BASIC EMERGENCY OBSTETRIC AND NEONATAL CARE TRAINING

SISKES EXPERIENCE IN NTB PROVINCE

[Images and logos]
Basic Emergency Obstetric and Neonatal Care Training: SISKES Experience in NTB Province

Background

NTB Province has long ranked as one of Indonesia’s provinces with the highest maternal and infant mortality figure. Over the past decade, however, concerted efforts have been made to improve the situation, and NTB has begun to reduce maternal mortality as illustrated in Graph No. 1 below. The decrease after 2003 seen in the graph has been attributed largely to increases in skilled birth assistance\(^1\) in high population areas, to greater access to social health insurance, and to increased use of family planning. Beginning in 2006, MOH provided additional funding to accelerate the trend to decrease mortality rates by strengthening the Maternal and Neonatal Health (MNH) program. The slow decline has continued, but the need was also recognized for an improved network of accessible facilities ready to provide emergency obstetric and neonatal care in district hospitals and selected health centers to serve women in less populous areas who still give birth without skilled assistance.

In 2006 and 2007, the neonatal deaths reported by NTB showed a neonatal mortality rate (NMR) of only 8 and 10 deaths per 1,000 live births, far below the national average of 23 and far from the findings of surveys. It was highly unlikely that a province with the highest Infant Mortality Rate (IMR) in Indonesia would have an NMR much less than the country’s

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\(^1\) During this time there was increased momentum in normal delivery training (APN) with the result that at least 75% of all community midwives have undertaken the training since the early 2000s.
average. Quite simply, few neonatal deaths were being reported. This has changed, however, and by the end of 2008, a number of districts were reporting rates of over 20 per 1,000 live births (Graph 2). This most likely indicates that communities have increased access to the health system and that staff have improved their data collection.

Among the programs launched to accelerate maternal and neonatal health improvement were education and training for skilled delivery assistance and establishment of Basic and Comprehensive Emergency Obstetric Neonatal Care (BEONC and CEONC) at the first referral level – the health center with beds – and at the district hospital respectively. There is no disagreement that delivery with skilled attendance and timely emergency obstetric care when required are best practices to avoid unnecessary deaths of both women and newborns.

This paper will describe the collaboration of the GTZ SISKES program with the NTB Health Office to establish BEONC in five districts to improve first referral level care, reduce unnecessary referrals, and improve the preparation of referred cases to reach emergency care for prompt care by skilled providers in a facility ready for emergencies.

**Brief description of the program**

**GTZ/SISKES** focuses on a District Health System Improvement with a specific focus on maternal and neonatal health from four main perspectives:

- Management of the health system: integrated planning, budgeting, and monitoring, including HMIS (Health Management Information System) and health financing
- Management of the health services and their linkages within the health system
- Quality of clinical services
- Community empowerment and participation in health related actions

In NTB the program is implemented between January 2006 and December 2009 with BMZ (the German Ministry of Economic Cooperation) as the primary donor and important co-funding for the additional Maternal and Neonatal Health program by the British DFID (British Department for International Development). The program operates within the Making Pregnancy Safer (MPS) program of the Ministry of Health (MoH), implementing the nationwide program with specific attention to improved management of health facilities, the health system at the district level, and improved clinical services through better staff skills.

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3 SISKES & HRD Annual Report 2008
A major focus for change and improvement has been the systematic evaluation of clinical and management skills after training, an aspect of services management that has been neglected in spite of the development of comprehensive checklists for such activities the USAID-funded HSP program. The SISKES approach focuses strongly on comprehensive technical assistance to develop considerable capacity to manage processes more effectively and efficiently while providing better quality service delivery\(^4\).

**B. Objectives and key indicators**

1. **Availability and functioning of BEONC services**

A short list of signal BEONC functions is used to monitor health facility progress in advancing from being only partially functioning to becoming fully functional over a period of six months to one year after training.

2. **BEONC facility performance**

Facility performance is also judged by collecting routine secondary data from health facilities on emergency cases handled and referred. Inputs are noted as one indicator of District Health Office (DHO) commitment to support the facilities in performing BEONC services. Two main types cases are followed -- post partum bleeding due to atonic uterus, placental retention, or retained products of conception and newborn asphyxia or low birth weight – because proper treatment of these cases at a health center with BEONC capability could reduce unnecessary referrals and improve preparations for severe cases which do need referral to hospital.

**C. Program implementation**

An integrated approach to improve clinical emergency obstetric and neonatal care services was divided into 3 major steps:

1. Planning
2. Implementation
3. Monitoring and evaluation

The Training Concept for MPS prepared by a SISKES consultant concluded that NTB was ready to move toward BEONC training because there are districts with more than 75% of midwives trained in APN\(^5\). With more than 80% coverage of skilled attendance at delivery, the

\(^4\) Program Progress Review SISKES 2009

\(^5\) Training Concept for Making Pregnancy Safer, Janette O’Neill, Oct 2006 – the assumption was based on a critical mass of skilled birth attendants with basic competencies to support movement to the next skill level.
establishment of BEONC and a functioning referral system completes the maternal and neonatal intervention package envisioned.

To assess current state of MPS clinical services, a short survey was conducted with the MCH officer of the Provincial Health Office (PHO) in all nine districts of NTB in November 2006. Increased attention to the five MPS focus districts after January 2007 aimed to ensure sustainability of BEONC services by assuring the availability of a permanent medical officer, midwives who have attended the 10 days APN normal delivery care training course, infrastructure, and equipment. Additional criteria for BEONC health center selection were developed with the DHO to take advantage of the Alert Village (Desa SIAGA) movement and health center management training supported by the program. Final selection was done by the DHO with an emphasis on team rather than individual training.

The BEONC implementation process varied between districts. Written requests from partners were required, and the capacity of districts to write proper proposals varied. BEONC training for ten teams of health centers was conducted in three districts in 2007, followed by seven other health centers from two districts in 2008. The 6-day training at P2KS included a maternal component (60%) and a newborn component (40%). Thirteen teams were trained with full support from GTZ and four Lombok Barat District teams were trained using central budget. Only Lombok Barat had the budget needed to complete the recommended 14 days of internship in the training sites. To partially overcome this problem, the trainees from the other districts took internship shifts at night during the training period.

The next implementation step was dissemination by the DHO of standard equipment, drugs, and supplies needed by BEONC facilities as defined by MoH guidelines. This required intensive meetings with the pharmacy department because the drug request list from the pharmacy has not been updated for many years and emergency drugs for obstetric and neonatal care were not on the list. Strong advocacy was also needed with the planning department in order to have sufficient budget to complete the supporting environment. The availability of the standard equipment was important because the functioning of BEONC services is very much dependant on the enabling environment, and training by itself may not necessarily improve service performance. When the essential drugs and equipment are available, related clinical actions are more likely to be performed.

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6 Pedoman Pengembangan Pelayanan Obstetrik dan Neonatal Dasar di Puskesmas, Depkes RI.
7 The Skilled Attendant Index: Proposal for a New Measure of Skilled Attendant at Delivery. Hussein et al, Reproductive Health Matters, 2004
Another important activity to improve the service performance was to ensure that providers, once trained, always follow the standard operational procedures developed by central level. Clinical algorithms were developed by professional organizations\(^8\) for three obstetric emergencies – antepartum bleeding, post partum hemorrhage, and pre-eclampsia – and two neonatal emergencies – low birth weight and newborn asphyxia. The availability of these five clinical algorithms is important to ensure the quality of clinical standards and minimize variation among clinical services as they may try to save resources\(^9\). The availability of the five algorithms was added to the current MCH supervision check list.

The first evaluation of compliance judged the availability of standard inputs – human resources, the physical environment, supporting care, equipment, organizational system, and financial resources\(^10\). The second evaluation used a process standard (what we do) to monitor performance of activities meeting a standard – service procedures, documentation, and the use of resources as judged by direct observation and the completeness of the WHO partograph\(^11\).

In order to ensure that trainees are supported in their job by their home institution, their work environment, and their supervisor, training was followed by an assessment visit to the trainee’s workplace within 6 months to 1 year after the training. This visit evaluated the competence of the newly trained clinicians in providing high quality maternal and newborn health care services and gaining the support and commitment of on site supervisors for the newly strengthened service\(^12\). The visit was made by a trainer and also involved a representative of IBI (the Indonesian Association of Midwives) and the program manager at the DHO as the offsite supervisor responsible for improved health service performance after training.

Post training evaluation could only be done in only three districts – Lombok Barat, Kota Mataram, and Sumbawa Barat, but regular monitoring of overall BEONC performance was done using a short list of “signal functions”. It was considered important to distinguish between how facilities are supposed to function and how they are actually functioning, and six signal functions of maternal care plus 2 signal functions of emergency neonatal care were selected to serve for classification and monitoring to recognize BEONC services that should be provided at a Basic EONC facility\(^13\). The six signal functions are shown below (Table 1).

\[^8\] IBI= Indonesian Midwifery Association, POGI = Indonesian Obstetrics Association, IDAI= Indonesian Pediatrics Association
\[^9\] Block 2 module of Hospital Management Training
\[^10\] Check List Facilitative Supervision of Care Delivery at Puskesmas level, MoH 2008
\[^11\] Similar with clinical pathway for the progress of delivery
\[^12\] HPIEGO/Maternal & Neonatal Health Program: Guideline for Assessment of Skilled Provider After Training in Maternal And Newborn Healthcare. 2004
\[^13\] Guideline for Monitoring the Availability and the Use of Obstetric Service. UNICEF, WHO, UNFPA, August 1997
Table 1. Signal BEONC functions

<table>
<thead>
<tr>
<th>Are the following functions observed to be functioning?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Administration of parenteral antibiotics (by injection or IV drip)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Administration of parental oxytocic drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Administration of parenteral anticonvulsants for pre-eclampsia and eclampsia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Manual removal of placenta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Removal of retained products of conception (manual vacuum aspiration)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Assisted vaginal delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Low birth weight care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Initial resuscitation for newborn asphyxia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional supervision to ensure adequacy of the enabling environment was also done twice a year by the DHO and IBI to supplement the monitoring process. This assessment of the supporting environment included availability of, and compliance with, SOPs.

D. Results

1. Availability and functioning of BEONC services

Provincial data show that 74 of the 146 health center in 9 districts (a tenth district was split off in early 2009) have completed training in BEONC, but no assessment has been conducted to date to evaluate their performance on emergency obstetric and newborn care. Evaluation has been done only for the training supported by GTZ in 5 MPS districts. Using findings from the check list in Table 1, evaluation of the SISKES-supported found the following:

Table 2. BEONC training in five MSP-supported districts evaluated

<table>
<thead>
<tr>
<th>District</th>
<th>Health Centers Trained</th>
<th>Status after 6 months</th>
<th>Status after 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kota Mataram</td>
<td>4</td>
<td>2 fully functioning 3 partially functioning</td>
<td>3 fully functioning 1 partially functioning</td>
</tr>
<tr>
<td>Lombok Barat</td>
<td>4</td>
<td>1 fully functioning 3 partially functioning</td>
<td>1 fully functioning 3 partially functioning</td>
</tr>
<tr>
<td>Sumbawa Barat</td>
<td>3</td>
<td>1 fully functioning 2 partially functioning</td>
<td>2 fully functioning 1 partially functioning</td>
</tr>
<tr>
<td>Sumbawa</td>
<td>4</td>
<td>1 fully functioning 3 partially functioning</td>
<td>3 fully functioning 1 partially functioning</td>
</tr>
<tr>
<td>Kota Bima</td>
<td>3</td>
<td>3 partially functioning</td>
<td>3 partially functioning</td>
</tr>
</tbody>
</table>
The findings in Table 2 are based on routine data and direct observation on the completeness of standard equipment, drugs, and supplies. Signal function 6 (assisted vaginal delivery) was usually not performed due to lack of confidence on the part of the team to do so. Three health centers claim to have tried but failed in two cases, discouraging them from performing that function. For newborn care, the records of the health centers that are not fully functioning show that they referred high numbers of newborns for low birth weight and newborn asphyxia. In this case, the lack of competency, particularly for newborn asphyxia, was the main factor found by the trainer’s assessment. Table 3 shows the pattern in cases handled themselves by the BEONC health centers in the SISKES-supported districts.

**Graph 3. Number of emergency obstetric cases handled by BEONC health centers**

![Graph 3](image.png)

2. **BEONC facility performance**

The results for the availability of the standard inputs ranged from 88% - 100%, meaning that most BEONC facilities had adequate inputs to provide the services. To monitor performance, the availability of the SOPs and actual referrals were then monitored.

SOPs for the five types of obstetric and two types of neonatal emergency are crucial for clinical performance. The program helped to disseminate the “Practical Guideline for Maternal and Neonatal Care” published in 2002 by the MoH in collaboration with the National Network of Reproductive Health Training (JNPK) to all health centers and midwifery clinics in 2007, and during an initial visit one month after training the team found that all health centers had a copy. However, the clinical algorithm translating portions of this into SOPs was only available for post partum bleeding, management of pre-eclampsia, and low birth weight care for the
newborn. The clinical algorithms for ante partum bleeding and initial assessment for newborn asphyxia were still missing.

The DHO in collaboration with IBI therefore took the initiative to draft two algorithms using the training module and the MoH guideline as references. With assistance from SISKES, the DHO presented the draft to the Pediatrics and Obstetrics Associations for final content and design, and a simple printing was disseminated during monitoring visits. In the 6-month post training evaluation, 10 of the 18 health centers had complete algorithms for all five emergency cases. The final visit in early 2009 showed that 12 out of 18 had all five algorithms displayed in the labor room within one year after training.

BEONC functioning was influenced by many factors, but primarily by the leadership of doctors within the trained teams. Without their active involvement, the confidence of other members drops dramatically, and willingness to perform the BEONC services is very low. This is part of the reason that three health centers in Kota Bima and Sumbawa Barat are only partially functioning one year after training. Commitment from the head of the health center is also important to ensure the enabling factors and support from other staff since BEONC services require 24 hours availability. One health center in Mataram lacked this commitment. Another problem observed is that almost all districts in NTB suffer from high turnover of staff, and this seriously hampers the functioning of health center services. This affected the BEONC services in five health centers (Lombok Barat, Kota Bima, and Sumbawa).

Routine data gathered before and one year after training showed that 11 of the 18 health centers had increased the number of emergency obstetric cases handled (Graph 3) while only seven health centers had increased the numbers of newborn emergencies cases managed.

**Graph 4. Number of neonatal emergency cases handles by BEONC health centers**
Overall, the rate of maternal referrals has decreased from 39% to 28% in the 18 health centers. Prior to the BEONC intervention, all but two of the 18 health centers were referring at least 20% of women with complications to hospital\(^{14}\). Afterwards, ten of the 18 were referring fewer obstetric complications (Graph 5). For neonatal emergencies, however, only two health centers decreased their referrals, and three health centers referred no cases at all (Graph 6).

**Graph 5. Number of obstetric emergencies referred, before and after BEONC training**

![Graph 5: Number of Maternal Cases Referred](image)

**Graph 6. Number of neonatal emergencies referred, before and after BEONC training**

![Graph 6: Number of New Born Cases Referred](image)

\(^{14}\) The MOH indicator is 15% of all women ought to be referred to the next level of care.
The type of referral cases has shifted. Before the training, all pre-eclampsia and prolonged labor cases were sent to hospital for final treatment, and most cases of newborn asphyxia were directly sent to the hospital without proper preparation. As a result, the condition of some patients had worsened by the time they arrived in the hospital, resulting in permanent disability and sometimes even death in less than 1 hour after arriving in the hospital. After the training, the health centers prepare cases better that need to be referred since they are now able to predict the patient condition when they arrive in hospital. These shifts are often not evident in secondary data and are best explored in staff interviews as the narrative shows.

Below is a listing of emergency cases presenting to a selection of BEONC health centers in the first year following the training. The PHO report, however, that new born cases have increased in most facilities, whether or not they BEONC facilities. This is reflected as well by the increase in neonatal mortality reported.

### Table 3. Numbers of obstetric cases handled in health center in 2008

<table>
<thead>
<tr>
<th>Health Center</th>
<th>Tanjung Karang</th>
<th>Kediri</th>
<th>Taliwang</th>
<th>Alas</th>
<th>Paruga</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. of cases handled in 2008</strong></td>
<td>No of cases</td>
<td>Refer</td>
<td>Out-come</td>
<td>No of cases</td>
<td>Refer</td>
</tr>
<tr>
<td><strong>Severe pre-eclampsia</strong></td>
<td>17</td>
<td>11</td>
<td>16</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td><strong>Eclampsia</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Uterus Atoni</strong></td>
<td>14</td>
<td>-</td>
<td>19</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Placenta Retention</strong></td>
<td>13</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td><strong>Retained Product of Uterus</strong></td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td><strong>Low Birth Weight</strong></td>
<td>7</td>
<td>3</td>
<td>† (3)</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td><strong>Newborn Asphyxia</strong></td>
<td>31</td>
<td>-</td>
<td>† (2)</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

These BEONC facilities claimed no maternal death in 2008 (except for Kota Bima), and data from Kota Mataram show that none of the five maternal deaths recorded in 2008 came from a BEONC health center. Anecdotal evidence suggests that most death cases were due to a late response at hospital rather than a late referral from these health centers (Confidential Enquiry of Maternal Death report, Lombok Barat, 2009). The capacity of health centers to handle cases that were previously referred has improved after training. For newborn emergencies, by contrast, it was found that late referral from a BEOMC health center to hospital was sometimes delayed by family members slow to agree to the referral.

It may be that BEONC intervention has improved case management of obstetric emergencies but not necessarily the management of newborn emergency cases. There is the possibility that through the training, health center personnel have lost confidence in handling newborn cases and are more aware of the risks of referral to hospital.

The results of cases referred found no difference between the teams who received the full training package (6 days training with 14 days of internship) and the team who only attended class training.

E. Program costs

There are differences in the overall unit costs for each health center of training, internship, and monitoring activities. JNPK emphasizes team work¹⁶ rather than individual training, and each health center sent 3 or 4 staff to training for a total of 12 participants per training and 3 to 4 health centers per training batch.

Direct costs include the expenses paid directly to the training center in the provincial capital to cover trainer’s fee, stationery, modules, room rent, and meals for participants and trainers.

¹⁶ For both BEONC and PONEK training.
Accommodations are also direct costs for those coming from Sumbawa Island (Sumbawa Barat, Sumbawa and Kota Bima) to Lombok for training.

Indirect costs include participant travel costs from district to province and all related expenses for the DHO committee (i.e., transportation from the district, accommodations, and meals during training). Daily allowances are also an indirect cost.

The internship costs for Mataram and Kota Bima included only local transport for the mentor in the evening during 6 days of training, but in Lombok Barat included 14 full days of internship at the provincial hospital.

All expenses related to training were fully covered by GTZ funds with the exception of Lombok Barat where GTZ covered only 31% of the total cost for training and central government financed the other 69%. The other four districts contributed to local transport costs during training for participants and to the transport costs from sub-district to district.

For the post training evaluation, the major costs are for evaluator fees from the provincial training center, transportation, meals, and additional accommodations when evaluation takes place in a district located in Sumbawa Island. Due to the tight schedule of trainers, for Sumbawa and Kota Bima the evaluation was directly supervised by GTZ and the DHO partner using the checklist in Table 1 to evaluate the appropriateness of the services provided and direct observation of the completeness of drugs, supplies and data.

The expenses for regular supervision were also supported by GTZ and the partner for one year after training (mostly for meals) while transportation was covered by district budgets. Table 4 below shows unit cost per intervention in Indonesian Rupiah per district, except for Sumbawa and Kota Bima where the expenses for supervision were fully covered by local government budget.

Table 4. Unit costs per BEONC intervention, by district, GTZ-focus MPS districts

<table>
<thead>
<tr>
<th>No</th>
<th>Cost Variable</th>
<th>Mataram</th>
<th>Lombok Barat</th>
<th>Sumbawa Barat</th>
<th>Sumbawa</th>
<th>Kota Bima</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Training:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct Cost</td>
<td>24,100,000</td>
<td>32,797,500</td>
<td>27,523,000</td>
<td>27,885,000</td>
<td>25,563,000</td>
</tr>
<tr>
<td></td>
<td>Indirect cost</td>
<td>1,050,000</td>
<td>1,350,000</td>
<td>6,040,000</td>
<td>4,581,000</td>
<td>6,744,000</td>
</tr>
</tbody>
</table>
To answer the question whether unnecessary referral has decreased through this intervention, we have focused on post partum hemorrhage due to atonic uterus and retained products of conception and the management of newborn asphyxia because the training emphasized early detection and proper local management of these cases which should reduce need for referral.

Comparing one year before with cases after training completion, the data show a decrease of 17% for post partum hemorrhage referral and 12% for newborn asphyxia. It is assumed that this means that those cases no longer referred were effectively handled directly at the BEONC health center. The length of stay in hospital decreased by an average of 2 to 4 days for the maternal patients and 3 to 6 days for the newborns\(^\text{17}\).

\[^{17}\text{Verbal estimates by hospital and provincial health staff.}\]
As a result, the costs for hospitalization were saved both for hospital insurance of patients covered under Jamkesmas (social health insurance for the poor) and for related expenses of the caretaker during a stay in the hospital averaging Rp. 1,232,000 (88€) in total cost. The following table (5) shows the cost deferred by avoiding hospitalization:

<table>
<thead>
<tr>
<th>Cost Variable</th>
<th>Min</th>
<th>Max</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct cost in hospital</td>
<td>149,000</td>
<td>400,000</td>
<td>274,500</td>
</tr>
<tr>
<td>Indirect Cost:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient transport to hospital</td>
<td>40,000</td>
<td>1,125,000</td>
<td>582,500</td>
</tr>
<tr>
<td>Family transport (has to be recalculated on roundtrip cost)</td>
<td>0</td>
<td>150,000</td>
<td>150,000 (?)</td>
</tr>
<tr>
<td>Meals for family (50 IDR/day for 1 caretaker)</td>
<td>200,000</td>
<td>300,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Total</td>
<td>580,000</td>
<td>1,975,000</td>
<td>1,232,000</td>
</tr>
</tbody>
</table>

*Table 5*

It can be concluded that the improvement of emergency services in health centers can contribute to efficiencies through the reduced length of stay in hospital and reduced hospitalization costs.

**F. Lessons learned**

The full package of training that includes internship and monitoring has shown no clear trend to decrease referred cases after one year of evaluation. There is a need for continued investigation, up to 3 years after the training, to watch for this trend.

The combination of training followed by post training evaluation and regular monitoring shows more positive results in terms of clinical performance than a single training intervention only.

Additional days for internship at the training venue (provincial hospital) did not provide the expected result of decreasing referrals, perhaps because the internship experience depends on the availability of emergency cases during the 14 days of internship.
Compared with individual training, the team based approach as suggested by the program shows more positive results in increasing the confidence of health centers to handle maternal and newborn emergency cases.

Emphasis on monitoring six months to a year after training could improve the functioning of the health center to perform basic emergency care since scheduled monitoring revealed real efforts to improve performance.

G. Recommendations

There is a need to modify the internship program to improve team confidence in handling emergency obstetric and newborn cases through continuous coordination between trainees and trainers through regular visits for on-the-job training at the work place or by follow up of the cases referred by the team so as to be able to perform the treatment in hospital under direct supervision from the trainer. This approach could reduce internship costs and days and ensure the availability of proper cases to improve competence.

To ensure the functioning of basic emergency maternal and newborn care services, a monitoring system to measure service performance needs to be developed by analyzing the six basic obstetric care functions and two additional basic functions for the newborn through routine data collection and regular supervision (using the MoH format).

It is absolutely necessary that staff rotation be permitted only among the BEONC facilities.

The BEONC health center could function optimally (24 hours per day, 7 days a week) if there is more than one team available. Therefore, an additional team consisting of one medical doctor, a competent midwife, and a nurse should be considered for BEONC health centers. While waiting for the training budget to be approved, the current team could do on-the-job training of the selected candidates.

Uninterrupted availability of essential equipment, drugs, and medical supplies must be ensured for functioning of the BEONC services. It is essential to avoid delayed proposals and procurement at DHO level since facility completeness is important for the services to function.

This intervention that focused largely on service level showed little result in terms of improvement of newborn health. For that, it should be combined with a community empowerment program to minimize treatment delay from the community side.
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3. Program Progress Review SISKES 2009


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7. Block 2 Modul of Hospital Management Training

8. JHPIEGO/Maternal & neonatal Health Program: Guideline for Assessment of Skilled Provider after Training in Maternal and Newborn Healthcare, 2004