

Skilled Birth Attendant Competence and Facility Readiness For Managing Obstetric Emergencies in Eritrea

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Abstract

Introduction: Skilled Care Attendance during pregnancy and child birth is crucial for the reduction of maternal and neonatal mortality. Various studies have demonstrated the correlation between increase in skilled care attendance and reduction of maternal mortality globally.

Objective: The objective of the study was to assess the impact of life saving skills training in the improvement of knowledge and skills of health workers and the quality of health services provided to mothers and newborns.

Methodology: The study was a cross sectional study on 137 Life Saving Skills trained health workers randomly selected out of the total trained staff. The competence study measured knowledge with a 50-question knowledge test that covered the topics of (1) aseptic technique, (2) uncomplicated labor and delivery, (3) immediate newborn care, (4) postpartum hemorrhage, (5) sepsis and (6) pre-eclampsia, and eclampsia. Observation of competency of health workers was used to assess the competency of health workers.

Results: The competency test scores appear that nurses and associate nurses are retaining their level of knowledge fairly well. Aseptic technique had the highest average score of any of competency tests. The assessment results showed that most nurses and associate nurses can perform the active management of labor skill relatively well, with an average score of 73% among those assessed. Five zones had average scores above 75%, which indicates the performance is consistently high in most areas. The average score for Manual Removal of placenta was quite high in most zones, with an average score of 66%. Four of the six zones received scores above 70%. The average score for bimanual uterine compression (58%) was slightly lower than the other skills tests related to the prevention and/or treatment of postpartum hemorrhage. After completing LSS training, the providers are expected to be able to recognize the signs and symptoms of an infant who is having difficulty breathing and they should be able to complete the five basic steps of immediate newborn care: DRY, WARM, POSITION, SUCTION (if necessary), and STIMULATE. The scores for the skills of nurses and associate nurses in the five steps identified is an average score of 65%. The study was designed to assess the impact of life saving skills training in the improvement of knowledge and skills of health workers and quality of health services provided to mothers and newborns and represents the first comprehensive assessment of the knowledge and skills of nurses and associate nurses in emergency obstetric care.

Introduction

Every year more than 585,000 women die worldwide from pregnancy and child birth related complications. Evidence shows that every pregnancy faces risk and it is not possible to tell which pregnant women would develop complications. More than 90% of maternal deaths happen in developing countries. Lives of these women could be saved with quality obstetric care. Hence, skilled assistance during labor, delivery and during postpartum period is the most important and key service to the reduction of maternal morbidity and mortality

An enabling environment is also needed for Skilled Birth Attendants (SBA) during delivery and in assisting obstetric emergencies on time. We know that the existence of a competent Skilled Birth Attendant can make a difference towards improving birth outcomes and reducing maternal and neonatal morbidity and mortality. Yet little is known about the skills possessed by the health care providers, what enabling factors assist or deter SBA to perform optimally, and the causes of delay in receiving care ones a women with obstetric complication arrive at facility.

The high rate of abortions and subsequent complications in Eritrea suggest there is high unmet need for Family Planning. The 2002 Eritrean Demographic & Health Survey (EDHS) states this unmet need is 27% overall, 21% for spacing and 6% for limiting. In general, the data demonstrates that clients who make the decision to use contraceptives have limited choices available to them. This may also be evidenced by the low contraceptive prevalence rate in Eritrea, which is 8% overall and 5% for modern methods (Eritrea DHS 2002).

Methods:

The study was a retrospective study assessing progress in improving access to and quality of emergency obstetric care services. Where appropriate, data from previous studies and from the National Health Management Information System (HMIS) was used to provide measurements of progress and context to the situation³.

The study used eight different survey instruments, which were previously used by University Research Corporation in Ecuador, Rwanda, Jamaica, and Benin. The instruments are based upon the WHO's Integrated

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 Management of Pregnancy and Childbirth (IMPAC) Guidelines used as measurement benchmark, which represent the evidence-based best practices for managing of labor, delivery, and common obstetric complications. Where the Eritrean National standard differed from the IMPAC guideline, the result was analyzed by comparing with both.

The first instrument was a 50-question knowledge test containing both multiple choice and true false questions. The test covered the topics of aseptic technique, uncomplicated labor and delivery, immediate newborn care, postpartum hemorrhage, sepsis and pre-eclampsia, and eclampsia.

The next two instruments measured skills in the areas of active management of third stage labor, manual removal of placenta, bimanual uterine compression, immediate newborn care, and neonatal resuscitation with ambu bag. Assessment for these two instruments was done by direct observation by senior midwives and trainers in the Ministry of Health. Participants performed these skills on appropriate-sized anatomical model (mannequins) and were instructed to perform each task as if they would on live baby or mother.

The final individual instrument evaluated the use of partograph. In this exercise, participants plotted a case study of prolonged labor. During the case, participants were asked to plot data on a partograph paper and answer questions regarding diagnosis and actions to be taken.

Each instrument was reviewed and adapted for the Eritrean context by the Reproductive Health Technical Committee, which had members representing the Ministry of Health, WHO, UNICEF, UNFPA, USAID/TASC II, and teachers from the nursing and midwifery school and LSS trainers.

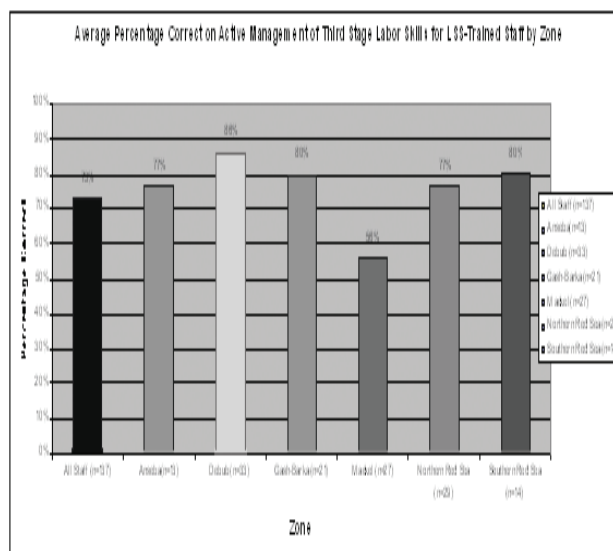
A four-step random sampling procedure was used to determine the sample size for this study. Out of a total 416 nurses and associate nurses that have been trained in life saving skills since 2003, 131 randomly selected health workers were enrolled for assessment. Sample size was proportionally allocated to each zone according to the profession/category of target respondents.

Training was conducted to all data collectors and supervisors. Data entry, clean up and analysis was done using SPSS for Windows Version 11. Tables and graphs were used to present results.

Results:

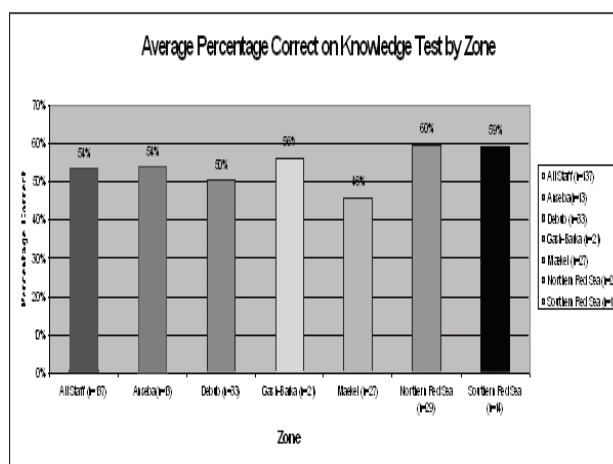
Knowledge and skills of health workers for provision of quality maternal and child health care were assessed. Overall the knowledge and skills of health workers in applying what they have learned was low. The average knowledge of staff on the basic concepts of maternal and child health care was 54% while the pass mark during the training was 80%. Partograph use was literally nonexistent in almost all health facilities.

In reviewing the average scores, it shows the level of knowledge to be fairly consistent across zones. The average for all health workers was 54% and in the zones it ranges from 46% in Central Zone to 60% in Northern Red sea Zone.



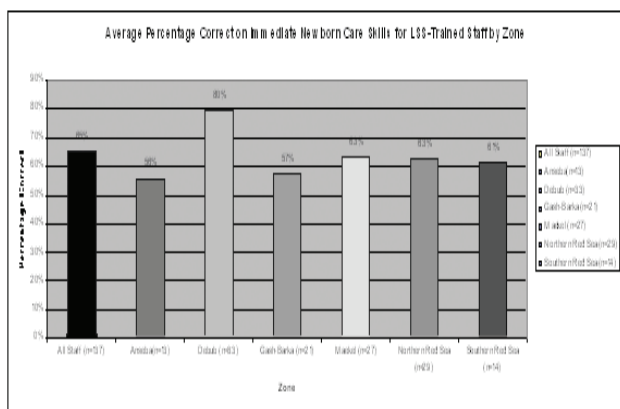
Aseptic technique had the highest average score of any of the competency tests. Good infection prevention practice was heavily emphasized in the LSS training and through supervision in many zones. This average score on aseptic technique was above 75% in four zones. Gash Barka and Maekel had scored in 60's indicating a need for targeted refresher training in those zones.

The assessment results showed that most nurses and associate nurses can perform active management of third stage of labor relatively well, with an average score of 73%. Five zones had average scores above 75%, which indicates the performance was consistently high in most areas. The results by zone are indicated below:



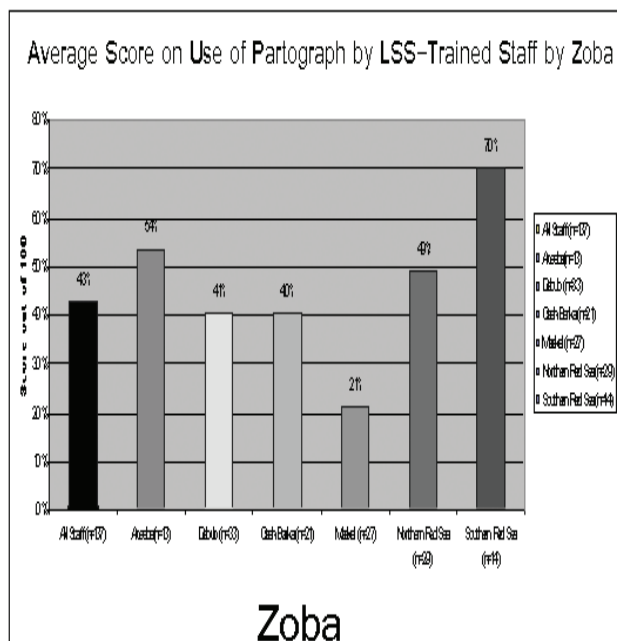
The average score for manual removal of the placenta was also quite high in most zones, with an average score of 66%. Four of the six zones received scores above 70%. Despite these high scores, less than half (47.3%) of MCH clinics, health centers and health stations in the sample performed this skill in the previous year.

The five basic steps of immediate newborn care: DRY, WARM, POSITION, SUCTION (if necessary), and STIMULATE were assessed. The scores below reflect the skills of nurses and associate nurses in the five steps identified above. The average score was 65. Debub scores were quite high at 80%.



The average score for neonatal resuscitation was among the lowest of the skills tests with an average of 59%. The exception is Debub zone which had an average score of 82%. The scores reflect the need for refresher courses and continuous supportive supervision for the health care providers.

Although the use of partograph was a significant portion of the LSS curriculum in Eritrea, its use was extremely low at all health facilities. This lack of use was reflected in the scores of the partograph exercise which is only 13% among all staff in the six zones assessed.



Similar versions of these instruments were used to assess competency of health workers in four other countries, Benin, Rwanda, Jamaica, and Ecuador. The table below shows how their scores compare to those in Eritrea. Please note that since the exact same instruments were not used and the grading of the partograph was done differently, these comparisons are not considered to be statistically valid. This information should rather be used to give a general idea of how Eritrea compares to other countries.

Topic	Eritrea (n=137)	Rwanda (n=19)	Benin (n=42)	Jamaica (n=62)	Ecuador (n=25)
Types of Workers Assessed	Nurses & Associate Nurses	Doctors, facility-based midwives, nurses, & medical interns	Doctors & facility-based midwives	Doctors, facility & community-based midwives, nurses, & medical interns	Doctors, facility-based midwives, & medical interns
Interpersonal Communication Skills (IPC)	52%	32.7%	18.4%	36.2%	7.4%
Aseptic Technique	75%	53.7%	55.2%	43.2%	38%
Manual Removal of Placenta	66%	51.1%	64.2%	20.1%	46.8%
Bimanual Uterine Compression	58%	40.2%	7.9%	22.2%	28.6%
Neonatal Resuscitation with Ambu Bag	59%	43.3%	58.6%	67.9%	39.5%
Partograph Exercise	13%	49.8%	66.7%	N/A	50.7%
Knowledge Test	54%	47.9%	52.5%	59.8%	61.8%

Source: Population Bureau Publication 2003

Discussion

The study was designed to assess health workers' knowledge and skills on maternal and child health care in Eritrea. A total of 137 health workers trained in Life Saving Skills (LSS) were randomly selected to be enrolled in the study.

Overall knowledge and skills of health workers in Eritrea as compared to other countries is fairly good. Despite high knowledge and skills as tested via role playing and observation, the practice is still

very low. This indicates that post training follow up, supportive supervision and targeted refresher courses are needed.

The data from health stations and health centers indicates that there are problems maintaining a consistent supply of parenteral drugs (particularly anticonvulsants and antibiotics). In addition, the contraceptive supply chain can be improved as well. The demand for family planning is already low in Eritrea, but it will not be helped by a poor choice of methods at most peripheral health facilities. In addition, the review of historical data shows that availability of skilled services such as MRP and RRP is inconsistent. Zonal medical teams need to be aware of the skill level of their staff and ensure that the availability of services remains constant at facilities even if staffs are moved to other facilities. Despite high knowledge of the basic maternal and child health services, practicing what they know is still very low. This is an indication that many of the nurses and associate nurses possess the knowledge to perform manual removal of placenta, but for some reason are not offering this service at their facility.

Six out of the 11 hospitals assessed are comprehensive EmOC facilities. This means that 2 hospitals and 3 mini-hospitals lack services they should be supplying. Targeted interventions need to be put in place to upgrade the skill level at these facilities. In particular, examine what needs to be done to reinstate blood transfusions at hospitals that used to provide them and upgrade staff to provide caesarian section. The status of Tio Mini-Hospital and Nakfa Hospital needs to be seriously examined, as both lack services to even provide basic EmOC.

This data represents the first comprehensive assessment of the knowledge and skills of nurses and associate nurses in emergency obstetric care. These results are designed to give an indication of what knowledge has been retained by staff since their training and if staff are able to translate their knowledge into practical skills. It should be treated as a baseline assessment and areas needed for improvement should be noted by supervisors and reproductive health focal persons in each zone. This assessment should be repeated on a regular basis to gauge progress.

In general, Debub and Southern Red Sea zones had relatively higher scores on most competency tests. In contrast, Maekel had very low scores on most skills tests. The other three zones fell somewhere in the middle. The skill level in Maekel should be of significant concern since it is so far behind the other zones. Debub has made tremendous progress over the past 2-3 years and much of that can be attributed to the introduction of the EOC Collaborative and the introduction of the supportive supervision system. The successes of these interventions should be examined to see if they can be replicated in other zones.

The rates of partograph completion are extremely low. Zonal health management teams should make

the improvement of these rates a top priority. They should also be prepared to provide instruction that partographs should be completed for all deliveries, regardless of at what stage the woman presents herself at the facility. Once again, the progress of Debub should be examined and replicated to other zones.

Performing many of the LSS procedures are new for nurses and associate nurses. The study results show that most staffs are retaining a fairly high level of knowledge of techniques, yet many still are not performing services such as manual removal of placenta and removal of retained products of conception. It is extremely important that staff have the confidence to perform these services when the need arises. Thus, staff must be coached and mentored to ensure that they maintain their confidence and comfort.

The tremendous time and financial investments made in training nurses and associate nurses in LSS were done to improve access to maternity services at peripheral facilities. Despite this improved skill level, most women still choose to give birth at home. Community-based interventions to increase demand and access to maternity services will help make these investments worthwhile and will enable these workers to maintain and even improve the technical skills they learned during training,

Recommendations:

- Equipments and supplies for maternal and child health care should be available at all levels for health workers to be able to implement what they have learned.
- Refresher courses should be organized for health workers in selected zones where the competency and skills was found to be very low.
- Continuous supportive supervision is required for health workers to implement what they have learned.
- Despite high level of knowledge of particular procedures, practically were not being done, further studies as to why they are not doing the procedures like manual removal of placenta and partograph is recommended.

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