Chapter 19
The Establishing of Referral System for High-risk Pregnancy: 7th Health Service Region

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Knowledge and Experiences Sharing

The health care for high-risk pregnancy requires high level of attention from the personnel in all sectors. This is to provide services in various aspects: prevent pregnant women, mothers and children from the possible adverse events such as maternal and fetal complications, which affect not only to family and social relationship but also reduce the burden of special cares especially for preterm birth, of which the expenses could rise to 300000 Baht per case.

Development of Fast Track Referral System for High-risk Pregnancy

The development consisted of:

1. Identify and define the problems of referral system in the past.
2. Summarize and categorize the problems.
3. Develop the clinical practice guideline for high-risk pregnancy.
4. Evaluate 24-hours service facilities of main hospital and community hospitals network in the following aspects:
   4.1 Maternal facilities: Labor room, Operation room, and Blood bank.
   4.2 Medical equipment and supplies: Availability in case of emergency delivery and cesarean section.
   4.3 Team: Obstetricians, pediatricians, midwives, anesthesiologists, and scrub nurses.
   4.4 Hospital Network: Support and the consultation system for the diagnosis and treatment of high-risk pregnancy.

Phase of Development


In 2004, KhonKaen Hospital systemized the fast track of high-risk pregnancy care using the bypass system. High-risk pregnant women who were referred from rural hospitals to Khon Kaen Hospital could be directly transferred to labor room. In case of emergency, an obstetrician will
be prompted at the emergency room for primary evaluation and stabilization, then promptly transferred to the operation room or intensive care unit as suitable. Between 2005 and 2006, the clinical practice guideline for high-risk pregnancy was firstly developed. The guideline included management of high-risk pregnant women before and during transfer from community hospital network in Khon Kaen province to Khon Kaen Hospital. Moreover, workshops for competency improvement in high-risk pregnancy care were conducted for physicians and midwives of community hospitals in Khon Kaen province.

**Phase II: Expansion the High-risk Pregnancy Service System to Hospital Network (2007-2008)**

The referral system for high-risk pregnancy has been reviewed and developed to be a fast track system. This system started from stabilizing pregnant women at the rural hospitals before and during transfer to Khon Kaen Hospital, establishing a communication system between physicians using hotline in order to shortening time from the emergency room to the operating room or intensive care unit.

**Phase III: Linkage and Coverage of the Service System (2009-2012)**

The academic conferences of high-risk pregnancy management between Khon Kaen Hospital and provincial hospital network in the region were integrated for conducting the guideline of management of high-risk pregnancy and premature infants. Then, workshop for caring and referring the high-risk pregnancy were held for physicians and registered nurses in Kon Kaen, Mahasarakham, Roi-Et and Kalasin provinces.


During this phase, the guideline was updated and emergency in obstetrics workshop was held for physicians and nurses in the region, seven simulated events of emergency conditions in obstetrics (severe pre-eclampsia, umbilical cord prolapsed, shoulder dystocia, breech assisting, early postpartum hemorrhage, neonatal resuscitation, and cardio-pulmonary resuscitation) were arranged.

**Follow up system**

1. Follow up the practice of the high-risk pregnancy guideline.
2. Follow up visit to community hospitals in network annually.
3. Organizing the meeting of maternal and child health care committee every 3 months.
4. Organizing the meeting of the referral system of high-risk pregnancy committee of 7th Health Service Region every 6 months.
5. Conducting the knowledge management conference among four networks annually.
6. Follow up key performance indicators of service quality e.g. preterm infant mortality rate, perinatal and neonatal mortality rate.
7. Follow up the key performance indicators of Thai Maternal and Child Health Network project under the Patronage of HRH Princess Srirasmi, the Royal Consort to HRH Crown Prince Maha Vajiralongkorn.
**Evaluation of Service Quality**

The service quality was assessed and evaluated by using the strategy of Thai Maternal and Child Health Network under the Patronage HRH Princess Srirasmi, the Royal Consort to HRH Crown Prince Maha Vajiralongkorn according to the objective number 4, 6, 7, 11.

**Benefits**

High-risk pregnant women: Be able to rapidly access care at the tertiary level which will further enhance pregnant women and newborn infants safety.

Family: Better health and quality of life; reduce the burden of family expenses.

Community/society/nation: Getting high quality of human resources.

Health service unit: Initiate effective guideline in high-risk pregnancy management.

**Key Success Factors**

1. Participation from physicians and registered nurses of the hospitals in 7th health service region in high-risk pregnancy management guideline development and implementation.
2. Increasing of bonding in participation teams and multidisciplinary networks.
3. Using communication technology as a tool for guideline implementation.
4. Learning and sharing clinical practices between members in the network.
5. Follow up system including feedback from the hospital network for continuous quality improvement.
6. Sufficient budgets allocation.