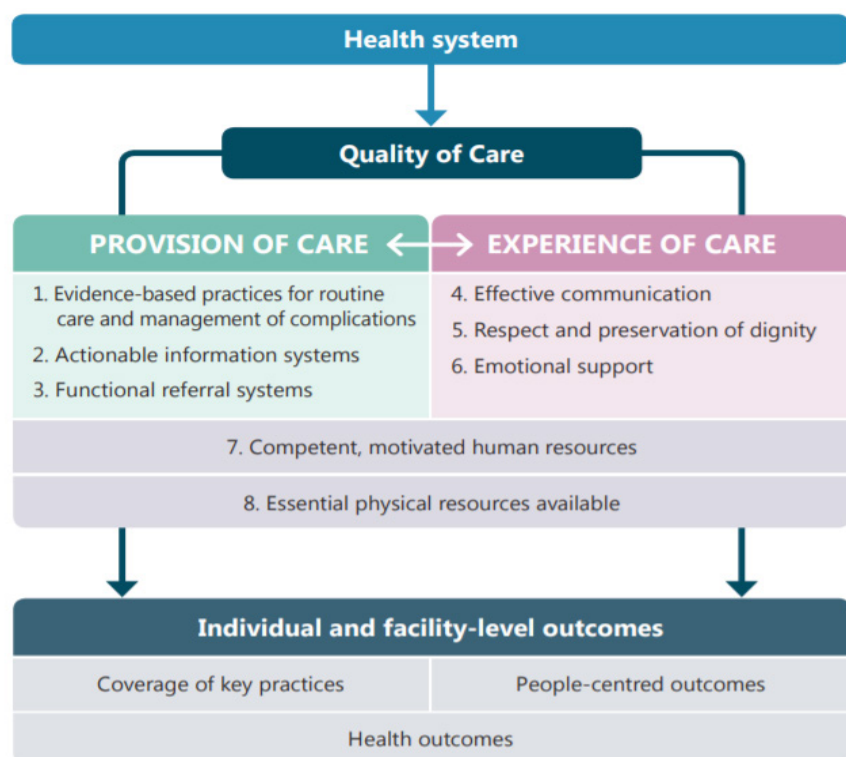
Complication	% cause of maternal complications	BEmONC Signal Function to Manage Complication
Antepartum Hemorrhage and postpartum hemorrhage	52%	1. Parenteral administration of oxytocics 2. Manual removal of placenta 3. Manual removal of retained products of conception
Obstructed labor	28%	4. Assisted vaginal delivery,
Eclampsia	14%	5. Parenteral administration of anticonvulsants,
sepsis	3%	6. Parenteral administration of antibiotics
Neonatal Asphyxia	32%	7. neonatal resuscitation.
Complication		CEmONC Signal Function to Manage Complication
All the above		8. Cesarean section
All the above		9. Blood Transfusion

WHO recommends focus on improving the quality of care of maternal and newborn services to further reduce maternal and neonatal mortality, targeting a 50% reduction by the year 2022<sup>8</sup>. The WHO definition of quality of care is “the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care must be safe, effective, timely, efficient, equitable and people-centered.”

The WHO quality of care framework recommends that good quality of care is achieved by use of 8 key pillars as shown in figure 19. This policy brief focuses on assessment use of evidence best practice for routine care and management of complications as per the KHFA findings on the availability of Basic and Comprehensive Emergency Obstetric and New Born Care. The availability of all the 7 BEmONC and 2 CEmONC signal functions as shown in table 2 is critical in managing any obstetric or newborn emergency. The availability of all tracer items can therefore be used as a proxy measure for the quality of care offered. A mother coming in for an emergency C/S could lose her life due to missing only 1 tracer item e.g. lack of blood for transfusion or oxygen.

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This policy brief therefore targets health managers and aims to demonstrate the need to move beyond increasing service coverage indicators to improving the quality of care in our facilities to reduce maternal and neonatal mortalities by ensuring availability of all BEmONC and CEmONC services. “The success and value of UHC depends on its ability to provide quality services to all people, everywhere. Further, resilient health services require quality as a foundation.



**Figure 1: The WHO Quality of Care Framework**

There is an urgent need to place quality care at the center of country, regional and global action for reduction of maternal and neonatal mortality.”<sup>10</sup>

## Methodology

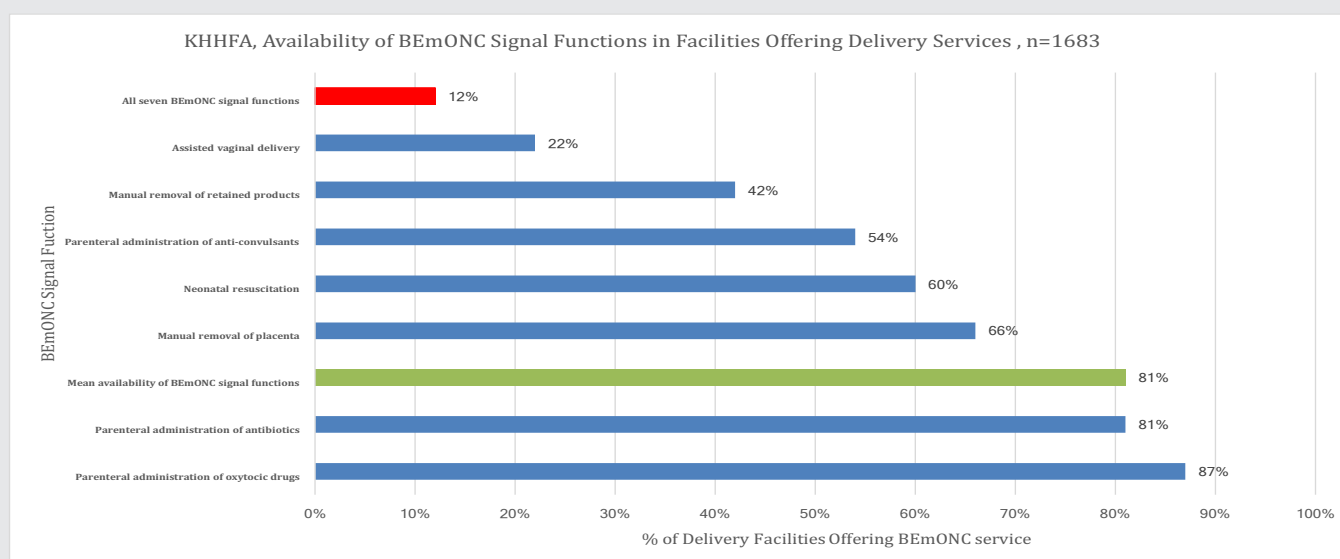
This policy brief uses findings from the Kenya Harmonized Health Facilities Assessment (KHFA) 2018, as well as evidence from review on documents such as Annual Health Sector Performance Report (2018/19) and the joint health facilities assessment reports. Publications on maternal and new born health were also used to collaborate the findings. The KHFA assessment entailed a comprehensive study of availability and readiness of health facilities in Kenya to provide services using a modular approach. The modules applied included specific service availability under which RMCAH was assessed. Service availability was collected by asking if a facility offers a specific service. Readiness to offer the service was only assessed in facilities which recorded availability of the service. Readiness was gauged by observing presence of key tracer items identified. The survey population included 2,980 facilities with representation across counties, ownership levels and facility types.

## Findings & Discussion

### BEmONC Services

- The KHFA showed that half of facilities samples offered delivery services. Most Level 3 and above offered delivery services as expected. 52% of dispensaries offer delivery services whereas they are only expected to provide emergency delivery services when a mother comes in late stages of labor.
- The availability of BEmONC facilities in Kenya (self-reported) is 6.6 per 500,000 population which is above the recommended target of five basic emergency obstetric care facilities (including one comprehensive facility) for every 500,000 population<sup>11</sup>
- Only 12% of these facilities offering delivery services reported to offer all the 7 BEmONC signal functions.
- 8 in 10 secondary and tertiary hospitals offered all 7 BEmONC signal functions. But only a third had all BEmONC Tracer items
- Capacity to offer all 7 BEmONC functions was low in the primary hospitals with only a third being able to offer all 7 signal functions and only 10% having all BEmONC tracer items. This shows low quality of delivery services especially in primary hospitals (level 4) where most deliveries take place in Kenya (Kenya Health Information System 2020).

The Figure 2 shows the availability of the Basic Emergency Obstetric and Newborn care services (BEmONC) that should be available in all facilities that offer delivery services which in Kenya is from the health centers to the referral hospitals. All the signal functions are focused to management of the major causes of maternal mortality.



**Figure 2 Availability of BEmONC Signal Functions in Facilities Offering Delivery Services**

## Availability of Specific BEmONC Services to Manage Specific Obstetric and Neonatal Complications

### a) Post-partum Hemorrhage

Hemorrhage is the leading cause of maternal death with post-partum hemorrhage accounting for most maternal deaths (35%). Postpartum hemorrhage can be caused by several conditions<sup>12</sup> summarized in table 2 paired to the appropriate BEmONC intervention availability as per the KHFA findings.

**Table 1 Comparison of Causes of PPH and Facility Readiness to Manage PPH**

Causes of Post-partum Hemorrhage (PPH)		Availability of PPH Management Measures in facilities conducting Deliveries (KHFA 2018)	
Cause	Incidence	BEmONC Intervention	Availability
Uterine atony	70%	Parenteral administration of oxytocin	87%
Trauma	20%	N/A	
Retained tissue	10%	Manual removal of placenta	66%
		Manual removal of retained products	42%
Coagulopathy	1%	N/A	

BEmONC facilities were inadequately prepared to manage post-partum hemorrhage (PPH) which is a contributor to high maternal mortalities in facilities. Uterine atony, the leading cause of PPH is managed using oxytocin. Availability of parenteral administration of IV oxytocic drugs should be 100% in facilities conducting deliveries, however only 87% of the facilities had it. The 13% not offering the service put mothers delivering at risk of death should hemorrhage occur. Availability of manual removal of retained placenta (66%) and removal of retained products of conception (42%) were low and should be available to manage PPH due to retained tissues.

- b)** Obstructed Labor causes 28% of maternal deaths, yet only 22% of facilities offer assisted vaginal delivery using the manual vacuum aspirator to manage obstructed labor.
- c)** Eclampsia causes 14% of maternal deaths yet only 79% of facilities offer monitoring for hypertensive disorder of pregnancy in ANC. Only ¾ of facilities conducting deliveries had BP machines. Meaning a quarter of facilities had no capacity to measure blood pressure hence no capacity to detect and therefore manage hypertension and eclampsia in pregnancy. Availability of magnesium sulphate which is lifesaving in prevention and management in preeclampsia and eclampsia was available only in ½ of the facilities conducting deliveries.
- d)** Sepsis causes 3% of maternal deaths, with 81% of facilities having availability of parenteral antibiotics
- e)** Neonatal Asphyxia accounts for 32% of neonatal deaths but only 60% of these facilities offered neonatal resuscitation, meaning that the neonates born in these facilities needing resuscitation have poor chances of survival in such facilities.

Looking specifically at tracer items needed to conduct neonatal resuscitation only 38% had a neonatal bag and mask which are the bare minimum needed for neonatal resuscitation. This means that despite 60% of the facilities reporting ability to perform neonatal resuscitation, only 38% actually had the capacity to do so.

### CEmONC services

CEmONC functions include all the BEmONC signal functions plus cesarean section function and blood transfusion services. KHFA Findings showed:

- 68% of all hospitals (level 4 and above) had caesarean section available and 69% of hospitals had blood transfusion services available against the expectation that all hospitals should have these services as per the facility level norms and standards.
- Only a quarter of all hospitals sampled reported ability to carry out all the 9 CEmONC signal functions with only 1 out of 5 level 4 public hospitals and 4 out of 5 secondary and tertiary hospitals reporting availability of all 9 CEmONC functions.

This means even where a facility may be able to provide Cesarean section services and give blood, they might lack a BEmONC tracer item to give an intervention and avoid unnecessary caesarian section.

- Nearly all (99%) the CEmONC hospitals self-reporting to offer all 9 CEmONC signal functions lacked one or more tracer items needed to provide caesarian section and blood transfusion services. On further disaggregation, only 22% of secondary and tertiary hospitals and 1% public primary hospitals had all the CEmONC tracer items.
- Among the CEmONC tracer items the blood sufficiency was inadequate in 6 out of 10 hospitals with only half being able to carry out cross matching.
- Only about half the CEmONC facilities had anesthesia equipment and staff trained on anesthesia.
- A third of CEmONC facilities did not have oxygen at the time of the assessment.

These findings point to insufficiency in providing high quality emergency obstetric services even at level 4 to 6 facilities due to lack of critical inputs. All level 4 to 6 hospitals should be able to provide management of high-risk pregnancies and obstetric complications with Caesarian sections being available for a facility to be licensed as level 4 and above. Provision of cesarean section services was available in 2/3<sup>rd</sup> of the hospitals meaning the hospitals were not maintaining the expected standards for licensing and for care. Provision of cesarean services requires different inputs which were low with 49% of the hospitals having at least 1 staff trained anesthesia staff, 44% with anesthesia equipment and 72% with oxygen.

All level 4 and above hospitals should also be able to carry out blood transfusion services but only half of the hospitals could carry out blood crossmatching test with only 4 in 10 having adequate blood supply. Given that 35% maternal deaths are due to hemorrhage, availability of blood is critical to ensure optimum quality of care.

Only 1% of the primary hospitals and 22% of secondary hospitals had all the necessary tracer items necessary to provide all the 9 comprehensive quality emergency services. This indicates that a mother could still die from maternal complications despite being in a CEmONC facility. Lack of one of any one of these critical CEmONC services leads to avoidable maternal deaths therefore it is not enough to have the facility but to ensure its readiness to provide all the necessary interventions to avert maternal death. This includes the necessary infrastructure, drugs, equipment and trained health workers.

## Conclusion

Kenya has made large strides in increasing skilled birth attendance coverage. Despite this increase evidence has shown minimal gains achieved in terms of reducing facility maternal and neonatal mortality.

- Facilities self-report to provide BEmONC and CEmONC services. However the quality of care given in some health facilities as evidenced by availability of all 7 BEmONC and additional 2 CEmONC services and necessary tracer items is suboptimal.
- Programs and health managers need to change focus from increasing coverage to availing all necessary inputs and processes to ensure delivery of quality maternal and newborn health services.
- The quality of maternal newborn services as assessed by the comprehensiveness of service and availability of commodities and equipment to provide these services is lacking.

***“What good does it do to offer free maternal care and have a high proportion of babies delivered in health facilities if the quality of care is sub-standard or even dangerous?”***

*“Margaret Chan, WHO Director-General, at the World Health Assembly, May 2012*





## Recommendations

- Implement and enforce maternal and newborn quality of care standards to ensure the facilities are equipped as per their KEPH level norms and standards to perform BEmONC and CEmONC services.
- Implement mechanisms to regularly monitor and evaluate availability and quality of services offered by different level facilities, to ensure that facilities meant to be offering BEmONC & CEmONC services are continuously able and ready to offer these services at all times.
- Strengthen the national blood transfusion services to be able to forecast and meet the blood supply needs of the country.
- Institutionalize Maternal and Perinatal Death Surveillance and Response committees at all levels and analyze Maternal and perinatal data and use results to implement appropriate lifesaving interventions. This will enable facilities be aware of the avoidable causes of maternal death and implement measures including availing all the inputs necessary to provide all the basic and comprehensive emergency obstetric care.

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