

# Evaluation of the Performance of Anesthesia Assistants in Selected Health Facilities of Nepal

---

## Executive Summary

Prepared for Nepal Safer Motherhood Project,  
Nepal

M&M Associates

September 2004

# Evaluation of the Performance of Anesthesia Assistants in Selected Health Facilities of Nepal

## Executive Summary<sup>1</sup>

### 1. Introduction

In 1996, a three-month anesthesia assistant course was launched with financial support from World Health Organization. The Department of Anesthesia of Bir Hospital was selected as a training site, and in four years, and approximately 50 Anesthesia Assistants were trained. A follow up was conducted which revealed that the Anesthesia Assistants were very helpful in providing surgical services but the course needed to be revised to include more content on anesthesia management. Thus, the Family Health Division and the National Health Training Center created a new competency based six-month anesthesia assistant course, which was piloted in Western Regional Hospital, Pokhara and the trainees were evaluated later. Based on the findings of the evaluation, the training curriculum was revised and endorsed. Patan Hospital, which is responsible for managing this course, has so far trained 24 Anesthesia Assistants (AAs).

#### 1.1 Objectives of the Study

##### Overall Objectives:

1. Assessment of the Anesthesia Assistant course – an assessment of the trainees' experience, inputs into the training, etc.
2. Assessment of the skills and knowledge of the Anesthesia Assistant – an assessment of the output of the training
3. Assessment of the impact of the Anesthesia Assistant on Safe Motherhood service delivery – an assessment of the outcome of the training. For e.g., reduction in referrals, percentage of increase in cesarean section deliveries, reduction in incidences of deaths, etc.

#### 1.2 Methodology

The study was conducted through the use of both quantitative and qualitative methods using on-site observations, self-administered tests, and, interviews with health service providers, and Hospital Management Committee Members, both formally and informally. A literature review of national and international documents related to non-physician Anesthesia Assistants was conducted prior to the data

collection to provide input on the design of the study. Altogether data and information has been collected from 68 health service providers of different levels from 17 hospitals and 3 primary health care centers around the country.

Simple descriptive statistical tools like frequency and percentage was used to analyze the data. The findings have been analyzed and presented in the study using both quantitative and qualitative measures as have been applicable.

---

<sup>1</sup> The full document and other related documents can be found on web: [www.nsmmp.org](http://www.nsmmp.org)

## 2. Findings

The findings of this study primarily portrays the services being provided by the Anesthesia Assistants trained in the competency based six months training course. The N for knowledge of the AAs is 13 while for the rest N is 11, unless specified otherwise. References to the three months trained AAs (N=9) are made only in areas, where it is appropriate. Overall a total of 22 AAs, combining the 3-month trained and the 6-month trained, were included in this study.

The AAs (N=22) are relatively young with the youngest being 21 years of age while the oldest is 47 years old.. While 14 (63.6%) AAs are male, the rest 8 (36.4%) female. Nine (40.91%) have received 3 months AA training; the remaining 13 (59.09%) have received 6 months AA training. The average years of service of AAs is 15 years. The designations of AAs seem to be uniformly distributed. While over one fourth (27.27%) of AAs are designated as Staff Nurse, five (22.73%) are Health Assistants, 5 (22.73%) are AHWs of whom 3 are senior AHWs, and 3 (13.64%) are ANMs.

Approximately two third (63.6%) of AAs were found to be moderately satisfied while over one fourth were highly satisfied from the training. Most of the AAs considered that practical and operation theater experiences were very good while the theoretical portion of the training was considered to be very good by only over half (54.5%) of the respondents.

Over half of the AAs (N=11) were very satisfied with the trainer and his/her efforts in training them in anesthesia during the training while the rest were moderately satisfied. However, since all the trainers were foreigners, language was a problem during the initial period of the training.

Most of the AAs were impressed by the quality of materials distributed during the training. However, some AAs felt that lack of models, dummies and pictures were felt repeatedly during the training.

Approximately three fourth (72.7%) of the participants said that the six months duration of the training was just right. The AAs suggested that the training should include more exposure on general anesthesia, complications related to anesthesia, and, regional blocks.

Judging by the service statistics and interaction with the different respondents it was found that the overall client flow, particularly for CEOC services, in the health institutions have increased after the AAs have started providing anesthesia services. The doctors opined that the hospital services have become more complete and regular due to the availability of Anesthesia Assistants in the hospitals. The doctors also felt that the presence of AAs has considerably decreased their workload and tension during surgery. The impact is felt in the CEOC services because even the well to do people of the community trust the surgical services of the health institution rather than going to higher centers for delivery. Thus it can be inferred that the maternal and neonatal mortality has also gone down due to the life-saving services available in the districts.

Despite having very favorable impressions of the training, the AAs faced some problems during the six months training. The medium of instruction in English language was a big hindrance in comprehending the theoretical portion of the training. Some logistical problems were faced when the training was non-residential. Also some of the AAs considered that the allowance provided during the training was inadequate in meeting the cost of residence, transport and other daily necessities. Another problem mentioned by the AAs was the lack of adequate dummies, dolls and pictures during the training. Lack or shortage of these materials created problems in applying the acquired knowledge and skills.

A true/false (full marks 100) test administered on the AAs demonstrated that the AAs are highly knowledgeable on different issues of anesthesia that they were trained in. While more than 50% of the AAs scored above 75 in the test, around 33% scored between 70-75 and rest scored below 65. The average score of AAs was 75.7.

Most of the AAs, over 80%, were found to be competent in all aspects of providing spinal and intravenous anesthesia, while only around 40% of the AAs were found to be competent in providing general anesthesia under bag and mask or with intubation and paralysis.

Due to non-practice of intubation and very few cases of general anesthesia, most of the AAs are losing the skills or will lose the skills in due course of time. Very few AAs were seen to be confident in managing intubations and general anesthesia under bag and mask. Thus some experts have expressed their views as to continue strengthening AA's skills in performing intubations just for the purpose of patient resuscitation and not necessarily for surgery.

Of the eight hospitals sampled with the six month trained AAs, only three hospitals provide elective surgery facilities. With one hospital providing no surgical services, the rest seven hospitals provide 24-hour emergency surgery facilities. Some three fourth (9 out of 12) of the six month trained AAs are involved in surgeries performed in their hospital. Of the 9 AAs involved in surgeries, three of the AAs are on 24 hour duty with no replacements while the rest six are involved in surgery on a rotational basis.

Of all the six month trained AAs interviewed, 58% provide service not only within the operation theater but also in other places inside the hospital. These AAs were observed to be a dynamic lot providing services in the wards, the OPD, emergency, and labor and delivery rooms. Some 25% of the AAs are also providing anesthesia services outside the hospital.

Over 70% of AAs have faced complications during surgery which include hyper and hypo tension, cardiac arrest, respiratory failure, hemorrhage, post spinal headache, etc. Generally it is AAs responsibility to monitor and manage the complications during surgeries but it was found that most of the AAs inform the operating doctor, in case any major complication occurs, and ask for his/her help to stabilize the patient. However, there is no practice of maintaining records of complications in most of the hospitals.

As regards the anesthesia technique used for LSCS, it was found that all AAs use spinal anesthesia. Spinal anesthesia was the most preferred technique for appendectomy. Most of the AAs administered GA under bag and mask for laparotomy. However at times, spinal combined with IV anesthesia was also used for laparotomy. IV anesthesia using ketamine was administered for incision and drainage and child's closed reduction fracture. Almost all the respondents said that IV anesthesia was administered for manual removal of placenta in their hospitals.

Of the eleven hospitals that provided some data related to surgery, six were zonal hospitals while the rest five were district hospitals. The study team found that it was difficult to get consistent data related to the different kinds of surgeries that were being conducted in the hospitals. In the past eleven months between August 2003 and June 2004, from the partial (incomplete) data collected from the eleven hospitals, around 12,550 surgeries took place out of which around 2550 were LSCS cases. Of the rest, around 60% were minor surgeries.

In the six zonal hospitals, over the past year (read 11 months), around 11,200 surgeries were performed out of which around 4,480 were major surgeries while the rest were minor surgeries. Around 2,350 LSCS were performed in the zonal hospitals and the percentage of LSCS over total surgeries is around 21% while the percentage of LSCS over major surgeries comes to around 53%. In the five district hospitals, over the past year (read 11 months), around 1,350 surgeries were performed out of which around 540 were major surgeries while the rest were minor surgeries. Around 200 LSCS were performed in the district hospitals and the percentage of LSCS over total surgeries is around 15% while the percentage of LSCS over major surgeries comes to around 37%.

Since on average around 40% of the surgical cases of the hospitals are LSCS cases, majority of the surgical services being provided by the hospitals are for Emergency Obstetric Care and thus it can be inferred that the surgical services of the hospitals have made a big impact on the reduction of maternal and neonatal mortality. The availability of the services of the AAs has made this possible in most hospitals.

Around 55% of the AAs are highly satisfied from being a health service provider, around 36% were moderately satisfied, while one AA was indifferent. As regards to their satisfaction in being an anesthesia assistant, the responses were almost the same.

Around 54% of all respondents were knowledgeable that they have a job description. However, only two respondents were able to provide copies of their job description. But all the AAs were unanimous on the issue that the new work of anesthesia that had been entrusted to them was not in their job description.

The absence AAs severely affects the surgical services of all hospitals.

The working relationship of most of the AAs with the doctors and their colleagues is cordial and they have formed a good team for the management of anesthesia services. However, the AAs currently not providing anesthesia services seem to have a somewhat strained relationship with the doctors.

While most of the hospitals provide allowances to the doctors for the surgical services that they provide, only around 25% of the sampled hospitals are providing extra allowances to AAs for their services. All respondents, including the Hospital Management Committee Members, feel that the AAs should receive allowances for their services.

Most of the AAs felt that at present they were receiving no opportunities to enhance their anesthesia skills and knowledge. The AAs feel that they need to receive refresher training regularly in order to update themselves on anesthesia and to reassess and revitalize their skills.

All the respondents of the study were unanimous in their opinion that the AAs required a separate designation and that the Government should create a separate post with the title of Anesthesia Assistant, to work exclusively in the operation theater.

The following were some of the enabling factors that motivated the AAs:

- The AAs mentioned that their esteem amongst their colleagues has increased after they received the AA training and started providing anesthesia services.
- Most of the AAs have cordial relations with the doctors and their other colleagues in the hospital and they feel that their colleagues also help them in their work whenever there is a need.

- The doctors find the AAs to be skilled and entrust them with complete responsibilities in managing anesthesia during surgeries.

The following were some of the factors that hindered the performances and functions of the AAs:

- The surgeons are not trusting on the skills of the AAs completely because of the lack of relevant information on the training and the skills acquired by the AAs.
- Lack of adequate anesthesia equipment in the hospitals cause problems in providing safe anesthesia services.
- Lack of surgeries in some hospitals is a big hindering factor to the AAs.
- Lack of supervision and monitoring of AAs.
- Most of the AAs are not provided with any kind of allowances for the work that they do in the Operation Theater.

As regards to the number of AAs required per hospital, and in order to implement the 15-year National Safe Motherhood Plan (2002-2017), based on the recommendations of the respondents and the current workload based on the service statistics, at least two AAs should be posted in each district hospital and three AAs in each zonal hospital. Thus in order to ensure that the 63 district hospitals mentioned in the 15-year plan are able to function as CEOC sites, a total of 126 anesthesia assistants are necessary.

The anesthesia assistant training has contributed significantly in the provision of life-saving surgical services, especially for CEOC, at district and zonal level hospitals thereby having a valuable impact in reducing maternal and neonatal mortality. The training is good in enhancing the knowledge and skills of AAs.

The impact of the training was found to be very positive as surgeries were being performed regularly in most of the hospitals where the trainees are posted. Referrals from these hospitals to higher centers have declined to a large extent, especially for delivery related cases because most of the hospitals provide LSCS services. In turn, referrals from other centers to the hospitals for different services, particularly for CEOC services have increased and are gradually increasing.

Overall, the six months anesthesia assistant training is found to be very good and has had a major impact on the CEOC services being provided by the hospitals sampled in the study.

### **3. Recommendations**

The following are some of the recommendations related to improving the AA training the AA services:

- The training needs to be institutionalized and conducted in Nepali.
- The training materials should be translated to Nepali.
- The trainer or another resource person should facilitate the transition of each trainee into his/her institution from training to service provision.
- The surgeons working with the AAs should be updated on the content of the training and the skills of the AAs.
- The AAs should be periodically supported with resource materials and further training opportunities so as to maintain and enhance their skills.
- The training needs to incorporate a topic on basic maintenance of anesthesia equipment.

- The trainers should request and analyze information about the setting of OT and the equipment available in the trainee's hospital before the training.
- All equipment should be checked for completeness before sending to the hospitals.
- The job description of the AAs needs to be developed and their level of responsibility clearly spelt out.
- Record keeping of complications and surgery related data is weak and the practice needs to be started
- The AAs should continue the practice of maintaining anesthesia charts.
- HMG needs to introduce a separate position of Anesthesia Assistants in the health system.
- A system of network should be developed between the AAs and Physician Anesthetists working closest to their health center.
- The AA's intubating skills should be strengthened for the purpose of patient resuscitation.