Report on Training in Helping Babies Breathe and Essential Newborn Care in the Ashanti Region

By

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Acronyms and Abbreviations

BCG	Bacillus Calmette - Guerin vaccine
CHAG	Christian Health Association of Ghana
DHA	District Health Administration
ECEB	Essential Care for Every Baby
HBB	Helping Babies Breathe
HBS	Helping Babies Survive
KATH	Komfo Anokye Teaching Hospital
NMR	Neonatal Mortality Rate
OSCE	Objective Structured Clinical Examination
USAID	United States Agency for International Development
WHW	Women's Health to Wealth

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Ms. We would want to express our sincere gratitude to Dr. Yeboah- Awudzi, the Kumasi Metro Director of Health Services for the facilitative role he played in the release of his trainers to support the lead team in this effort.

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Furthermore, we would want to commend the hard work and dedication of the District Directors and their staff for their participation and making the training a success.

Abenaa Akuamoa-Boateng August 15, 2015

Executive Director, WHW

1.0 INTRODUCTION

1.1 Background

In September 2000, the United Nations set eight Millennium Development Goals to be achieved by the year 2015. The fourth of the eight Goals aims to reduce child mortality rate by two-thirds. Globally, more than 40 percent of all nine million under-five deaths occur during the first 28 days of life, referred to as "the neonatal period."[1] The three causes accounting for three-quarters of the three million annual neonatal deaths are infections (36 percent), pre-term births (28 percent) and birth asphyxia (23 percent). [2] Interventions to improve neonatal health are therefore essential, if this Goal is to be achieved.

It is most unlikely that Ghana will achieve the 2015 target for MDG4, despite considerable progress made over the last five years through a number of initiatives and frameworks, including the Child Health Policy[3] and the MDG Accelerated Framework and Country Action Plan.[4] This is largely a result of the high neonatal mortality rate (NMR) of 29 per 1000 live births, eight times that of developed countries.[5]

Ashanti region is the most populous region in Ghana and makes a notable contribution to, unacceptably high neonatal mortality rate stated above. As with all other childhood indicators, any significant reduction in neonatal mortality in the Ashanti region will help reduce the NMR Ghana. The causative factors are numerous and varied and reduce the NMR, actions have to been taken at all levels especially at the community and facility levels.
The key issues identified at the facility level are inadequate knowledge and skills of health workers attending deliveries in neonatal resuscitation, and essential care for newborns and the lack of neonatal resuscitation equipment.

Women's Health to Wealth (WHW), a member of the Women Strong International consortium with a special interest in maternal and newborn health issues and a member of the National Subcommittee on Neonatal Health, decided to address the institutional weaknesses identified

[1] March of Dimes- Neonatal death Retrieved Nov 10, 2014
[2] data.unicef.org/child-mortality/neonatal
[3] Ministry of Health, Ghana: Under 5 Child Health Policy 2007-2015
[4] Ministry of Health, Ghana Health Service: Ghana MDG Acceleration Framework and Country Action Plan
[5] UNICEF: Child info Monitoring the Situation of Women and Children Website

above through a systematic training of health workers attending deliveries in Kumasi metro and the seven surrounding districts between years 2015 to 2017.

In 2014, 266 service providers, 83.4 percent of whom were midwives were trained in HBB in the Kumasi metro . As a follow up to the reports from the two neonatal units in Kumasi and the Komfo Anokye Teaching Hospital MBU that handle all neonatal emergencies in the region, four districts namely, Ejisu-Juaben municipal, Afigya Kwabre, Bosomtwe and Atwima Nwabiagya districts that were found to refer large numbers of neonates with problems to these facilities , were trained and equipped to provide neonatal resuscitation and essential care for newborns within the first 24 hours of birth.

Between the March and June 2015, Women's Health to Wealth (WHW), a humanitarian organization supported the training of delivery service providers in the four districts,

The trainings were organized by WHW with sponsorship from Women Strong International, Johnson & Johnson and the Millennium Cities Initiative.

1.2 Content of the Training

Training content was based on the Helping Babes Breathe (HBB)^{TM} and Helping Babies Survive (HBS) Essential Care for Every Baby (ECEB) curriculum developed by the American Academy of Pediatrics, in liaison with Maternal and Child Integrated Program, the World Health Organization and USAID.

The list of topics taught is as follows:

1. Helping Babies Breathe
    a. Preparation for a birth
    b. Routine Care
    c. The Golden Minute[6]
    d. Improved ventilation with normal or slow heart rate
    e. Monitoring HBB

2. Essential Care for Every Baby[7]

[6] The Golden Minute, is that critical time immediately post-partum when a newborn can asphyxiate without an untrained birth attendant realizing either that he/she is alive or that he/she is in life-threatening danger.

a. Care of the new born within the first 90 minutes after birth, continue skin to skin/monitor breathing/initiate breastfeeding/ prevent disease/assess and classify the newborn (Grey/White zone)
b. Care of well baby (Green zone) Maintain normal temperature/support breastfeeding/advice on breastfeeding problems/begin immunization/reassess baby for discharge/give family guidance and counseling on newborn
c. Care of the baby with abnormal temperature/Under 2000g/breastfeeding difficulty/Care and assessment of a baby who needs extra support (Yellow zone)
d. Care of a baby with a danger sign or recognizing the baby who needs advanced care/referral Recognizing danger signs/Giving antibiotics/Newborn under 1800 kg/Severe jaundice/Seeking advanced care or referral (Red zone)
e. Monitoring ECEB
f. Monitoring ECEB

The list of skills learned included demonstrations on:

- How to prepare for a birth, suction and stimulate a baby to breathe
- Mastery of the bag and mask ventilation
- How to count and assess the heart rate
- Identification of low risk, high risk and sick newborns and their management
- Kangaroo Mother Care[8] for low birth weight babies

Objective Structured Clinical Examinations (OSCE) were used to assess participant's mastery of HBB and ECEB knowledge and skills. This involves the creation of a clinical scenario where trainee has to put into practice the skills learnt. This is a skills based test as opposed pre and post tests that are based on knowledge.

[7] Essential Care for Newborns: Colour zones (white , grey, yellow and red) are used to specify type of care to be provided to the newborn within the first 24 hours of life.

[8] KMC is an early start and continuous skin-to-skin contact between mother and preterm infant for temperature stabilization and breastfeeding as a proven method for increasing survival rates .

2.0 TRAINING DETAILS

2.1 Training Team

The training team was made up of two Master Trainers from the Komfo Anokye Teaching Hospital (KATH), namely, Dr. Priscilla Wobil (Senior Paediatric Specialist) and Dr. Naana A. Wireko Brobby (Paediatric Specialist), assisted by eight trained facilitators from government institutions in the Kumasi metro area, with secretarial support provided by WHW.

2.2 Facilitators

A two-day refresher training for eight facilitators from the Kumasi district and two newly qualified pediatricians from KATH was held on March 18-19, 2015, at the Kumasi Metro Health Conference Room, to prepare them for the training sessions in the four periphery districts. The Master Trainers had selected the facilitators after a similar training for midwives in Kumasi in 2014.

The Master Trainers had selected the facilitators after a similar training for midwives in Kumasi in 2014. The facilitators for the training were as follows:

Drs. Stella Adjei and Akua Afriyie and Mss. Aisha Bawa, Juliet Yeboah, Kate Bledjumah, Benedicta Quainoo, Marian Akunnor, Lydia Ampomah Amoako, Efua Anderson and Ayishetu Yakubu.

2.3 Pre training Survey

WHW as prerequisite to the training conducted a survey to obtain information on all facilities irrespective of ownership and health staff providing maternity services in each district. The information collected from the facilities were as follows:

- Number and category of staff providing delivery services
- Number of babies delivered in 2014 by number of live births, still births (fresh and macerated) and neonatal deaths
- Length of stay on lying-in ward by mother and baby before discharge
- When and what vaccinations / prophylactic medications are given to newborns
- Number and type of resuscitation equipment available and their state
- Number and type of staff trained in neonatal resuscitation and new born care staff within the last three years

- Number and staff trained in breastfeeding management and
- Certification status of facility as a "Baby-Friendly Facility"

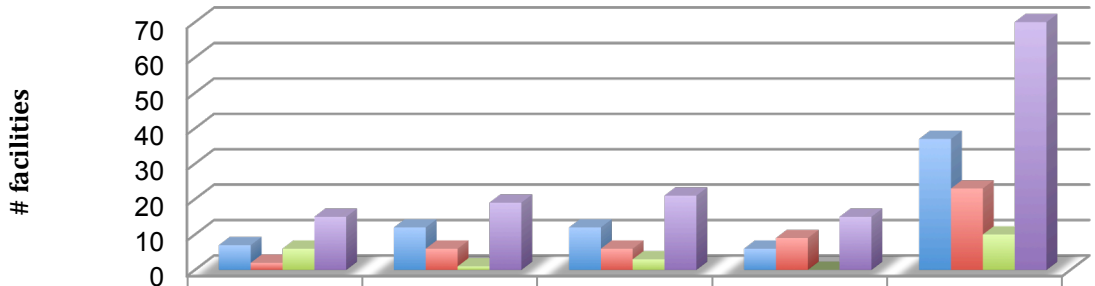
This information was quite relevant in during the preparatory stage to get the best out of this collaborative effort. It helped the facilitators and organisers understand the current status of facilities and trainees and also put the facilities in readiness for the training workshop. See Annex 1 for detailed information on facilities surveyed.

2.4 Facilities trained

A total of 70 such facilities were identified during the survey. Feedback from the survey indicated that none of the 70 facilities had received any training in neonatal resuscitation or essential newborn care with the last three years. We therefore decided to train all the facilities to ensure that the midwives had the current information, skills and knowledge to save newborns. About 53 percent of the facilities trained are government-owned, 32.9 percent are privately owned institutions, and the Christian Health Association of Ghana (CHAG), represented by the Catholic and Methodist missions, own 14.3 percent.

Fig.1 below shows that the Ejisu –Juaben municipality had the largest number of institutions trained.

Fig.1: District Distribution of Facilities trained, according to Facility Ownership



	Bosomtwe	Afigya Kwabre	Ejisu-Juaben	Atwima Nwabiagya	Total trained
Govt	7	12	12	6	37
Private	2	6	6	9	23
CHAG	6	1	3	0	10
Dist. Total	15	19	21	15	70

Source: Field data June 2015

With the exception of the Atwima-Nwabiagya district, where three of five trained facilities were privately owned, government institutions ranks tops in the remaining districts. Bosomtwe district has the highest number of trained facilities as CHAG institutions.

2.5 Training Site and Dates

Below is the summary of the venue and dates for the training sessions held in the four districts.

SNo.	District	Venue	Date	
1.	**Bosomtwe** Session I Session II	 DHA, Conference room Midwifery School, Pramso	 March 25-27 March 31- April 2	
2	**Afigya Kwabre** Session I Session II	 Ankaase Library Family Care Hospital	 April 8-10 May 6-8	
3	Ejisu-Juaben Session I Session II	 Dist. Assembly Hall, Ejisu Dist. Assembly Hall, Ejisu	 May 13-15 May 20-22	
4.	Atwima Nwabiagya Session I Session II	 Dist. Assembly Hall, Nkawie Dist. Assembly Hall, Nkawie	 May 27-29 June 3-5	

WHW's target was to train at least 80 percent of staff performing deliveries, especially midwives, in HBB and ECEB. The training was targeted towards midwives as they conduct over 95 percent of all deliveries in the districts. Our calculated estimates showed that the training should cover at least 60 midwives in each district, with 30 participants to be covered in each three-day session.

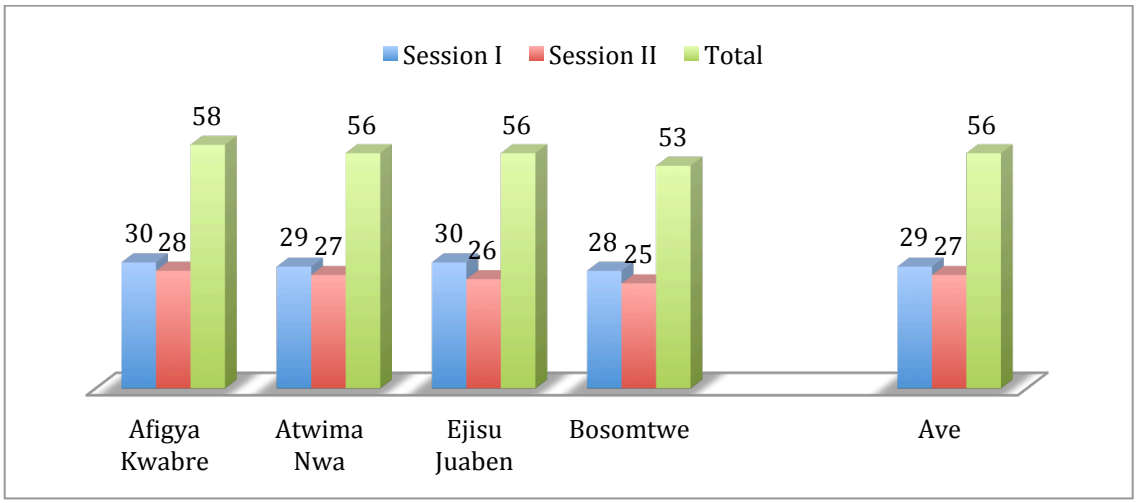
The facilitation team per session was made up of a Master Trainer, four facilitators and two WHW support staff. Altogether, a total of eight sessions were held in the four districts and attended by 223 participants.

2.6 Participants

Participants were selected from facilities providing maternity services in the district. Fig. 2 on page eight indicates with the exception of the Bosomtwe district, the training sessions in the three other districts had slightly better attendance though none of the districts met the target of 60 participants for the two sessions. Overall the largest number of participants was registered in the Afigya Kwabre district.

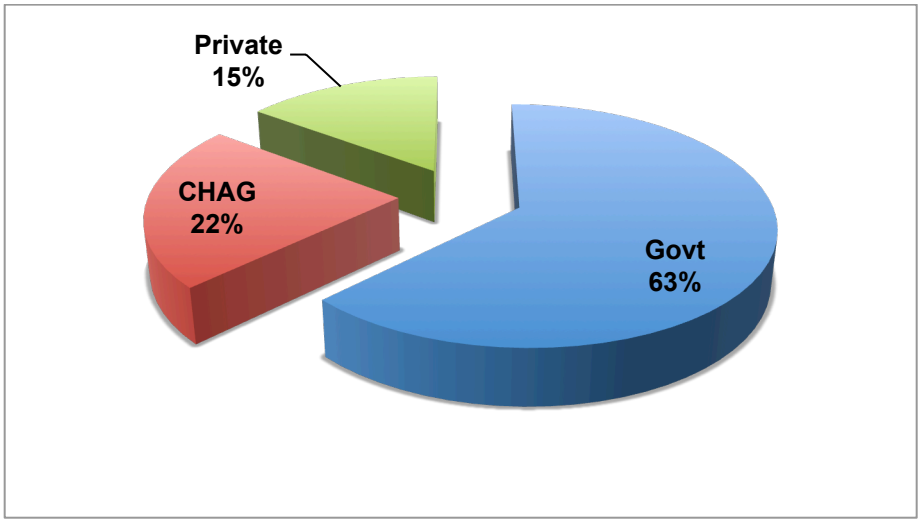
A total of 223 participants representing 92.9 percent of the expected 240 participants were covered in the eight sessions spread over a period of 24 days. See Appendix 2 for details of participants.

Fig. 2: Distribution of Participants by Sessions per District



Source: Field data, June 2015

Fig.3: Distribution of Participants according to Ownership of Institution

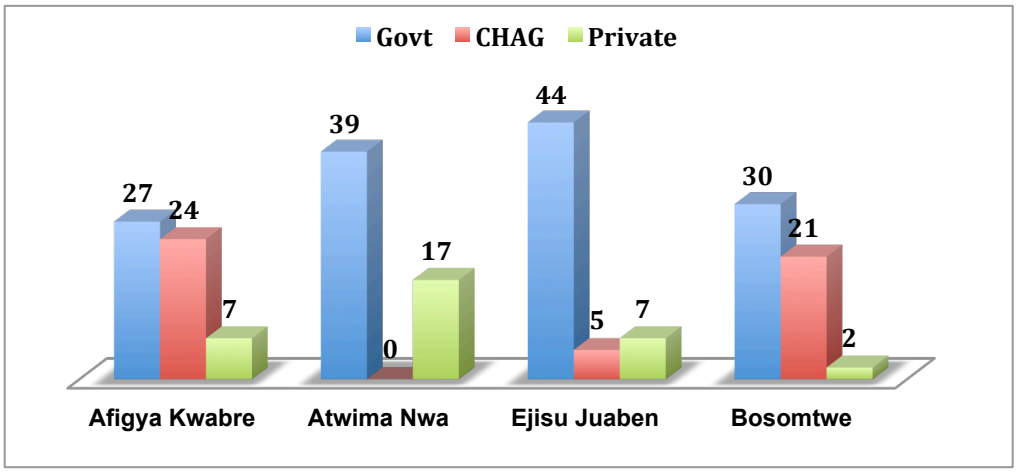


Source: Field data, June 2015

A total of 140 participants, representing three out of every five trained, were from a government-owned institution, while 50 trainees, representing 22 percent, came from mission hospitals, and 33, representing 15 percent, work at private clinics and maternity homes.

Fig. 4 below shows that the Afigya Kwabre and Bosomtwe districts account for over 94 percent of trainees from the CHAG institutions. This is due to the fact that Ankaase Methodist Faith Healing Hospital and St. Michael's Catholic Hospital, respectively, are the major health institutions providing maternity services in the two districts.

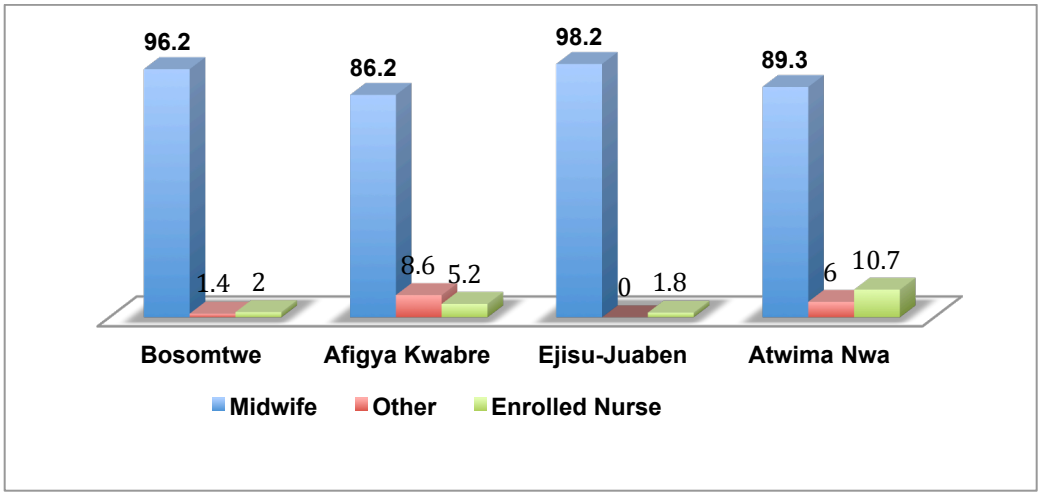
Fig.4: District Distribution of Participants by Ownership of Institution



Source: Field data, June 2015

Category of Staff Trained

Fig.5: Category of staff trained by district



Source: Field data, June 2015

206 participants, representing 92.4 percent of all attendees, are midwives, whiles 2.3 percent are enrolled nurses, and 5.4 percent are other health staff that assist with deliveries. The proportion of participants who are midwives ranged from 86.2 percent in the Afigya Kwabre district to a high of 98.2 in the Ejisu-Juaben district.

3.0 OBJECTIVES OF THE WORKSHOP

The **goal** of this workshop was to train midwives in knowledge, skills and attitudes required in neonatal resuscitation and essential newborn care.

3.1 Specific Objectives

The specific objectives were that, at the end of the training, trainees would be able to:

1. Describe and demonstrate how to prepare for a birth and Help Babies Breathe within the Golden Minute, that critical time immediately post-partum when a newborn can asphyxiate without an untrained birth attendant realizing either that he/she is alive or that he/she is in life-threatening danger.
2. Demonstrate mastery of bag and mask ventilation and successfully complete skills evaluation forms
3. Identify key ECEB messages and successfully carry out all exercises.
4. Demonstrate mastery of essential newborn care and successfully complete skill evaluation forms
5. Identify indicators to measure results of outcomes of HBB and ECEB in their facilities
6. Care of the preterm/low birth weight baby using Kangaroo Mother Care
7. Describe risk factors, causes and management of newborns infections
8. Describe and apply general infection prevention and standard precautions, as well as newborn infection prevention practices.

3.2 Learning Methods

A variety of learning methods were used throughout the workshop.

Interactive presentations, case studies, brainstorming, small group discussions, role-plays and video presentations were all enlisted to provide knowledge on newborn care. Knowledge was assessed using pre and posttests and case scenarios.

The following methods were also used to teach skills: skill demonstration and simulated practice using the “Neonatalie” mannequins designed specifically for the HBB training by Laerdal. Acquired skills were assessed using case studies and direct observation.

For attitude development, learning methods used were role-playing, case studies and patient provider interaction and discussion.

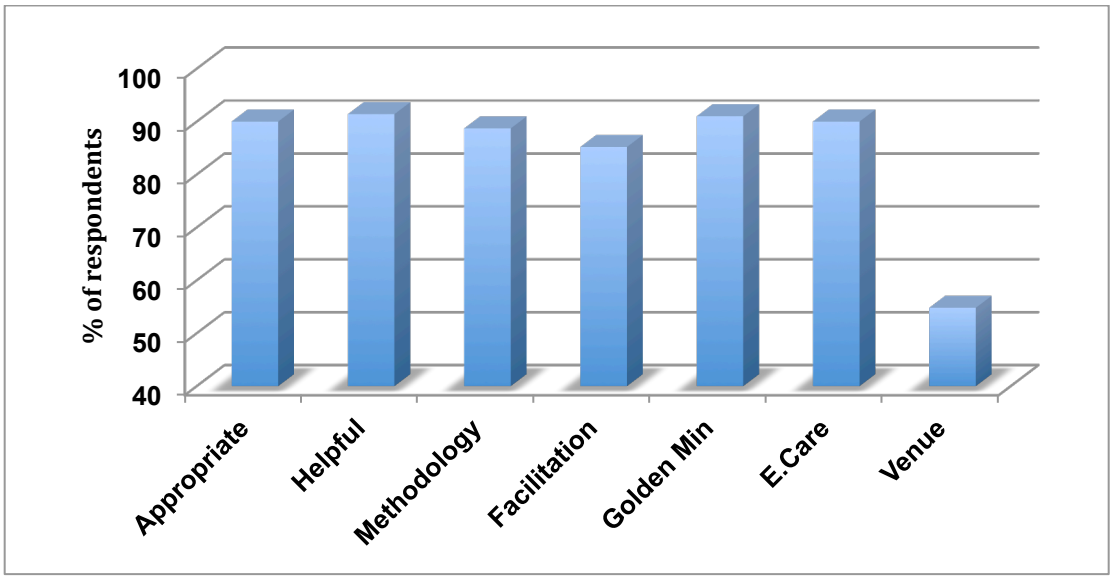
3.3 Materials and Equipment

During the training each group of six trainees and one facilitator had a complete set of materials, drugs and three mannequins with which to demonstrate and to practice the skills being taught. Each facility was given resuscitation equipment and other relevant material for newborn survival, based on the average number of deliveries per month. (See attachment for detail.)

4.0 EVALUATION

4.1 Evaluation by Participants

Fig 6: Workshop evaluation by participants



Source: Field data, 2015

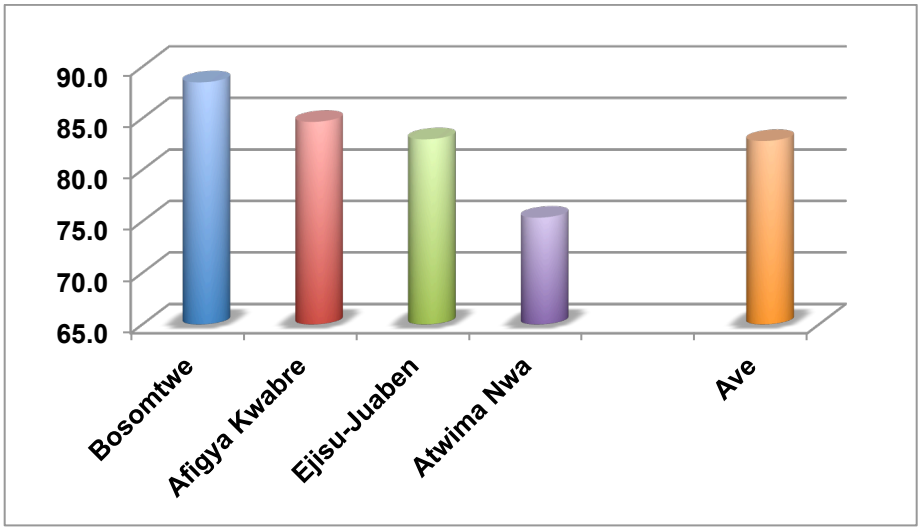
- Over 90 percent of participants strongly agreed that the training very appropriate and helpful and that the methodology and teaching aids were used skillfully to assist them understand the subject matter.

- 92 percent of participants strongly agreed that they had mastered the skills required for the Golden Minute and Essential Care.

- 4 out of 5 participants strongly agreed that the facilitators were knowledgeable and communicated simply and clearly.

- Only 5 out of 10 participants were quite content with the training venue. The worst rating was for the two districts, Ejisu – Juaben and Atwima –Nwabiagya, which held their sessions at the District Assembly Hall, where there were major issues with seating arrangements (seats were fixed and could not be moved into a more convenient form).

Fig 7: Workshop evaluation by districts



Source: Field data, 2015

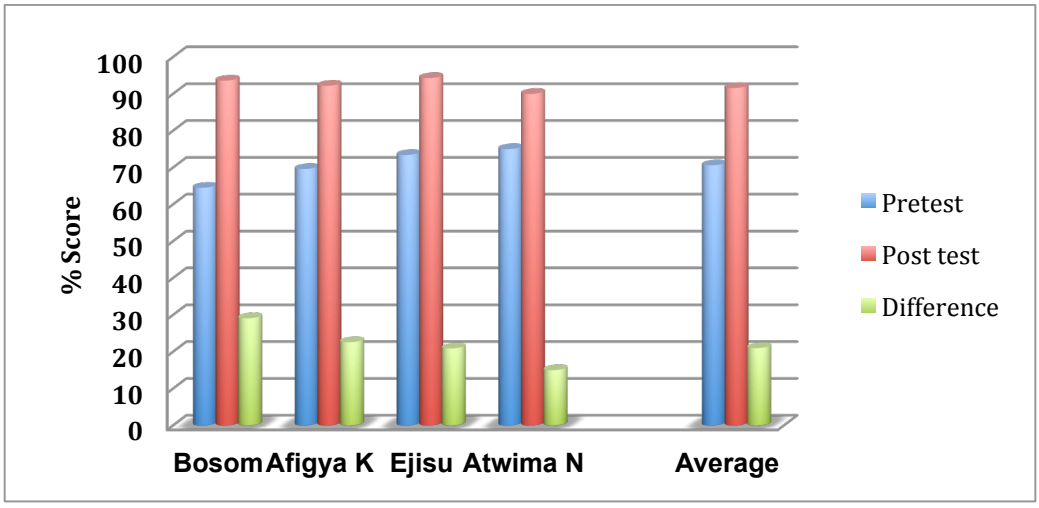
Fig.7 above shows the overall ratings by district, making clear that the worst rating was accorded the Atwima Nwabiagya district, which scored below the average of 82 percent. This can be attributed to major planning issues with the venue, energy availability for video sessions and selection and notification of participants that were to be done by the District Health Management Team.

4.2 Evaluation by facilitators

Knowledge tests were conducted before and at the end of the HBB and ECEB sessions to assess participants' levels of knowledge. Skills tests were also conducted at the end of the HBB course on Day 1 and for the ECEB on Day 3.

Fig. 8(i) and 8(ii) on the next page shows the average scores for HBB and ECEB tests for participants. Generally, it shows that participants in all districts gained significant knowledge in the two subject areas aimed at addressing asphyxia, infection prevention and low birth weight and its attendant issues in the newborn.

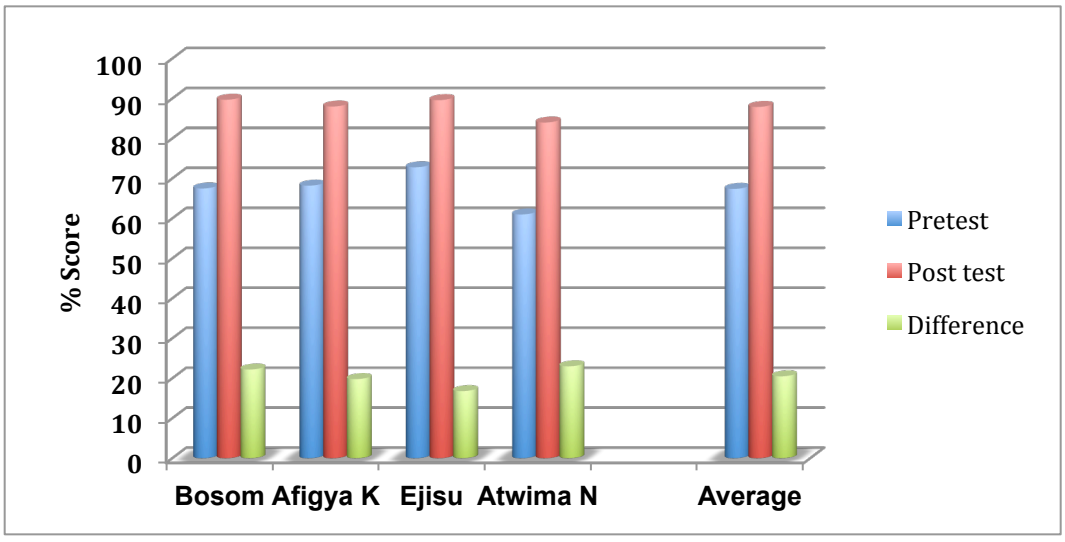
Fig 8(i): Results of HBB Knowledge Tests



Source: Field data, 2015

Fig 8(i) above shows that an average of 20 percentage increase in knowledge in management of asphyxia was recorded with the highest of 29.1 percentage points in Bosomtwe district and the lowest of 15 percentage points in Atwima Nwabiagya.

Fig. 8(ii) Results of ECEB Tests



Source: Field data, 2015

Fig 8 (ii) above shows that considerable knowledge was gained by participants in all the four districts in the provision of essential care for newborns. However, it is worthy of note that the average scores for both the pre- and post-test in HBB were greater than those for ECEB.

The knowledge gained in HBB ranged from a low of 15 percentage points in Atwima Nwabiagya to a high 29.1 percentage points in the Bosomtwe district. For ECEB, the range was from 16.8 percentage points in Ejisu-Juaben to 23 percentage points in the Atwima Nwabiagya district.

It appears from these results that participants were better able to grasp and understand the knowledge and skills required to address asphyxia in newborns that accounts for 23 percent of neonatal deaths while they had a major difficulty with ECEB that addresses infection and preterm birth responsible for the greater proportion of deaths.

There is therefore the need for subsequent follow up activities to concentrate on assisting providers to hone their knowledge and skills in that area. There may be the need to consider an additional day to be added onto subsequent training schedules to allow more time for that subject.

At the end of the training workshop, the Master Trainers awarded certificates to all participants.

4.3 HBB reporting arrangements

WHW had the opportunity to walk participants through a reporting format designed to capture the relevant detail on HBB and fresh stillbirths, given that one of the major reasons for this training is to help reduce the incidence of fresh stillbirths**.** The aggregation and analysis of data collected from the districts will be carried out monthly and results shared with the facility and DHMT for their information and corrective action.

Ghana Health Service already has a reporting format in place for recording infections and deaths in newborns. There is however the need for a similar evaluation form to be developed for supervising and monitoring the skills of providers in the provision of ECEB.

5.0 DISCUSSIONS AND RECOMMENDATIONS

5.1 General problems identified

Both participants and facilitators identified the issues listed below as major challenges hindering effective newborn care in the facilities during the pre-training survey and during the training sessions

1. Poor newborn resuscitation skills. Generally midwives who had been on the job for more than three years, enrolled nurses and the midwives in the remote one-man stations had poorer skills and knowledge than their counter parts in bigger institutions.
2. Lack of neonatal resuscitation equipment: None of the institutions trained had the requisite ambu bag and masks for neonatal resuscitation.
3. Unacceptable and harmful modes of newborn stimulation
4. Very poor knowledge of neonatal jaundice & common newborn problems
5. Breastfeeding misconceptions

[The problems listed above were addressed through the training workshop, and each of the 70 facilities trained was provided with a neonatal resuscitation kit. See Appendix 3 for details.]

6. Only 12 out of the 70 facilities trained, representing 17.1 percent of participants, were routinely administering Vitamin K injections to newborns, and fewer than 10 out of the 70 facilities were administering prophylactic eye drops to newborns.
7. The majority of the facilities reported the administration of the oral polio vaccine to newborns before being discharged after delivery. However, none of the facilities provided routine administration of the tuberculosis (BCG vaccine) to babies at birth. The majority of newborns receive this vaccine after the first week of life, while just about one in five babies receive it within the first week of life.
8. Lack of recommended and safe modes of transporting sick newborns: Majority of the facilities were depending on public transport especially taxis for emergency transportation of sick newborns and such newborns are usually swaddled in cloths rather than placed in KMC position during transport.
9. Delivery Record books do not have designated columns for recording important data such as the following:
    - For pregnant women:
        - Labour complications, e.g., premature rupture of membranes

        - Delivery complications
        - Indications for Cesarean sections
    - For newborns:
        - Resuscitation of newborns
            - Suction and stimulation
            - Bag and mask ventilation
        - Referrals and reasons for referral
        - Administration of Vitamin K injections and the prophylactic eye care
        - BCG and oral Polio vaccinations

5.2 Recommendations

Participants together the training teams proposed the following recommendations to address the challenges listed above:

- A small section in each of the labour/delivery room should be identified as the newborn area, where the resuscitation table and equipment can be set up.
- A cheap source of warmth and light would be connecting yellow onion bulbs directly above each resuscitation table.
- Each district should be assisted in setting up a small newborn unit, preferably a Mother-Baby-Unit, to handle simple newborn problems in its major/district hospital.
- Parenteral Vitamin K and antibiotic eye ointment should be made available at every facility as a matter of emergency and given to every baby at birth. The Ghana Health Service should advocate for these to be covered by National Health Insurance Scheme.
- The District Health Administration should make arrangements to provide all facilities with updated Delivery Record books that capture all relevant and vital information on mothers and newborns.
- The District Public Health Unit should ensure the availability and enforce the administration of BCG and oral Polio vaccines to newborns **within 24 hours of birth**.
- Quarterly Monitoring and Evaluation visits should be organized by District Health Clinical Team to assess how well the participants are practicing what they were taught.
- A regular and systematic update on newborn care should be institutionalized into facility training programs.

Conclusion

The HBB and ECEB training package addresses the three main causes of neonatal deaths namely infections, preterm births and birth asphyxia. Much as this training sought to train all midwives conducting deliveries in the districts covered, we are very much aware that there are many other types of assistants who conduct deliveries who were not covered under this training and need to be trained. We propose that, the two new born coordinators identified for each district at the district hospital, plan and conduct a training for such staff within the six months with the support of the ToTs.

We also acknowledge the fact that there is there need for half yearly refresher training for the trained personnel to help them retain and upgrade their knowledge and skills and would encourage the Medical Superintendents of the trained facilities to prioritize this activity in their plans of action.

Beyond the initial training, there is the need for regular facilitative supervision at the facility level to ensure that trainees put knowledge and skills into practice and gradually eliminate the unacceptable practices that puts babies at risk of disability and death. This and regular monthly meetings at the facility level to discuss newborn care issues would go a long way to enhance the sensitivity and skills of staff to address perinatal and neonatal deaths. The lessons learnt through such exercises will assist the facility with useful information to develop long-term policies to improve neonatal health care.

We therefore wish to appeal to the Ghana Health Service and other like-minded health partners to institutionalize and fund at least half yearly training programs at District level to update and upgrade the knowledge of service providers in newborn care issues namely the management of asphyxia, infections and low-birth weight babies at the community and facility levels.

The training was a worthwhile experience as it brought to the fore serious issues compromising the life and health of newborns that can be addressed by a knowledgeable, skillful midwife who has access to the right equipment and other logistics, including adequate supervisory support.

Annex 1