

## ครอบแนวคิดคุณภาพการดูแลมารดาและทารก

### Conceptual Framework Quality Maternal and Newborn Care

ธิตาพร ศิริวานิศา\* สุพรรณิกา ปานศรี ดารินทร์ ศรีชุม

Thitaporn Siriwan\* Supunnika Pansri Darin Srichum

ภาควิชาการพยาบาลสูติศาสตร์ วิทยาลัยพยาบาลกองทัพบก กรุงเทพมหานคร ประเทศไทย 10400

Obstetrics Nursing Department, The Royal Thai Army Nursing College, Bangkok, Thailand, 10400

#### บทคัดย่อ

การเสียชีวิตของมารดาและการเกิดไร้ชีพของทารกเกิดขึ้นทั่วโลก แม้ว่าในแต่ละประเทศจะมีการพัฒนาการดูแลมารดาและทารกจนสามารถลดอัตราการเสียชีวิตของมารดาและทารกลงได้ แต่ในบางประเทศยังคงไม่บรรลุเป้าหมายการพัฒนาที่ยั่งยืน การเสียชีวิตส่วนใหญ่เกิดจากสาเหตุที่สามารถป้องกันได้ จากการศึกษาพบว่า ผดุงครรภ์มีบทบาทสำคัญในการพัฒนาคุณภาพการดูแลมารดาและทารกในทุกประเทศ ครอบแนวคิดคุณภาพการดูแลมารดาและทารกจึงถูกพัฒนาจากนิยามของการผดุงครรภ์ เพื่อเป็นครอบคุณภาพการดูแลของผดุงครรภ์สำหรับการดูแลมารดา ทารกและครอบครัว ตั้งแต่ระยะตั้งครรภ์ ระยะคลอดและหลังคลอด ซึ่งครอบแนวคิดนี้ ประกอบด้วย การดูแลตามบทบาทผดุงครรภ์ที่มีหลักฐานเชิงประจักษ์รองรับ องค์กรที่ส่งเสริมการการเข้าถึงและการดูแลที่มีคุณภาพและการผสมผสานของผดุงครรภ์ คุณค่าการดูแลที่เคารพต่อมารดาและครอบครัว ปรัชญา การส่งเสริมกระบวนการคลอดปกติ และผู้ให้การดูแลที่มีความรู้ ทักษะและสมรรถนะในการให้การดูแลมารดาทารกอย่างมีคุณภาพ ครอบแนวคิดนี้สามารถประยุกต์ใช้กับมารดาและทารกทุกรายและในทุกสถานที่ โดยไม่ขึ้นกับสถานที่ทางสุขภาพ รายได้ หรือการศึกษา เพื่อพัฒนาคุณภาพการดูแลมารดาและทารกและผลลัพธ์ที่ดีที่สุดต่อมารดาและทารก

**คำสำคัญ:** คุณภาพการดูแล, มารดาและทารก

#### Abstract

Maternal death and stillbirth occur worldwide and, although countries have made progress on maternal and newborn care leading to reduce maternal mortality and stillbirth rates, more effort is needed to reach Sustainable Development Goals (SDGs). The majority of causes of maternal death and stillbirth are prevented with quality care during childbirth; evidence shows that midwifery is pivotal for leveling up the quality of maternal and newborn care in all countries. The framework for Quality Maternal and Newborn Care (QMNC) was developed based on the definition of midwifery practice for being a standard care for childbearing women, newborn infants, and families across the continuum throughout pregnancy, birth, and postpartum. This framework consists of evidence-based practice; organizational care, that promotes accessibility and quality care and integrates midwives into the health system; values of care, where women and families receive respectful care; a philosophy which optimise physiological birth; and care providers who are knowledgeable, skilled, and competent to deliver the quality care. In conclusion, the QMNC Framework contributes to midwifery, including practices, organizations, values, philosophy, and care providers. This

Corresponding Author: \*E-mail: Thitaporn\_s@rtanc.ac.th

วันที่รับ (received) 22 ส.ค. 2565 วันที่แก้ไขเสร็จ (revised) 22 ธ.ค. 2565 วันที่ตอบรับ (accepted) 31 ธ.ค. 2565

framework can apply to all women and newborns and in all settings, regardless of health status, income, or education, to enhance improvement in care quality and the best maternal and newborn outcomes.

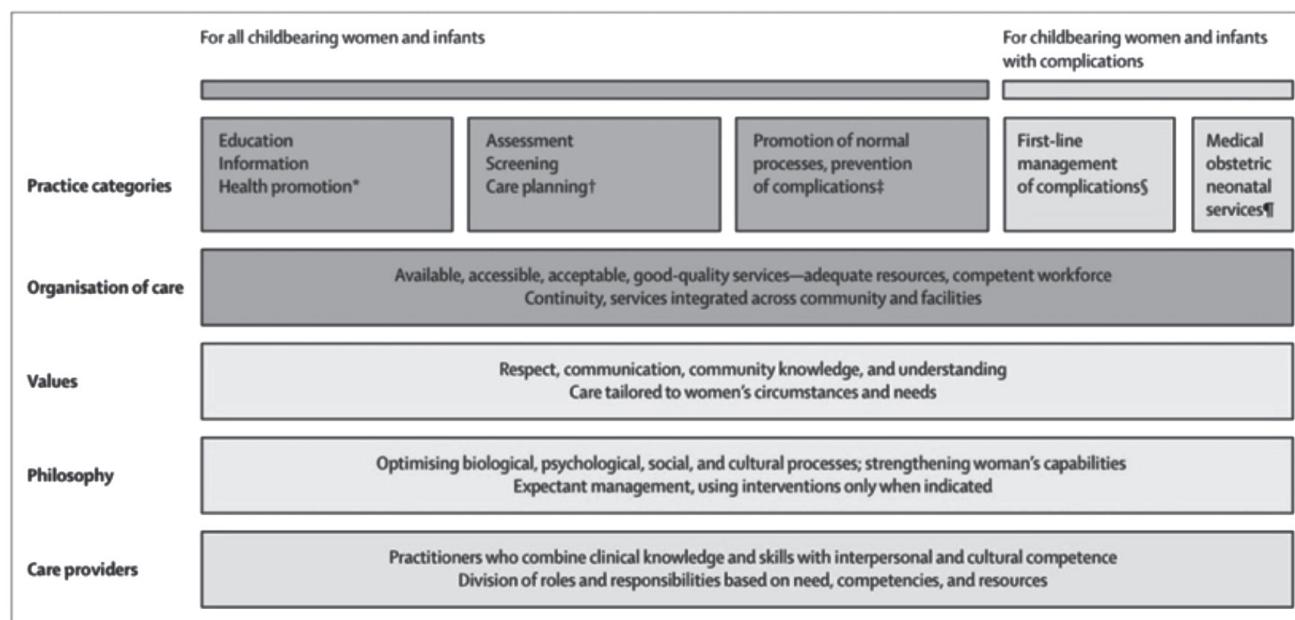
**Keywords:** Quality care, Maternal and newborn care, Framework

The Worldwide Maternal Mortality Ratio has declined from 243 maternal deaths in 2000 to 211 deaths per 100,000 births in 2017 according to UN inter-agency estimates.<sup>1</sup> Around nearly 2 million are stillbirths, occurring around every 16 seconds.<sup>2</sup> Although substantial progress has been made on maternal mortality and stillbirth rates since 2000, the world needs more effort to reach Sustainable Development Goals (SDGs) in which maternal death rates are lower than 70 per 100,000 live births and stillbirth rates lower than 12 per 1000 total births by 2030.<sup>3</sup> The majority causes of maternal death and stillbirth are prevented by quality care during childbirth.<sup>4</sup> Unnecessary intervention has surged which potentially lead to the iatrogenic harm to women and newborns.<sup>6</sup> Meanwhile, some settings have inadequate interventions which underly maternal and neonatal mortality and morbidity.<sup>6</sup> Poor quality maternal and newborn care is not only an important contributor to these deaths, but also effects mother and newborn's physical and psychosocial health and wellbeing, ongoing health-care costs of family, communities and countries economy, and health inequalities.<sup>5</sup>

The evidence has showed that midwifery is pivotal for leveling up the quality of maternal and newborn care in all countries.<sup>7</sup> Care in health systems led by educated, licensed, regulated, and integrated midwives with collaboration with interdisciplinary teams created positive maternal and perinatal outcomes.<sup>9</sup> In order to scale up the quality of maternal care within midwifery to avoid preventive mortality and morbidity, care needs to be defined and established. The framework for Quality Maternal and

Newborn Care (QMNC) was developed from the Lancet series analysis of existing reviews of women's experiences and views, practices and interventions, and workforce.<sup>9</sup> This framework was designed based on the definition of midwifery practice; "the skilled, knowledgeable, and compassionate care for childbearing women, newborn infants, and families across the continuum throughout pre-pregnancy, pregnancy, birth, postpartum, and the early weeks of life."<sup>4</sup> This article aims to elaborate on the QMNC framework, where better understanding of the quality of maternal and newborn care allows the effective application in all settings, leveling up the quality of midwifery care.

The maternal and newborn cares in all settings need to be standardized, updated and evidence based which is embraced by the holistic care to reach to the quality of midwifery care. The QMNC framework characterises the cares of women, newborn infants, and families needed throughout pregnancy, birth, and beyond.<sup>4</sup> The framework consists of five core components: practice categories, organization of care, values, philosophy, and care providers.<sup>4</sup> (Figure 1) Each category is fundamental to develop the quality maternal and newborn care.

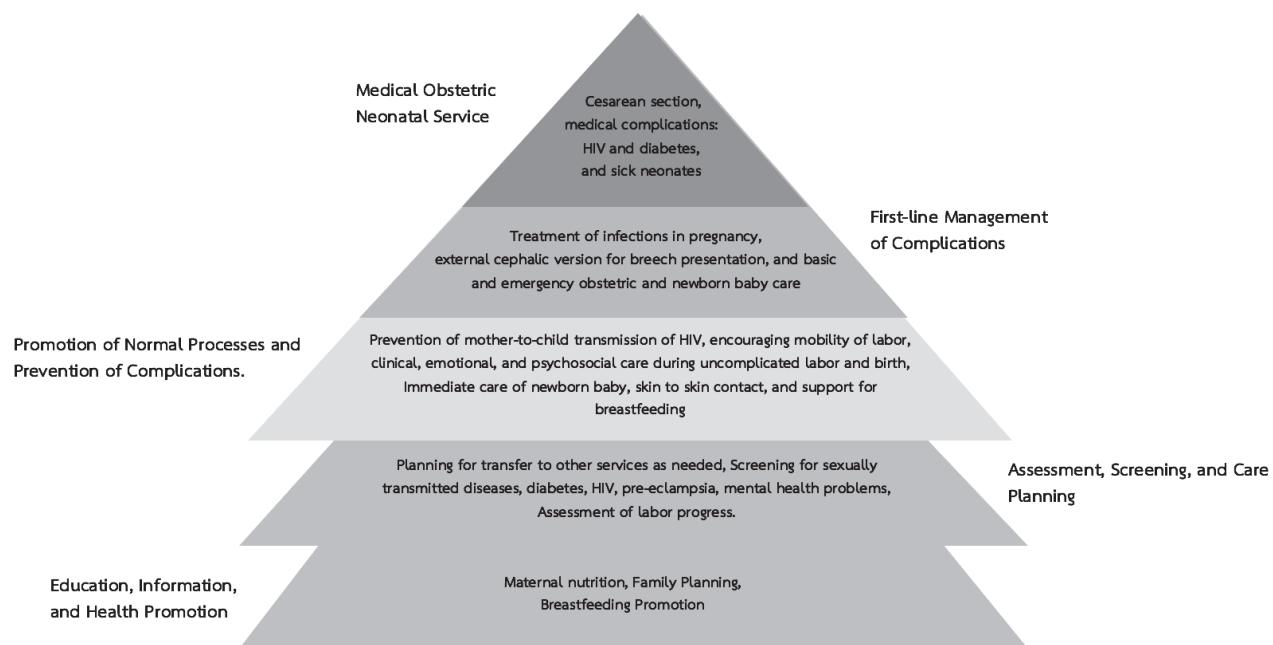


**Figure 1:** The framework for quality maternal and newborn care (QMNC)

### 1. Practice categories

The effective and evidence-based maternal and newborn care practices derived from reviews has reflected what practices that women and infants need from maternal and newborn services.<sup>9</sup> Analysis of 416 systematical reviews show that the practices in midwifery can provide improvement across 56 outcomes, including women and infants' survival, health and well-being, and efficient resource use.<sup>4</sup> Moreover, 62% of 72 effective practices of midwifery care optimize the physiological processes of reproduction and early life, and build up women's capabilities for caring for themselves and their families.<sup>4</sup> Whereas the ineffective practices for childbearing women and infants that should not be used routinely (e.g. perineal shaving, enema during labor, amniotomy in labor) were provided on the Lacet series.<sup>4</sup>

The maternal and newborn practices are categorized into two parts: the care for all childbearing women and infants and care for women and infants with complications.<sup>4</sup> The components under practice for all childbearing women and infants include education, information and health promotion; assessment, screening and care planning; and promotion of normal processes and prevention of complications. Meanwhile, the first-line management of complications and medical obstetric neonatal service are under the components of care for women and infants with complications.<sup>4</sup> (Figure 1)



**Figure 2:** Practice categories of QMNC framework<sup>9</sup>

Examples of each component of the practice categories is provided in Figure 2. The first three components are the fundamental practices which all women and infants need during pregnancy, birth, and post-birth. Therefore, these are accounted for in the largest area on the figure. Meanwhile, the two upper levels are for the management of care for mothers and newborns with complications. Of these five categories midwifery services cover the first four, which constitutes care for most childbearing people. The final category is the service needed when serious complications occur and requires a full range of services including life-saving interventions and skilled healthcare professionals, although only a small percentage of pregnancies fall into this category. Those evidenced-based practices derived from the framework's reviews are compatible to the essential competencies for midwifery reviewed by International Confederation of Midwives (ICM)<sup>10</sup>, and the WHO's recommendations on intrapartum care for a positive childbirth experience.<sup>11</sup> This emphasizes the high quality, respectful care, supporting physiological

birth, upholding human rights and decision-making for women which midwives should deliver to all women and newborns.

## 2. Organization care

The delivery of high-quality care is not only providing the best practice but also the healthcare system needed within the maternity setting. Organization of care refers to the healthcare system which needs to be available, accessible, acceptable, competent workforce and continuity, and service integrated across community and facility.<sup>4</sup> (Figure 1)

The organization care needs to integrate midwives into the health system to deliver high quality and cost-effective care<sup>12</sup>. Midwives should be in every birth facility level, including primary care and hospitals, providing evidence-based, respectful, and continuity of care across settings. Without midwives, births are prone to overmedicalization which increases cost.<sup>13</sup> High-income countries which integrate midwifery-led care into different models, such as team-based care in maternity hospitals,

low-risk units alongside full-scope maternity hospitals, freestanding, or home-based midwifery, have the lowest intervention rates with the best outcomes.<sup>12</sup> The model of midwifery-led continuity care emphasizes the normality and continuity of care by a trusted and skilled midwife during labor and encourages the natural women's ability to experience birth with minimum interventions. This causes an organizational change from mainly medical-lead care into integrated midwifery-led care. Therefore, investing in midwives and encouragement of the use of birthing facilities needs to be prioritized to improve maternal and newborn outcomes<sup>15</sup>.

Moreover, the Lancet series on maternal health<sup>6,12</sup> highlights the factors needed for global maternity mortality reduction through strengthening the entire healthcare system, including data and surveillance, facility, capability, emergency medical services, and a skilled health workforce. Moreover, quality care is evidence-based and meets the local needs, continuum of care, and addresses diversity. Equity of access to quality care of all women and infants needs to prioritise building up universal coverage to achieve the SDGs and prevent family poverty due to financial hardship. Access to more women means an increase in the delivery of quality of cares and complications are prevented, therefore the maternity service at hospitals should be integrated with community-based care services through a range of interventions that can be delivered safely by community health workers and health promotion groups.

### 3. Values

Care value is where care is tailored to the mother's circumstances and needs to include the aspects of respect. Respectful care is a global issue even in birth facilities, where 1 in 3 women in low-income countries report disrespectful care in

health facilities.<sup>4</sup> Furthermore, teenage and uneducated women are at the highest risk of care that can be classified as abusive.<sup>4</sup> Whilst Respectful care is clearly morally and ethically correct, disrespectful and abusive care is an act against fundamental human rights and can create lasting trauma to women and their families. The feeling of being unsafe during childbirth makes families avoid accessing birth facilities which contain abusive environments. The large mixed method study by Reed et al. (2017) reported the sources of trauma related births, including where care providers prioritized their own institutional plans over the women's preferences; women were used for observation practice or as learning resources for hospital staff; women's embodied knowledge was disregarded in favour of care providers; care providers had lied and threatened women about fetal well-being in attempts to gain complicity with the procedures, and women also mention abusive and violent actions.<sup>17</sup>

To raise awareness of the disrespectful care and take initial steps to prevent it, midwives should be able to identify the difference between respectful and disrespectful cares. Respectful care includes emotional support, physical support, effective communication, proximity (being close to women), privacy, and informed consent.<sup>16</sup> On the other hand, disrespectful care consists of psychological abuse (language), physical abuse (slapping, interventions with inadequate pain management), non-support/no communication, abandonment, violation of privacy, and lack of consent.<sup>16</sup>

The WHO (2014)<sup>18</sup> stated that "every women has the right to the highest attainable standard of health which includes the right to dignified, respectful health care." To prevent and eliminate abusive and disrespectful care during facilities-based childbirth the WHO proposed the following; 1) governments and developers support research and actions regarding

disrespect and abuse; 2) initiate, support, and sustain the quality care guidelines prioritizing respectful care as a core component; 3) emphasize the childbearing women's rights for providing dignified and respectful care throughout pregnancy and childbirth; 4) establish reporting related to respectful and disrespectful care and the reasons why those cares are required or avoided respectively; 5) allowing all stakeholders to be involved in designing care to eliminate disrespectful and abusive practices.<sup>18</sup> To level up the quality of care, the care value or respectful care for midwifery should be provided to all woman and implemented in all maternity setting. Meanwhile, disrespectful care needs to be eliminated in terms of systematic abuse and individual disrespect of healthcare workers in the workplace.<sup>19</sup>

#### 4. Philosophy

The Philosophy component relates to care that encourages the biological, psychological, social and cultural childbirth processes, lowers interventions, and strengthens the capacity of women and their families (Figure 1).<sup>4</sup> Moreover, philosophy care focus on salutogenesis, which emphasizes the building of health and well-being over pathology or disease.<sup>4</sup> The obvious benefits of physiological births include normal endocrine function, lower interventions, improved newborn transition, bonding and attachment, improved physical and mental health for childbearing women, growth immune function, and less chronic disease.<sup>20</sup> Infants born by spontaneous vaginal birth had lower short and long term health problems compared with those born with interventions such as instrumental, induction, or augmentation.<sup>21</sup>

Emerging science has emphasized the association between epigenetic and births, mothers, and infants. The hypothesis of the Epigenetic Impact of Childbirth (EPIIC) points out that physiological labor

and birth have evolved to exert eustress (a healthy positive form of stress) on the fetus and result in the positive effect on genes which regulate immune responses, weight regulation, tumor-suppressor gene expression.<sup>22</sup> Therefore, children born with eustress could benefit towards their short-and long-term health. However, unnecessary interventions, especially CS, have been continuously surging worldwide, regardless of low or high-income based countries.<sup>6</sup> Excessive use of CS has not shown advantages and can actually increase harm, however the underuse of CS has led to maternal and newborn morbidity and mortality. The International Federation of Gynaecology and Obstetrics (FIGO) pointed out that "The rising of CSs has to be stopped".<sup>23</sup> This was echoed by the WHO (2015), stating that ideal CS rates is between 10%-15%; more than the suggested rate is unlikely to improve the outcomes.<sup>24</sup>

Apart from the birth outcomes, a systematic review on what matters to healthy pregnant women showed that women's preferences, needs, and values are aligned to a positive pregnancy and a birth experience. This should include physical and sociocultural normality, a healthy mother and baby, a clinically and psychologically safe environment, physical and emotional support from companions, and competent and kind healthcare professionals; women also want to maintain a sense of personal achievement and control through decision making if intervention is required.<sup>25</sup> In order to achieve a positive pregnancy and childbirth experience for all women, the WHO produced guidelines that put the woman at the center of care and enhanced their experience throughout pregnancy and birth.<sup>14</sup>

To optimize birth outcomes a physiological birth process should be encouraged, meanwhile the excessive use of interventions should be thoroughly reconsidered based on procedure indications. Moreover, the care should be tailored to meet the

positive birth experiences of women.

## 5. Care providers

This element focuses on how to build up trained, skilled, educated, and competent midwives who care for all women and newborns. The midwife workforce needs to be enabled globally to deliver quality, equal, and universal coverage of care. Scaling up midwifery care can enhance accessibility of healthcare to women who live in limited resources, or who are marginalized due to race, ethnicity, religion, economics, or education. Moreover, this substantially reduces maternal mortality not only in the low-resource settings, but it is also reduced in any country. Evidence has shown that essential interventions provided for reproductive, maternal, and newborn health by competent midwives can reduce maternal death, stillbirths, and newborn deaths in 78 countries.<sup>27</sup> Prediction modelling of increasing intervention coverage by midwives by 10%, 25%, and 95% would lead to decreases of maternal mortality by 27%, 50% and 82% respectively.<sup>27</sup> The benefit of scaling up midwifery care in terms of cost effectiveness are also reported in 58 low-and middle-income countries, especially when the family planning is integrated.<sup>28</sup>

Strengthening midwifery education to international standards is key for the successful improvement of quality maternal and newborn care. Educated, licensed, and regulated midwives who meet the international standard are able to deliver the full scope of practices and are fully integrated into the healthcare system and interdisciplinary team.<sup>4</sup> Midwifery education equips midwives with greater competency, high standards, safe practices, and evidenced based care.<sup>29,31</sup> The World Health Organization, in collaboration with UNFPA, UNICEF, and the ICM, suggested a seven-step action plan to strengthen midwifery education, with each step

informed by evidence and global consultants.<sup>30</sup> The seven-steps include strengthening leadership and policy, gathering of data and evidence, building public engagement and advocacy, preparing educational institutions, implementing practice settings and clinical mentors, strengthening faculty standards and curricula, and the educating of students including monitoring, evaluating, reviewing and adjusting, where operated under the process of act, monitor and review.<sup>30</sup> The quality maternal and newborn care need to be delivered by the competent, skilled, and qualified midwives. Therefore, developing the midwives' competence and education can enhance the birth outcome in all aspect.

## Implications for improving quality maternal and newborn care through midwifery

### Policy

Policy should equally emphasize both coverage and quality of maternal and newborn care to ensure high-quality care and reduction of maternal and neonatal morbidity and mortality. Moreover, accessibility of midwifery services should be encouraged to reach more women and infants who need care in line with continually improved quality of care. Meanwhile, scaling up the midwife workforce contributes to quality care for reproductive, maternal, and newborn health. Policy makers also need to consider the economic advantages of utilizing the QMNC Framework in terms of potentially reducing health expenditure and increasing the sustainability of maternity care systems in the longer term.

### Practice

Implementation of the QMNC Framework into maternity care settings as a standard guideline in some low- or middle-income settings might create some difficulties in application and embedding of the framework in routine midwifery care. This could be due to inadequate facilities and resources or a

shortage of midwives. However, establishing the framework as a desirable outcome of midwifery care would imitate the improvement process of maternal and newborns in line with continuously updating evidence-based practices. To deliver high-quality care, healthcare professionals and policy makers need to create the environment which enhances the effectiveness and evidence-based midwifery practices together with creating women-centered values and philosophies. Moreover, integration with communities and collaboration with multidisciplinary teams must be implemented to optimize the outcomes for all women and infants.

### Research

This framework can be used as a tool to assess the quality of maternal and neonatal care in each setting and can identify gaps in knowledge or practice where further examination or study for the better understanding may be needed. To apply this framework, midwifery practice is required to be evidence-based, therefore the study should be conducted continuously to update and localize the practice.

### Education

Education is essential for fully a qualified, skilled, educated midwife, who delivers high quality and evidence-based midwifery care and create optimal outcomes. Furthermore, this framework can be used as a guideline to design the midwifery course program or training.

In conclusion, the QMNC Framework contributes to midwifery care, including practices, organizations, values, philosophy, and care providers. This framework demonstrates the transition from provision of fragmented maternal and newborn care, focusing on the pathology treatments, to comprehensive provision of skilled care for all,

regardless of health status, income, or education, within the context of respectful care. Implementing this framework as a standard or a benchmark for quality care assessment would lead to better maternal and newborn outcomes and enhance improvement in care quality in all maternity care settings.

### References

1. Unicef. Unicef Data: Maternal mortality. UNICEF; 2019.
2. UNICEF, World Health Organization, World Bank Group, United Nations. A neglected tragedy: the global burden of stillbirths. United Nations Inter-Agency Group for Child Mortality Estimation; 2020.
3. United Nations. The Sustainable Development Goals Report 2021. United Nations; 2021.
4. Renfrew MJ, McFadden A, Bastos MH, Campbell J, Channon AA, Cheung NF, et al. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. *The Lancet*. 2014;384(9948):1129–45.
5. Marmot M, Allen J, Bell R, Bloomer E, Goldblatt P. WHO European review of social determinants of health and the health divide. *The Lancet*. 2012;380(9846):1011–29.
6. Miller S, Abalos E, Chamillard M, Ciapponi A, Colaci D, Comandé D, et al. Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. *The Lancet*. 2016;388(10056):2176–92.
7. UNFPA, United Nations, World Health organization. The state of world's midwifery. United Nations; 2021.

8. United Nations. the Global Strategy for Women's, Children's and adolescents' Health. United Nations; 2015.
9. Lancet Series. Midwifery An Executive Summary for The Lancet's Series. Lancet; 2014.
10. International Confederation of Midwives. Essential Competencies for Midwifery Practice. ICM; 2019.
11. World Health Organization. WHO recommendations: Intrapartum care for a positive childbirth experience. Geneva: World Health Organization; 2022.
12. Shaw D, Guise JM, Shah N, Gemzell-Danielsson K, Joseph K, Levy B, et al. Drivers of maternity care in high-income countries: can health systems support woman-centred care? *The Lancet*. 2016;388(10057):2282–95.
13. Attanasio L, Kozhimannil KB. Relationship Between Hospital-Level Percentage of Midwife-Attended Births and Obstetric Procedure Utilization. *Journal Midwifery Womens Health*. 2018;63(1):14–22.
14. Van Lerberghe W, Matthews Z, Achadi E, Ancona C, Campbell J, Channon A, et al. Country experience with strengthening of health systems and deployment of midwives in countries with high maternal mortality. *The Lancet*. 2014;384(9949):1215–25.
15. The Institute for Health Metrics and Evaluation (IHME). Health-related SDGs 2021. IHME; 2021.
16. Solnes Miltenburg A, van Pelt S, Meguid T, Sundby J. Disrespect and abuse in maternity care: individual consequences of structural violence. *Report Health Matters*. 2018;26(53): 88–106.
17. Reed R, Sharman R, Inglis C. Women's descriptions of childbirth trauma relating to care provider actions and interactions. *BioMed Central Pregnancy Childbirth*. 2017;17(1):21.
18. World Health Organization. The prevention and elimination of disrespect and abuse during facility-based childbirth. Geneva: World Health Organization; 2014.
19. World Health Organization. Midwives' voices, midwives' realities. Findings from a global consultation on providing quality midwifery care. Geneva: World Health Organization; 2016.
20. Prosser SJ, Barnett AG, Miller YD. Factors promoting or inhibiting normal birth. *BioMed Central Pregnancy and childbirth*. 2018;18(1):1-10.
21. Peters LL, Thornton C, de Jonge A, Khashan A, Tracy M, Downe S, et al. The effect of medical and operative birth interventions on child health outcomes in the first 28 days and up to 5 years of age: A linked data population-based cohort study. *Birth*. 2018 Dec;45(4):347–57.
22. Dahlen HG, Kennedy HP, Anderson CM, Bell AF, Clark A, Foureur M, et al. The EPIIC hypothesis: Intrapartum effects on the neonatal epigenome and consequent health outcomes. National institute of Health. 2013.
23. Visser GHA, Ayres-de-Campos D, Barnea ER, de Bernis L, Di Renzo GC, Vidarte MFE, et al. FIGO position paper: how to stop the caesarean section epidemic. *The Lancet*. 2018;392(10155): 1286–7.
24. World Health Organization. WHO Statement on Caesarean Section Rates. Geneva: World Health Organization; 2015.
25. Downe S, Finlayson K, Oladapo O, Bonet M, Gürmezoglu AM. What matters to women during childbirth: A systematic qualitative review. Norhayati MN, editor. *PLOS ONE*. 2018;13(4): e0194906.

26. World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 2016.
27. Homer CSE, Friberg IK, Dias MAB, ten Hoopen Bender P, Sandall J, Speciale AM, et al. The projected effect of scaling up midwifery. *The Lancet*. 2014.
28. Bartlett L, Weissman E, Gubin R, Patton-Molitors R, Friberg IK. The Impact and Cost of Scaling up Midwifery and Obstetrics in 58 Low-and Middle-Income Countries. Mahal A, editor. PLoS ONE. 2014;9(6): e98550.
29. Bharj KK, Luyben A, Avery MD, Johnson PG, O'Connell R, Barger MK, et al. An agenda for midwifery education: Advancing the state of the world's midwifery. *Midwifery*. 2016.
30. World Health Organization. Strengthening quality midwifery education for universal health coverage 2030. Geneva: World Health Organization; 2019.
31. Sudja R, Oumtanee A. Experiences of Being a Nurse Entrepreneur of a Nursing and Midwifery Clinic. *Journal of The Royal Thai Army Nurses*. 2019; 21(2): 241-51. (In Thai)