

IMPLEMENTATION OF ESSENTIAL INTRAPARTUM AND NEWBORN CARE AMONG HEALTH CARE PROVIDERS

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Abstract - The Department of Health issued Administrative Order No. 2009-0025 for the nationwide adoption of new policies and protocol on Essential Intrapartum Newborn Care (EINC), an evidence-based systematic intervention for safe and quality maternal and newborn care services to reduce increasing maternal and newborn mortality rate. Adoption of the policy was a challenge to health care providers who were used to the familiar old ways of performing childbirth and newborn care. This study unveiled the health care providers' reported implementation of the EINC protocol among government birthing facilities in the Province of Bukidnon. There were 236 respondents from 30 government birthing facilities of the 21 municipalities in the province of Bukidnon. A questionnaire was used to determine the level of compliance, and stimulants and barriers in the implementation of EINC among the birth attendants. It was found that the over-all self-reported level of compliance to EINC protocol is high. Compliance levels were discussed stratified in four program parameters as well as stimulus and barriers to the program implementation. Recommendations directed to the health department to address the barriers reported by the implementors.

Keywords - Health programs, Maternal and Child Health, Program Compliance

I. INTRODUCTION

Reports of high maternal and newborn deaths were alarming. In a DOH statistics (2003) showed that there were three out of four newborn deaths occurred in the first week of life and nearly about 8,000 newborn deaths accounted to more than 30% of all infant deaths occurred in the first year. Maternal mortality rate, in a similar story, showed that women were placed in one-in-100 risk of dying due to pregnancy-related causes. It was known that fifty one selected Philippine government hospitals had disparity in maternal and newborn care including infection control. In December 2009, the Department of Health issued Administrative Order (A.O.) No. 2009-0025 for a nationwide adoption of new policies and protocol on Essential Newborn Care. This mandate is aligned with the attainment of Millennium Developmental Goal in Maternal and Child Care and to lessen soaring global deaths of children below five years old. Known also as "The First Embrace" (Unang Yakap), EINC is designed to promote evidence-based care eliminating stereotyped newborn care practices such as unnecessary suctioning and bathing instead of carrying out a step-by-step time bound interventions. The old routine care prohibits early mother and child skin-to-skin contact. It was found that this impairs not only the bonding relationship but also the early chance of the newborn getting warmth and being breast fed. Besides, the immediate and sustained skin-to-skin contact decreases neonatal sepsis for it is an early measure of hospital infection control. The old practice of immediate cord clamping was found to have no

benefit to the newborn but actually may result to hematologic diseases on both term and preterm newborns. There was low percentage of breast fed newborns as mothers have less chance of initiating breast feeding due to delays in following the old procedures. Bathing newborn as an old practice is more than 80% exposed to hypothermia. WHO recommends that newborn should be bathed six hours after birth or longer. Vernix caseosa, a protective defense of the newborn, if washed off, increases the risk of E. coli and Group B Strep infection. Irrelevant suctioning of healthy newborns is discouraged as they found that 80% of them were suctioned more than once. The EINC has four core steps namely: immediate and thorough drying of a newborn, early skin to skin contact with the mother, properly timed cord clamping and non-separation of the baby from the mother promoting exclusive breast feeding. This program also ameliorates maternal support and discontinues harmful and fallacy practices such as fundal push, routine episiotomy, routine enemas, restriction of oral intake during labor, routine intravenous fluid insertion and perineal shaving. The protocol allows the child-bearing mother a companion of her choice during labor and delivery, mobility and ambulation during labor, position of comfort during labor and delivery and spontaneous pushing in a gravity-neutral position. The birth attendant is encouraged to use partograph and active management of the third stage of labor. Conversely, non-routine episiotomy are discouraged. Following implementation, reports attest a remarkable decrease of 50% to 75% in admissions in neonatal ICU, reduction of almost 70% neonatal sepsis and 50%

neonatal deaths even in the pilot implementation of EINC. The positive decline of such incidences is accounted to early skin-to-skin contact and non-separation of mother and child. This also austere initiates exclusive breastfeeding rates resulting to 90 to 100% upon discharge, 85% at day 7, 69% at day 28. The adoption of this program also led to favorable rates of safe maternal practices among participating hospitals. However, the effects have not yet been proven to significantly decrease incidence of maternal mortality. Other alluring benefits of this program are cost-reduction and satisfactory birthing experiences both of patient and health practitioners. (DOH-EINC evaluation, 2013). The traditional approach of utilizing single, disease-specific interventions is modified in the new EINC protocol. Connection among mother, newborn, their household and communities is strengthened with provision of quality basic health and maternity services. This is a life-cycle based intervention. Collaboration with government agencies, non-government organizations, private volunteer groups, religious and civic organization and educational institutions is essential considering that each can add to the development of the program through. (DOH, 2009) Health care managers recognize these guiding principles as foundation of behavior conduct in the adoption of EINC. There were, however, lapses in the implementation. After series of thorough investigations, it was found that only 3% of newborns were dried before cord cutting and delayed drying is associated to incidence of breathing disturbances among newborns. This lapse in the implementation may lead to episodes of hypothermia which cascades to infection, coagulation defects, acidosis, delayed circulatory adjustment, hyaline membrane disease and brain hemorrhage. The degree of compliance to the guidelines does not only rely in the health care providers. Healthcare managers should also monitor the staff performance and adherence to this protocol as well as their compliance to appropriate discharge planning. The implementing structure of EINC covers governance, financing, service delivery and regulation. Healthcare managers must also be adept on their roles on this system. Thus this study unveiled the health care providers Essential Intrapartum and Newborn Care self-assessed level implementation.

II. METHODS

The cross-sectional study utilized a descriptive quantitative method of research to determine the implementers' self-assessed level of implementation of Essential Intrapartum and Newborn Care protocol among government birthing facilities of Bukidnon. There were 236 respondents who directly handled birthing procedures in 30 government birthing hospital and lying-in facilities in the province of Bukidnon. These birthing facilities are licensed by

Department of Health and Philippine Health Insurance Corporation.

The study utilized a modified, self-assessment questionnaire anchored on the standardized Intrapartum and Newborn Care Practices assessment tool developed by Sobel, H.L., et. al.(2009). Part I of the tool utilized the standardized tool to measure the level of compliance to EINC practices. Part II contained an open-ended questionnaire response provided for participants to list separately the barriers and stimulants identified in the implementation of Essential Intrapartum and Newborn Care. The researchers were allowed access to the government birthing facilities through permissions from the regulating agencies and hospital administrators prior to the conduct of the study. Research assistants were oriented to the use of the tool and gathered the data through personal contact. Participants were allowed sufficient time to answer the tool. Means and standard deviations were computed and the level of compliance to EINC protocol parameters was interpreted based on the compliance index (Table 1) which was set prior to the study.

Table 1. Compliance index to EINC programs

Score Range	Level of Compliance
1.0 – 1.49	Non-compliant
1.50 - 2.49	Low
2.5 – 3.49	Moderate
3.5 – 4.0	High

Frequency counts, and simple percentages were used to interpret the stimulants and barriers encountered by the health care providers. Pearson-Moment Correlation coefficients were computed to identify relationships of the stimulants and barriers with the self-assessed level of compliance parameters of the EINC protocol.

III. RESULTS AND DISCUSSION

Self-reported level of compliance to EINC protocol
The health care provider's (HCPs) level of compliance to the Essential Intrapartum and Newborn Care program was measured using their response to the following program parameters: 1.) essential intrapartum care, 2.) essential newborn care, 3.) EINC in normal delivery and 4.) EINC in Caesarean Section delivery.

Table 2. HCPs compliance to recommended essential intrapartum care practices.

Criteria	\bar{x}	Level of Compliance
1. Use of various maternal positioning for during labor.	3.12	High
2. Use of pain relief during labor.	1.78	Low
3. Use of antenatal steroids in pre-term labor.	1.54	Low
4. Continuous support during child birth.	3.87	High
5. Frequent hand-washing.	3.97	High
6. Companion choice.	3.33	High
7. Use of partograph.	3.58	High
8. Active Management of Third Stage of Labor (AMTSL)	3.75	High

Table 2 presents the level of compliance of the HCPs to the recommended essential intrapartum care practices based on the EINC guidelines. The summary table revealed that the use of partograph, offering the client the companion of her choice, continuous intrapartum support, employing various maternal positioning to facilitate delivery and frequent hand-washing were among the intrapartum care practices that the health care professionals reportedly employed with the highest level of compliance. The use of pain relief measures during labor and ante-natal steroids for pre-term deliveries were least employed practices among recommended intrapartum care practices. Whenever necessary, the use of epidural anesthesia provides better pain relief during labor as compared to non-epidural or non-relief during labor (Anim-Somuah M, et.al., 2005). Antenatal corticosteroid, on the other hand, is beneficial for preterm delivery or with premature rupture of membranes and pregnancy related hypertension syndromes (Roberts D, Dalziel SR., 2006). Birthing facilities least employ these protocol because aside from the fact that these protocol require above-minimum skill level for the birth attendant, corticosteroids intrathecal anesthetics are uncommon in the delivery rooms of most government birthing facilities.

Among unnecessary practices in the EINC protocol (not in the table), HCPs reportedly do not employ enema, does not shave the client's pubic hair, does not subject them to oral intake restrictions nor the application of fundal pressure over the abdomen during labor with moderate to high level of compliance to the protocol.

Table 3. HCPs compliance to recommended essential newborn care practices.

Criteria	\bar{x}	Level of Compliance
1. Properly timed cord dressing	3.94	High
2. Early initiation of breast-feeding	3.95	High

Health care practitioners reportedly complied with the recommended practices for essential newborn care component of the EINC protocol. When health workers and medical practitioner deliver care in a timely, safe, appropriate and coordinated manner, the likelihood of anemia in term newborns and intraventricular hemorrhage in preterm deliveries is lessened. Equally, it facilitates the newborn's early initiation to breastfeeding and transfer of colostrum (EINC AO 2009-2005). Since the implementation of EINC program, compliance to the guidelines by the HCPs on the provision of quality and time-bounded interventions has been reinforced. Not practicing the unnecessary newborn care practices (not in the table) specifically set in the protocol such as not practicing suctioning, avoiding foot printing, not subjecting the

neonate to early bathing and washing, non-separation of the neonate from the mother and avoiding the use of artificial milk substitutes were reported to be moderate to highly complied EINC guidelines by the HCPs in the birthing facilities.

Table 4. HCPs compliance to 4 core steps in EINC protocol for normal delivery.

Criteria	\bar{x}	Level of Compliance
1. Immediate and thorough drying	3.97	High
2. Early skin-to-skin contact.	3.94	High
3. Properly timed cord clamping.	3.97	High
4. Non-separation of neonate from the mother.	3.94	High

As regard HCPs level of compliance to EINC practices for normal deliveries (Table 4), HCPs seemingly defer the non-urgent practices until the time-bounded ones are carried out. Conversely, it is inadequate to reflect their detailed compliance on the sequence of action enclosed in the four core steps, from the time of perineal bulging until the first six hours of life. But then again the four core components of EINC protocol have been adopted in all participating birthing facilities.

Table 5. HCPs compliance to EINC practices for Caesarean Section delivery.

Criteria	\bar{x}	Level of Compliance
1. Immediate and thorough drying	3.81	High
2. Early skin-to-skin contact.	2.93	Moderate
3. Properly timed cord clamping.	3.89	High
4. Non-separation of neonate from the mother.	3.26	Moderate

Table 5 shows the self-reported level of compliance of the HCPs to the core steps of EINC program for Caesarean Section delivery. It can be shown that the professional birthing attendants clamp the umbilical cord promptly and immediately dry the neonate upon delivery with high level of compliance. The health program defined in EINC clearly emphasized that neonatal period is the crucial phase in the survival and development of a child. Hence, importance of immediate drying, proper cord clamping and cutting significantly affect the quality provision of time bound intervention. However, the practices of early skin-to-skin contact and non-separation protocol between the neonate and the mother were reportedly complied with moderate level of compliance. In some instances early contact may not be available when either the mother (who might have to recover from an operative delivery or suffer from complications) or the baby (who might be in need of special care) as postulated in the Clinical Practical Guidelines on Intrapartum and Immediate Postpartum Care, (2012).

Factors Affecting the Delivery of EINC Program

Stimulants and barriers in the implementation of the EINC program were identified from the responses to open-ended questions pertaining to the same. Content-analysis was performed to acquire mutually exclusive themes from 72 participants who wrote at the 'stimulants' and 122 at the 'barriers' questions of the questionnaire.

Table 6. Factors effecting the implementation of the EINC program.

Factors	f (%)
Stimulants	
1. Ensure quality and efficient services	47 (32)
2. Community education.	20 (14)
Implementer's training.	20 (14)
3. Decreasing trend in MCMR.	17 (11)
4. Expanded treatment options.	12 (12)
5. Implementers' dedication to work.	8 (5)
Good clinical practice.	8 (5)
6. Pregnancy tracking and birth plan.	4 (3)
7. LGU support	3 (2)
Table 6. <i>Factors effecting the implementation of the EINC program. (cont.)</i>	
Factors	f (%)
Barriers	
1. Lacking EINC training.	59 (25)
2. Cultural and religious beliefs.	47 (20)
3. Lacking equipment and supplies.	22 (9)
4. Recipient's level of education.	20 (8)
5. Recipient's pessimistic attitude.	19 (8)
6. Proximity to the health facility.	8 (8)
7. Persistence of home delivery opts.	12 (5)
Recipient's financial constraints.	12 (5)
8. Implementer's time constraints.	7 (3)
Client's/Significant other's choice.	7 (3)
9. Lack of LGU support.	3 (1)
10. Program resistance.	3 (1)

As shown in Table 6, stimulants and barriers were summarized from the responses of the implementers alongside their corresponding proportions. EINC implementers identified the quality and efficient services as the frequently identified stimulant to the implementation of the EINC program. Community educations about EINC services as well as continuous training of the implementers were also identified to reinforce the implementation of guidelines. Knowing and doing can bridge the gaps of Quality and efficient services and brings in facility based deliveries which increases demand for maternal and newborn health services. Likewise, an upshot to the provision of integrated and functional service packages for a more effective and efficient health care needs of mother and newborn underlined in the integrated service delivery as one of the guiding principles for the adoption of EINC protocol. While educating families

and communities on EINC is engaging and mobilizing them as active recipients of services towards development and to take ownership in the process of accessing health facilities for delivery services. Necessary care of mother and newborn Communities need to be strengthened and families need to be supported in order to provide necessary care of mother and newborn. Moreover, to sustain EINC implementation, families need information, skills including social and material support from community to motivate them in this new practice (Training Modules on Promoting Effective Perinatal Care, 2002). Correspondingly, it emphasizes the delivery of essential services and the implementation of improved practices which is critical to the success and implementation of EINC protocol. On the other hand, continuous training of HCPs, appropriate information with training beneficiaries has been established that the improved skills and knowledge led to improvement in clinical practice (Innovative Approaches to Maternal and Newborn Health, Compendium of Case Studies, 2013).

Providing quality, effective and efficient care, making the public cognizant and HCPs knowledgeable on EINC benefits both pregnant women and HCPs. As stated in EO 2009-0025, adherence to the specific policies and principles on the prescribed systematic implementation of interventions reduce preventable neonatal deaths and maternal mortality. As a result, mothers and newborns will benefit from safer, quality care from right access to healthcare (Dr. Silvestre, the EINC Team Convener and WHO Consultant).

Barriers such as the implementers lack of EINC training, cultural and religious beliefs of the recipient and lack of equipment and supplies were identified to greatly affect the implementation of the EINC program in a negative way. Some implementers also claim that they lack operational training which adversely affect the delivery of the EINC program. Training is both a means and ends to sustain the delivery of essential services greatly backed risk reduction to maternal and newborns mortality. Furthermore, it convey correct knowledge, skills and attitude by exhausting appropriate strategies for adoption and compliance of the protocol for safer and quality care of birthing mothers and newborn. Hence, it is imperative for HCPs to obtain maximum working training and tutelage on the significance of implementation of the prescribed systematic intervention globally accepted evidence-based EINC. While, cultural and religious belief had been the logjam in the implementation of EINC because of continuous disparity in pregnancy and birthing practices, which calls for wide extent of information on survival activities of maternal and newborn using EINC approach through social mobilization, largely the underserved groups. Meanwhile, Highlighted in the implementing mechanism of EINC protocol under financing is the mobilization of funds from national and local level to employ provision of necessary

equipment and supplies. Up till now, the lack of equipment and supplies had been the bottleneck to fully implement the EINC protocol among health facilities and by HCPs.

Correlates to Barriers and Stimuli of EINC Protocol Compliance.

Pearson product moment correlation analysis was performed among identified, self-reported, barriers and stimulus to the implementation of EINC program. Among self-reported stimulants to the EINC implementation, the following factors were positively associated to the following intrapartum parameter scores: assurance of quality and efficient services stimulus ($p < 0.05$), implementer's dedication to work stimulus ($p = 0.034$) and community education of the EINC services stimulus ($p < 0.05$). On the other hand, appropriate practices in new born care was associated to the assurance of quality and efficient services stimulus ($p < 0.05$). Apt implementation of EINC practices ensure quality and efficient services to mothers and newborns which greatly contribute to the goal of reduction on infant and maternal mortality. Likewise, make way to a lasting improvement of quality and extent of mother and child health care, greater patient satisfaction, increase use of public health services and in all probability, an overall most cost-effective delivery of health care (Training Modules on Promoting Effective Perinatal Care, 2002). Meanwhile, implementers' dedication to work is the driving force to make adoption and implementation of EINC consistent with the specific policies and principles outlines in AO 2009-0025 for health care providers with regards to systematic implementation of interventions that address health risks known to lead to preventable neonatal deaths. In like manner, community education serves as catalyst to effect EINC implementation since primary responsibility of family and community is to ensure that every pregnant woman receive maternal and perinatal care. Furthermore, pregnancy and birth are normal physiological events and to implement perinatal care intervention, its centered is on information, motivation and participation of the whole family and local community (Training Modules on Promoting Effective Perinatal Care, 2002). Barriers such as: lack of EINC training for implementers ($p = 0.016$), proximity issues to the health facility ($p < 0.008$) were positively associated to unnecessary practices in the intrapartum care. Implementers' constraints about time ($p = 0.025$) was negatively associated to employing the recommended practices of the EINC program for intrapartum care practices. Among newborn care practice parameters, barriers such as: deficiencies on the training of implementers ($p = 0.042$), cultural and religious belief of the recipient ($p = 0.004$), proximity issues to the health facilities ($p = 0.021$) and recipients' lack of education about EINC services ($p = 0.014$) was positively associated to employing unnecessary

practices in new born care by the implementers. Training for HCPs in the implementation of EINC protocol is essential to effect change in the practice of maternal and newborn care among healthcare facilities. Learned knowledge is not obtained on a one time setting but it is accumulation of training after training. A case study in Sierra Leone highlighted the intensive and far more comprehensive training of involved cadre of health workers of all target facilities providing Emergency Obstetric Newborn Care. The training modules involved lectures and content of breakout sessions, discussions and demonstrations which is standard and also contains practical details of the course structures. Furthermore, all of their case scenarios were based on actual everyday experience for all health cadres involved in obstetric and newborn care. The results have shown significant change and improvement in knowledge and skills which led to improvement in clinical practice (Innovative Approaches to Maternal and Newborn Health, Compendium of Case Studies, 2013). Strengthened training of HCPs provides continuum health care of mothers and newborn during and after delivery and influence reduction of maternal and infant mortality. Consequently, understanding well how to observe and follow the prescribed sequence of interventions in EINC, the use of training implies appropriate strategies to promote adoption and compliance of the protocol for safer and quality care of birthing mothers and newborn. While, other key factors for impeding implementation of EINC are cultural, religious belief, proximity issues to health facilities and recipients' lack of education about EINC services. The participants traditional and religious practices have influence maternal and newborn interventions which increases the risk of untoward perinatal outcomes. The study had identified perinatal risks from traditional beliefs which were identified as follows: poor hygiene which is mainly hand washing and traditional cord care practice which exposes the mother and baby to high risk of infection including tetanus. These traditional postpartum practices hinder the mother's ability to seek health services for herself and the newborn. Another case study conducted in Similarly, UNICEF study found that distance from health care facilities impacted health care knowledge among women, as well as decisions to seek care. Appropriate education and information for recipients and families empowers them to make decisions about their care. Moreover, social services including social awareness are capability building to ensure a sustained EINC program implementation and adoption.

CONCLUSIONS

HCPs satisfactorily adhere to the recommended four core guidelines for the health workers and medical practitioner in providing essential, evidence based, newborn care. However, identified non-compliance

of criterions during intrapartum were evident and considered as constraints due to small floor-areas of birthing facilities, unavailable equipment and supply and those that are considered as “old familiar behavior”. In addition, the detailed sequential actions enclosed in the four core steps are insufficient to reflect their step by step compliance. Maternal mortality data is said to be an important indicator of overall health system quality because pregnant women survive in sanitary, safe, well-staffed and stocked facilities. If new mothers are thriving, it indicates that the health care system is doing its job. If not, problems likely exist. EINC guidelines outlined in the A.O. 2009-0025 is not fully known by health care providers assigned in the delivery room of government birthing facilities and are not sufficiently complied in their practice. Their awareness on the existence of EINC interventions particularly the 4 core steps conveys that some aspects of the prescribed systematic interventions were recognized based on the time-bound interventions but not strong enough to suffice total compliance. Only few health care providers received training on EINC. Consequently, if they are made to understand well and to observe and follow the prescribed sequence of interventions in EINC, opportunities for training may facilitate turn-over of the “familiar old ways” to appropriate strategies and promote adoption and compliance of the protocol for safer and quality care of birthing mothers and newborn. Non-compliance to some of the EINC protocol can be difficult to correct such that a qualitative study as in phenomenology and the like may help identify innate and externalities that influence the decision of the HCPs in adopting the recommended guidelines. Other guidelines that were not complied are caused by the lack of equipment and trainings in doing so. Ensuring adequate supplies of medications such as antibiotics, analgesics and steroids may facilitate adoption of the HCPs to the recommended guidelines. Likewise, training-needs-assessments are useful to tailor-suit the EINC training programs to address the gaps in knowledge and unnecessary traditional beliefs employed by the HCPs. The EINC program is a well-drafted mechanism to ensure optimal health service delivery to the mother and her child, however, the implementation of the same cannot be guaranteed especially to the remote areas which are distant from the health department at the regional level. Appropriating more personnel to conduct monitoring and evaluation of the EINC program implementation may facilitate in the compliance of the HCPs through the principle of social desirability. A reward mechanism can also be a good opportunity to motivate the HCPs in adhering to the guidelines in the EINC program. Validation of this study can be performed using a time-and motion observational design as the present study’s result were self-reported data from the HCPs.

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