Quality of Maternal Health Care in Indonesia

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Indonesia

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Vrije Universiteit Amsterdam
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A thesis submitted in partial fulfilment of the requirement for the degree of Master of Public Health

By

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Declaration:
Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with department requirements.
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List of Abbreviations

ANC	Antenatal Care
APN	*AsuhanPersalinan Normal* - Normal Delivery Care
BEmONC	Basic Emergency Obstetric and Newborn Care
Bidan Desa	Village Midwife Program
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CNN	Cable News Network
Desa Siaga	Alert Village Program
Dukun	Traditional Birth Attendant in Bahasa
EOVs	Educational Outreach Visits
FIGO	International Federation of Gynecology and Obstetrics
GDP	Gross Domestic Product
GHWA	Global Health Workforce Alliance
ICM	International Confederation of Midwives
IDHS	Indonesia Demographic and Health Survey
JKN	*Jaminan Kesehatan Nasional* – National Health Insurance
Kader	Community Health Volunteer
LWHs	Lay Health Workers
MDGs	Millennium Development Goals
$MgSO_4$	*Magnesium Sulphate*
MMR	Maternal Mortality Ratio
MOH-RI	Ministry of Health – Republic of Indonesia
MPSP	Making Pregnancy Safer Program
MSH	Management Sciences for Health
MSS	Minimum Service Standards
NCTN	National Clinical Training Network
PMNCH	Partnership for Maternal, Newborn & Child Health
Polindes	*Pos Bersalin Desa* - Maternity Hut
Posyandu	*Pos Pelayanan Terpadu* - Integrated Health Post
PPH	Postpartum Haemorrhage
Puskesmas	*Pusat Kesehatan Masyarakat* - Health center
Pustu	*Pos Pembantu* - Sub Health Center
QA	Quality Assurance
SBAs	Skilled Birth Attendants
TBAs	Traditional Birth Attendants
THE	Total Health Expenditure
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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Abstract

Background:

Maternal Mortality Ratio (MMR) in Indonesia remains high, 190 per 100,000 live births in 2013. World Bank emphasizes that 60% of maternal death is contributed by poor quality of care. Lack of attitude, competence and compliance of midwives were found in Indonesia, which indicate poor quality of maternal health care.

Objective:

The objective of this study is to analyse factors influencing the quality of maternal health care in Indonesia and identify effective interventions for improvement.

Methodology:

The literatures from 2004-2014 were selected and reviewed. The latest framework of 2014 on quality maternal health care by Renfrew et al. was used as a guide.

Conclusion and Recommendation:

The quality of maternal health care in Indonesia is influenced by lack of midwives' competence, inadequate supervision and monitoring, lack of drugs and equipment supply, lack of community involvement in health services.

In order to address the gaps in quality of maternal health care in Indonesia, six effective interventions are proposed; namely: maternal health audit and feedback, cultural competence, education, educational outreach visit, optimizing the role of lay health workers, group prenatal care and ensure adequate supply of drugs and equipment.

The interventions needs to be carried out through a collaborative approach, policy change, pilot study and strengthen activities in implementation level.

Keywords:

Quality of care, quality assurance, midwives, maternal health, Indonesia

Word counts: 10,103 words

Introduction

"Every baby's first breath on Earth could be one of peace and love. Every mother should be healthy and strong. Every birth could be safe and loving. But our world is not there yet," said Robin Lim after receiving the award in CNN Heroes 2011 (Almond 2011). This quote reminds us to think what we can do to save mothers and babies.

Mothers have a crucial role in the family. They are responsible to take care of the children and some of them also work to fulfil family needs. Thus, every death of mother can bring negative impacts of her children's nutrition, health, education as well as economic consequences for the family (Yamin et al. 2013). Therefore, ensuring the health status of women is important to save lives not only of the mother, but also of the children and family.

I am a midwife graduated in 2010. I am working at midwifery school, as a lecturer, and I have three responsibilities called *TRI-DHARMA* which include teaching, research and community service. Two years ago when I visited a village as my object of community service, around 30 km from the central city of Semarang, Central Java, the head of the village told me that many people in that village complained about the midwives attitude. They perceived that the midwife is not kind and tolerant. The midwife is also rare to stay at the village due to her husband is working in the city. Some community health workers said that the midwife many times are absent in the *Posyandu* (Integrated Health Post in Bahasa). Some pregnant women also were not satisfied, as the midwife has never given health information to them and tried to speed the duration of antenatal visit.

This observation made me interested in finding out factors that influence perceptions of quality and other factors influencing quality of maternal health care. As a midwife and lecturer, conducting a literature study focusing on this particular issue might help to provide evidence in order to propose possible effective intervention for improvement.

The thesis is divided into six chapters: Chapter one describes the background information about Indonesia, including health system and maternal health situation. Chapter two sets the scene of the thesis involving problem statement, justification, objectives and methodology of this study. Chapter three explores the factors influencing quality of maternal health care as the first specific objective. Chapter four reveals the strategies that can be done to improve quality of maternal health care as the second specific objective. Chapter five is the discussion chapter that gathers all the findings according to the study objectives. Chapter six presents the conclusion of the study and provides recommendations.

Chapter I: Background Information

1.1. Geography

Indonesia is a country in South East Asia and lying between Asia and Australia. It borders the South China Sea to the north, the Pacific Ocean to the north and east, and the Indian Ocean to the south and west. The country's area is approximately 1.9 million square kilometres and 80 percent of it is covered with water (IDHS 2012). Indonesia is well-known as an archipelago country; it has around 17 thousand islands. There are five big islands namely Sumatera, Java, Kalimantan, Sulawesi, Papua, and most of them are mountainous. Indonesia as a tropical country has two seasons, dry season extends from May to October, and the rainy season extends from November to April (IDHS 2012). Flooding is a common disaster during rainy season; particularly in the areas nearby the sea, such as the northern region of Java Island. This condition leads to difficulty in accessing the health facilities (Titaley et al. 2010b). Furthermore, the country has 33 provinces, 399 districts, 98 municipalities, 6,793 sub-districts and 79 thousand villages (IDHS 2012). The situation differs between the regions. For example the road condition, public transportation and the availability of health services are much better in urban than rural areas. This disparity influences health seeking behaviour among the citizens. The lack of public transportation leads to increase in the costs for visiting the health facilities (Titaley et al. 2010b).

1.2. Demography

The capital of the Republic of Indonesia is Jakarta. The official language of Indonesia is Bahasa. According to Demographic and Health Survey (DHS) of Indonesia in 2012, Indonesia is the fourth most populous country in the world, with 237.6 million people. The percentage of the population under the age of 19 years is 38.1%. More than 50% of women are in the reproductive age with a fertility rate of 2.1 births per woman and the crude birth rate is 23 per 1,000 population in 2010. The life expectancy in Indonesia is 73 years old for females and 69 years old for males (IDHS 2012).

Indonesia has hundreds of ethnic groups with different cultures (WHO 2008). This diversity influences community perceptions for example, those related to age of sexual debut and marriage. For instance, Sundanese people from Java Island believe that when girls get their first menstruation they are ready to get married. They also have a belief that it is shameful for the parents if a girl is not married by the age of 12 years (Ambaretnani 2012). The median age of marriage is 22.9 years for girls who are educated and 17.2

years for girls who are not educated. Sixty percent of the girls are married between 20-29 years and 13% of the marriage among girls takes place under 20 years of age (IDHS 2012). Meanwhile, officially, the government of Indonesia legislates 21 as the minimum age of marriage, for both men and women (Utomo 2014). Another example is the restriction of food during pregnancy. There is a cultural belief that pregnant women should not eat seafood and should avoid particular vegetables and fruit during the pregnant period (Koeryaman 2012).

1.3. Socio Economy Situation and Education

Indonesia is categorized as a lower-middle-income country (WHO 2011a). Gross national income per capita was 4,730 USD in 2012 (WHO 2013). National Gross Domestic Product (GDP) was 878.0 billion USD in 2012. There are 11.4% of the population are living below national poverty line in 2013 (World Bank 2013).

According to IDHS 2012, men are more likely to attend secondary and higher education than women (IDHS 2012). Low education level of women brings impacts on the decreased possibility to get a job and impair their understanding of health seeking behaviour. A research shows that the education level of women influences the utilization of antenatal care in Indonesia (Agus & Horiuchi 2012).

In 2012, 98% of men were employed while only 55% of women worked (IDHS 2012). Several studies show that husband's occupation influences the utilization of maternity care (Dhakal et al. 2007; Ambaretnani 2012). As most of husband work in agriculture, they prefer their wife to do household duties or assist them in farm rather than visiting the health facilities (IDHS 2012).

1.4. Health Financing

In 2012, Indonesia spent 150 USD per capita per year in health care. Total Health Expenditure (THE) by the government is 3% of the GDP (WHO 2013). In 2011 the government launched *Jampersal* as a specific health insurance for maternal health services which includes antenatal care, delivery care and post-partum care (Maharani, Liesman & Kusuma 2011). Currently, those services are covered by a new insurance scheme called *JKN.* This insurance covers not only maternal health services, but also health in general.

1.5. Health Structure

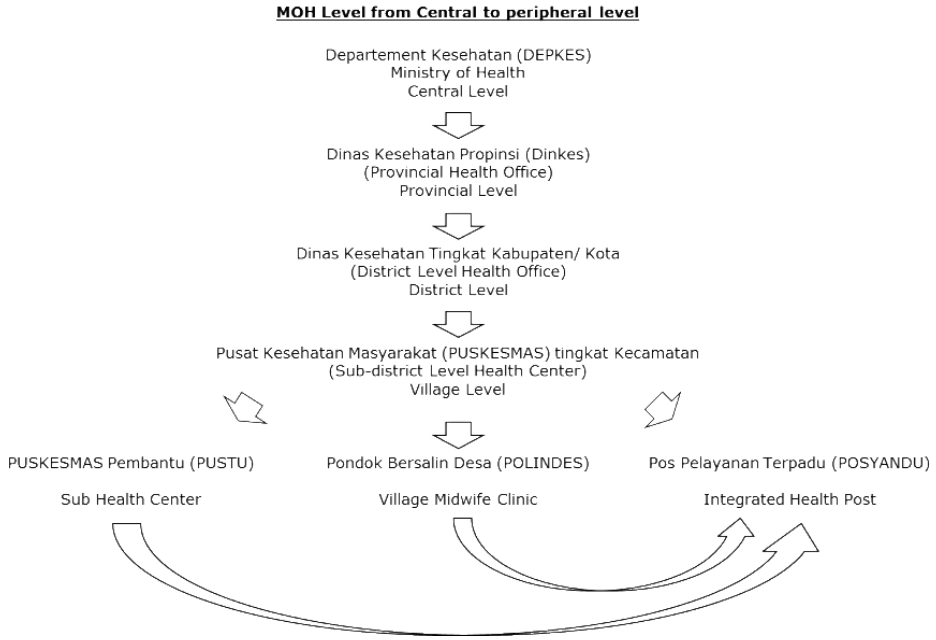

Figure 1: Organizational Structure of Health System in Indonesia

(Source: Maharani, Liesman & Kusuma 2011)

At district level, maternal health care provisions are delivered in public hospitals, private hospitals and private clinics. All public hospitals and some private hospital are designed as Comprehensive Emergency Obstetric and Newborn Care (CEmONC) with the provisions of caesarean section and blood transfusion (National Research Council 2013).

Most of the Primary Health Care in Indonesia is provided in *Puskesmas* (health centre in Bahasa) which is located at sub-district level. Some *Puskesmas* have functioned as Basic Emergency Obstetric and Newborn Care (BEmONC). The government regulates each district to have minimum four BEmONC *Puskesmas.* However, only 61% of districts have at least 4 BEmONC health centres (National Research Council 2013).

At village level, the majority of the health care provision is delivered by midwives. A village midwife has the responsibility of managing *Posyandu* (Integrated Health Post in Bahasa), *Polindes* (Maternity Hut) and *Pustu* (Sub Health Center in Bahasa) (National Research Council 2013). In *Posyandu,* the midwife is assisted by *Kader* (Community Health Volunteer) to disseminate health information and facilitate maternal health services (Ambaretnani 2012).

1.6. Quality assurance of maternity care in Indonesia

It is of immense importance to give a high priority towards the quality of care of pregnant and their newborns. This ensures good health to the future generations. A quality assurance system of maternal health care in Indonesia has varying results in terms of equipment and supplies, supervision and monitoring, training and the use of guidelines.

1.6.1. Equipment and Supplies

A survey in West Nusa Province reports that only 10% of delivery facilities have steriliser and resuscitation equipment. While 89% report of availability of delivery kit only 61% report of a midwife kit being available. In terms of supplies, World Bank reports only 54% of private midwives having the Hepatitis B vaccine in stock. The province reports frequent stock outs of drugs, vaccines and basic consumables. Eighty percent of midwives from Kuningan district did not have the supply of magnesium sulphate. There are reports of the lack of emergency resuscitation drugs and equipments from the health centres of the Serang district (GHWA 2013).

1.6.2. Monitoring and Supervision

Checklist based on the Village Midwife Program is used to monitor and supervise the village midwives in Indonesia. The supervision team comprises of heads from District Health Office, Family Health, Public Health and Maternal & Neonatal Health. Monthly data presented at district level is sent to the district health office at the end of the month. However, there is no standardised supervision system to technically supervise and monitor the midwives (Nasir et al. 2014). The supervision and monitoring is criticised as weakly designed and implemented system in Indonesia. On one hand, there is a shortage of trained personnel for conducting monitoring and supervision, on the other hand, there is no consistency in the process nationwide. This in combination with added clinical and administrative burden due to unclear job descriptions provide less opportunities for midwives for professional support and learning at work. Eventually it affects the quality of service provided by midwives (GHWA 2013).

Data flow from the peripheral health facilities is very poor as the almost half of private providers do not report through the existing system. Among those who report, the collected data quality is also poor. The data collected at *Puskemas* level is not well integrated into the main system.

Satisfactory Health information system in Indonesia is not yet developed. The government acknowledges these gaps in information system along with the system of monitoring and supervision. Efforts to strengthen these systems are ongoing. The decentralisation policy of 2001, is expected to support strengthening the existing system. However, reports of the progress of the strengthening activities for information system, monitoring and supervision system are not found in literature searches so far (Nasir et al. 2014).

1.6.3. Guidelines

The Minimum Service Standards (MSS) of Indonesia include manuals and guidelines with the lists of activities for service delivery. This also includes guides for management of care and necessary human resource required for service. The guidelines include antenatal care, obstetric complications, treatment, and delivery with a skilled provider, postnatal care, family planning and cost covering for poor families. There are, however, reports that very few districts apply these guidelines. The problem is not of distribution, but the complexity of the guidelines (GHWA 2013).

The Making Pregnancy Safer Program (MPSP) now guides majority of the programs in maternal health. Apart from the areas covered by the MSS guidelines, the MPSP guidelines also cover emergency care of newborns, maternal death audits, promotion of breastfeeding, post abortion care and nationwide expansion of *Desa* Siaga (Alert Village Program). *Desa Siaga* is a program for making safer childbirth in the village (GHWA 2013).

1.6.4. Training

Government and donor initiative launched the *Asuhan Persalinan Normal (APN*) or Normal Delivery Care training. APN is a mix of classroom instruction and practicum including a minimum of three deliveries under supervision. This international standard based on clinical material from WHO also involves a clinical accreditation after 2 to 6 weeks. Data from National Clinical Training Network (NCTN) shows that more than 12,000 midwives have undergone the APN training (GHWA 2013).

The outcomes of the APN training reported to improve the skills of the midwives. Report from the west Java show that 81% of the trained midwives are able to manage the third stage of labour compared with 34% of the non-trained midwives in the same region. The APN training also provided

skills for maternal and perinatal audit, basic emergency obstetric care and life saving skills for maternal health (GHWA 2013).

Evidence shows that the APN training is also needed for health care professionals other than midwives. Many health professionals other than midwife also care for these women for maternal health care. To address the quality of care received by each mother in Indonesia, efforts must be made to extend the coverage of the APN training. Some women reach a midwife or doctor too late for care, while we must also keep in mind that the midwives may not be skilled manage the complications (GHWA 2013).

1.7. Maternal Health Situation

Indonesia has made progress in increasing utilization coverage in maternal health care. According to IDHS 2012, skilled birth attendants conduct 83% of all births in Indonesia. Skill birth attendants include doctors, midwives and nurses. Regarding antenatal care coverage, 87.8% of the pregnant mothers made at least four Antenatal Care (ANC) visits. Sixty two percent of married women age 15-49 use modern contraceptives while 11.4% the women still have an unmet need for family planning. Approximately 50% of mothers initiated early breastfeeding. However, there is a big difference between regions, for example the percentage delivered by a skilled provider in DKI Jakarta is 98.7%; on the other hand, only 43.3% of births in in West Sulawesi are attended by a skill birth attendant (IDHS 2012).

WHO (2014) estimated that MMR in Indonesia in 2012 is 190 per 100,000 per live births. WHO mentioned that most maternal deaths occur during delivery or in the first 24 hours post-partum. Haemorrhage and hypertensive disorder are the main causes of maternal mortality in developing countries (Khan et al. 2006). We have a similar scenario in Indonesia. As can be seen from figure 2, haemorrhage remained as the first cause of maternal death, although the percentage decreased from approximately 45% to 30%, between 1995 and 2001. The maternal death due to eclampsia has increased by double. It is interesting to note that the cause of maternal death due to anaemia was zero, while the number of maternal deaths caused by haemorrhage is still high. The possible explanation for this might be all anaemia cases developed into bleeding, or anaemia cases are not well recorded and reported (World Bank 2010). Compared to report in 2013, Indonesia, hypertension during pregnancy is a major cause of maternal death (32% of all maternal deaths), and followed by complication of

puerperium (31%) and postpartum haemorrhage (20%) (MOH-RI 2013a).

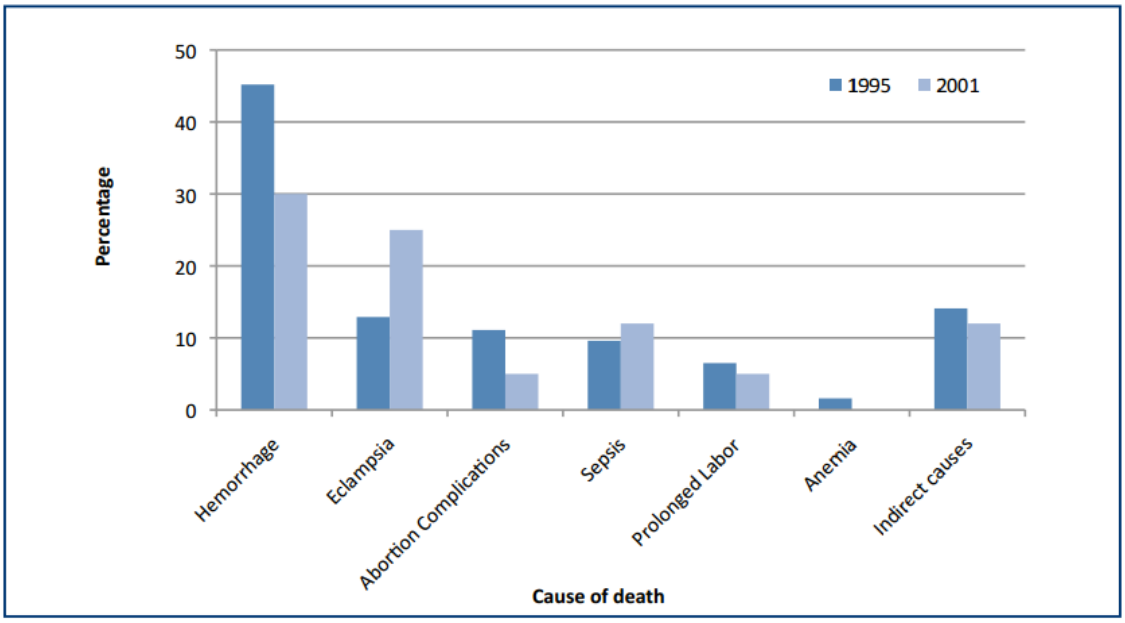

Figure 2: Causes of Maternal Death over Time (1995-2005)

(Source: World Bank 2010)

Chapter II: Problem Statement, Justification, Objectives, and Methodology

2.1. Problem Statement and Justification

Maternal Mortality Ratio (MMR) is a key indicator to measure the Millennium Development Goals 5 (MDGs 5) (Broek & Falconer 2011). About 99% of maternal mortality took place in low- and middle-income countries and one third occurred in South Asia (WHO 2011). According to WHO (2014), Indonesia is one of ten countries that contributes to 58% of maternal death globally. WHO estimated MMR in Indonesia at 190 per 100,000 per live births in 2013 (WHO 2014). The country targets 102 maternal deaths per 100,000 live births by 2015 (Webster 2012).

Maternal morbidity and mortality bring impacts on economic growth. The Partnership for Maternal, Newborn & Child Health (PMNCH) study shows that maternal death affects the reduction of Gross Domestic Product (GDP) in Indonesia by 26 % (Amiri & Gerdtham 2013). According to cohort study (2012), women with severe complication have a high risk of depression and physical symptoms resulting difficulties in daily activities and financial constraints (Iyengar, Yadav & Sen 2012). The survival of children is also significantly influenced by maternal death. The chance to lose the child before 12 years old increased by 55% (Anderson et al. 2007). Thus, decreasing maternal morbidity and mortality could bring positive impact on economic growth and child survival.

Ensuring the availability and access to Skilled Birth Attendants (SBAs) could save mothers from the complication related to pregnancy (Joana et al. 2012). Therefore, in 1989 the government of Indonesia launched Village Midwife Program *(Bidan Desa).* The purpose of the Village Midwife Program is to assign skilled birth attendants in every village to provide maternal health services, such as care before, during and after labour (Shankar et al. 2008). According to Shrestha (2007) fifty thousand midwives were trained and posted in villages by 1997. As a result, there has been a significant progress. The MMR decreased gradually and the coverage indicators on maternal health such as births attended by skilled providers, antenatal visit and postnatal visit have been increasing (IDHS 2012).

However, the challenges are remaining, particularly in the rural area. As reported, the responsiveness of the health care system to women's needs and friendly attitudes greatly influences the health seeking behaviour of a woman. The women give these reasons for the preference for a delivery attended by Traditional Birth Attendants (TBAs) rather than midwife (Titaley et al. 2010a).

Moreover midwives are absent in the village due to frequent travel made by them to the cities. Furthermore, this leads to mothers preferring home delivery attended by TBAs who are available and more accessible.

Quality of care was found challenging in a study in rural West Java. This study found that midwives performed interventions without adequate indication, such as episiotomy and manual placenta removal (D'Ambruoso et al. 2009). The above evidence refers to poor quality of maternal health care. It also relates to the importance of staff attitudes and the availability of staff at the health facility.

A study revealed that to reduce MMR, the strategies are needed not only for increasing the coverage and utilization maternal health services, but also for improving the quality of maternal health care (Raven et al 2012). A study in Kenya found there was a strong relationship between the perceived quality of health care and the utilization of health services (Audo, Ferguson & Njoroge 2005). World Bank (2010) emphasizes that poor quality of care contribute to 60% of maternal mortality. Additionally, van den Broek and Graham (2009) found that in low and middle income countries, the quality of maternal health care seems to be neglected.

Hulton et al. (Cited in Raven et al. 2012) defined quality of care as "the degree to which maternal health services for individuals and populations increase the likelihood of timely and appropriate treatment for the purpose of achieving desired outcomes that are both consistent with current professional knowledge and uphold basic reproductive rights." This definition highlights two essential aspects of care; the quality provision of care and the quality of care that is experienced by clients. In addition, Graham and Varghese (2012) interpreted good-quality care as "care that is effective, safe and a good experience for the patient."

An effective approach is required in order to provide good quality of maternal health care to people. Renfrew et al. (2014) reveals that midwifery care is an essential component that contributes to improve quality of maternal health care.

Therefore, I would like to analyse factors determining the quality of maternal health provided by midwives in Indonesia and identify interventions for improvement.

2.2. Objectives

2.2.1. General Objective

To analyse factors influencing the quality of maternal health care in Indonesia and identify effective interventions for improvement.

2.2.2. Specific Objectives

1. To analyse factors influencing the quality of maternal health care in Indonesia.
2. To identify effective interventions to improve the quality of maternal health care in Indonesia
3. To provide recommendations for improvement of the quality of maternal health care in Indonesia.

2.3. Methodology

2.3.1. Study Design

This study explores secondary literatures regarding the quality of maternal health care and analyse evidence to develop interventions for improvement. The information is collected through literature review.

2.3.2. Search Strategy

The search engines used for this review are, VU library as a library catalogue, as well as PubMed and The Cochrane library as databases. In additional, the data is gathered through specific websites such as WHO, UNFPA, ICM, World Bank, PMNCH, MOH of Indonesia, USAID. The Ministry of Health of Indonesia data reports, articles, and policy papers are also used. In order to provide more relevant evidence, the literatures selected are between year 2004 and 2014.

2.3.3. Keywords

In order to explore the information related to factors influencing the quality of maternal health care, the keywords quality, maternal, health, care, midwife, attitude, value, philosophy, assurance, education, promotion, screening, competency, perception, complication, delivery, training, accreditation, rural and Indonesia were used.

Keywords applied to find the most effective strategy to improve the quality of maternal health care are strategy, intervention, improve, quality, maternal, midwifery, health, responsiveness, mechanism, quality assurance, supervision, demand side, effective, competence, satisfaction, utilization, outcome, best practice, rural and care, evidence.

2.3.4. Conceptual Framework

A conceptual framework is important in every research to guide the process of the analysis and link to the thesis's objectives. This study utilizes the latest framework for quality of maternal health care (Renfrew et al. 2014). There are three main reasons for choosing this framework. First, this framework covers all dimensions of quality health care, which are effective, efficient, accessible, acceptable, equitable, and safe (WHO 2006). Second, this framework focuses on maternal health care, which is the topic of this study (Renfrew et al. 2014). Third, this framework can be applied in all settings, including Indonesia (Renfrew et al. 2014).

This framework highlights the care and services that women need which contribute to the quality of maternal health care (Renfrew et al. 2014). The framework will guide in by considering the client perspective as well as the health provider perspective. The framework will also help to take into account the need of health care provider for improving quality. There are five major components of this framework, namely practice categories, organization of care, values, and philosophy of health provider in the health system, as well as the characteristic of health care provider. All components are essential aspects of maternal health care and they are interrelated. The importance of practice categories is that it captures the essential activities in maternal health. For instance, health education is important for women to understand their needs and for decision-making (Renfrew et al. 2014).

As this study focuses on the primary care level of health facilities and, specifically maternal health care provided by midwives before, during and after delivery, the more advanced medical obstetric neonatal services provided by hospitals will not be discussed. The next chapter will discuss each level in detail.

Below is the conceptual framework:

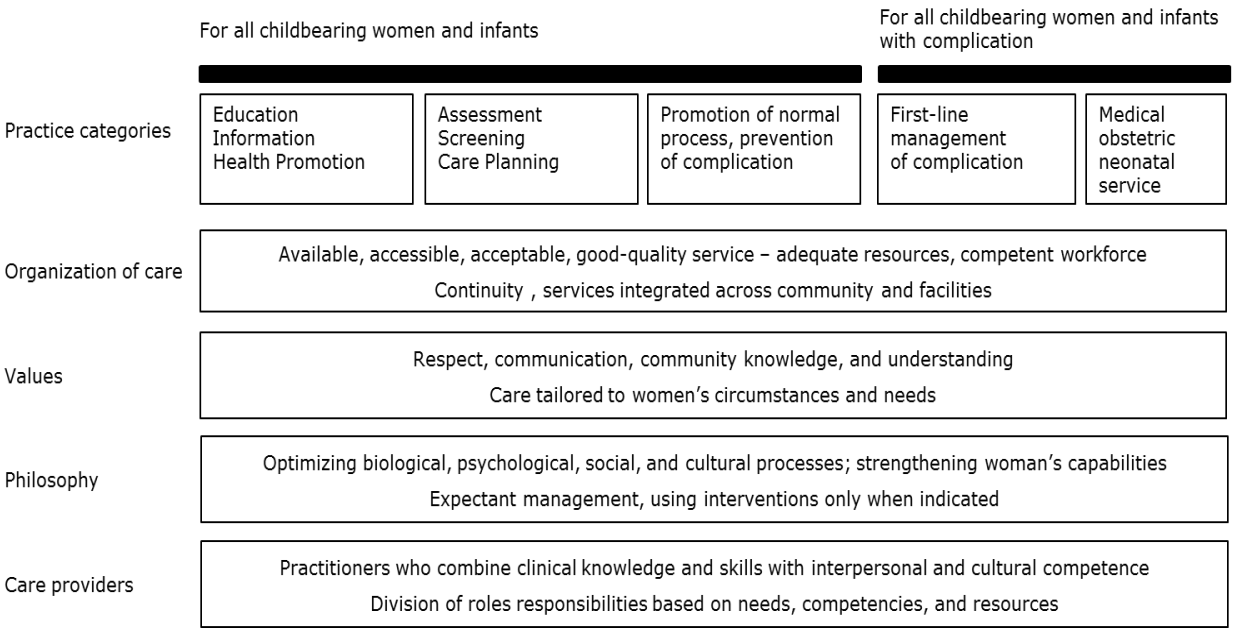

Figure 3: The framework for quality maternal health care

(Source: Renfrew et al. 2014)

Chapter III: Factors influencing the Quality of Maternal Health Care

This chapter presents the evidence related to factors influencing the quality of maternal health care in rural Indonesia. The chapter is organised by using the conceptual framework as a guide. There are five components described, namely practice categories, organization of care, value, philosophy of care and care providers. The summary of this finding is shown in the annex 2.

3.1. Practice Categories

Practice category is related to technical care as a basic element of quality. Technical care is provided by applying knowledge and skills of health providers, which bring benefit to the client in terms of improving health status and reducing risks (Donabedian cited in Izumi, Baggs & Knafl 2010). According to the framework, this component highlights four aspects, namely: health promotion or education; assessment, screening, care planning; promotion of a normal process, prevention of complications; and first-line management of complication (Renfrew et al. 2014).

4.1.1. Education, Information and Health Promotion

WHO defines health promotion as "a process of enabling people to increase control over and to improve their health" (Groene & Jorgensen 2005). WHO (2013) provides a guideline of counselling for maternal and newborn health care. The handbook covers general care in the home during pregnancy, birth and emergency planning, danger signs in pregnancy, post-abortion care, support during labour and childbirth, post natal care of mother and newborn, family planning counselling, breastfeeding, women with HIV/AIDS, death and bereavement, women and violence, and linking with the community. Renfrew et al. (2014) interprets that health education and promotion are important to support women to understand their condition and to assist them in the decision making process.

According to a study in West Sumatra province, education level of women influences adequate maternal health care uptake (Agus & Horiuchi 2012). Health information and health promotion are not able to replace primary and secondary education, but can make a difference in understanding maternal health issues and improving health seeking behaviour. Several studies emphasize the importance of this service. For instance, providing health

education of the importance of iron supplement and how to deal with its side effects can prevent anaemia in pregnant women (ElHameed, Mohammed & Hameed 2012). Another study in Central Java reveals that health education of safe birth is a recommended approach to reduce maternal mortality (Nuraini & Parker 2005). Furthermore, giving information about breastfeeding after delivery significantly increases exclusive breastfeeding up to 6 months (Rosen et al. 2008).

Particularly in rural setting, a midwife plays an important role to provide health information where the education level of the citizen is relatively low. However, a study in West Java province shows that midwives did not provide health promotion to the client, such as danger signs of pregnancy, birth preparedness, including safe place of birth, nutrition and breastfeeding (D'Ambruoso et al. 2009). As hypertension is the first cause of maternal death in Indonesia, education of danger signs during pregnancy is essential to prevent further complication and death. The possible reason of not providing health education is, probably they do not have enough time to provide those services as well as the lack of compliance to follow the guideline.

4.1.2. Assessment, Screening and Care Planning

WHO guidelines regarding the ANC (Antenatal Care) reveals that midwives should do an examination of complete general, obstetric, blood pressure, anaemia, fetal growth as well as screening of haemoglobin, syphilis, HIV, proteinuria, blood/Rh group and bacteriuria during the ANC visit (Lincetto et al. 2006). Similar to global guidelines, Indonesia has seven minimum standards of antenatal care which include measurements of weight, blood pressure, the height of fundus uteri, tetanus toxoid immunization, providing iron tablets, test of STI, HIV/AIDS and malaria, as well as counselling (MOH-RI 2007). Other than the seven minimum standards, in 2012, Ministry of Health adds additional examination, including examination of haemoglobin, blood group, urine protein, TBC, malaria and syphilis (MOH-RI & USAID 2012).

A study in West Sumatra found that only 6% of midwives checked protein urine during ANC visit. Moreover, only 60% of midwives conducted seven minimum standards (Agus & Horiuchi 2012). Additionally, considering PPH (Postpartum Haemorrhage) as the first cause of maternal death in

Indonesia, haemoglobin test is a crucial service to detect anaemia in order to prevent PPH. However, some midwives were not able to do a haemoglobin test due to lack of skill and lack of resources such as reagent and dip stick (D'Ambruoso et al. 2009; Widyawati et al. 2014).

4.1.3. Promotion of Normal Process and Prevention of Complication

3.1.3.1. Partograph Use

In delivery care, using the partograph is recommended by WHO in order to monitor labour and identify the complication in order to prevent maternal death due to delay in receiving treatment. The policy of partograph use is also part of labour surveillance in Indonesia (MOH-RI 2012b).

However, studies in two provinces in Indonesia found that midwives did not fill in partograph regularly (D'Ambruoso, Byass & Qomariyah 2010; Fahdhy & Chongsuvivatwong 2005). They complained about too many details that have to be completed (Fahdhy & Chongsuvivatwong 2005). As a result, midwives could not make right care planning, as they were not able to do assessment properly regarding early detection for complication. Furthermore, 35% of women who were beyond the alert line were not referred to the hospital by midwives (Fahdhy & Chongsuvivatwong 2005). Most of midwives tried to handle it by themselves (Fahdhy & Chongsuvivatwong 2005). Lack of monitoring and supervision might be a factor determining the compliance of midwives in filling partograph and the appropriate intervention afterward (Shankar et al. 2008).

3.1.3.2. Normal Delivery

Unnecessary intervention during the normal process of delivery can increase the risk of complication. Romano and Lothian (2008) reveal six evidence-based care practices promote physiological birth: "avoiding medically unnecessary induction of labour, allowing freedom of movement for the labouring woman, providing continuous labour support, avoiding routine interventions and restrictions, encouraging spontaneous pushing in non-supine positions, and keeping mothers and babies together after birth without restrictions on breastfeeding". The evidence are interpreted in the guidelines of Normal Delivery Care *(Asuhan Persalinan Normal - APN)* in Indonesia.

In practice, the intervention such as episiotomy is only needed when the complication occurs. This intervention is indicated as potentially harmful intervention and should be restricted (Ho et al. 2010). It can increase dyspareunia and perineal pain after delivery (Sartore et al. 2004). In delivery care, midwives are allowed to do episiotomy, but should be with adequate indication. However, a study in rural Indonesia shows that some midwives conducted episiotomy in order to accelerate baby to come out (Agus, Horiuchi & Porter et al. 2012). Another reason is that the midwives found it easy to repair (Ho et al. 2010). In addition, a study in Java, Indonesia found that midwives tried to pull out the baby with inappropriate force which is not in line with the normal delivery care guidelines (Ambruoso et al. 2009).

3.1.3.3. Active Management of Third Stage Labour

Renfrew et al. (2014) reveals that active management of third stage labour is effective practice to prevent haemorrhage as the third cause of maternal death in Indonesia. The International Federation of Gynecology and Obstetrics - International Confederation of Midwives (FIGO – ICM) defines it covers three main interventions, which are the use of uterotonic drugs, controlled cord traction and massage immediately after delivery of the placenta (Stanton et al. 2009). These interventions are also provided in the APN guidelines in Indonesia (World Bank 2010). However, a study found that midwives did not follow the guidelines by trying to do the manual placenta removal without proper preparation and adequate indication (Ambruoso et al. 2009).

3.1.3.4. Early Initiation of Breastfeeding

Early initiation of breastfeeding can prevent bleeding during the fourth stage of delivery (Sobhy & Mohame 2004). Cochrane review shows the effectiveness of this intervention as well as bringing several benefits for mothers and babies, which are improving breastfeeding outcomes, cardio-respiratory stability and decreasing babies' crying (Moore et al. 2012). Yet a study in Nisa Island shows that only 39% of midwives promoted skin-to-skin and immediate breastfeeding after delivery of the baby (Inayati et al, 2012).

The evidence above shows that there is a gap between the actual practice and the guidelines. Similar to the compliance of partograph use, the monitoring and supervision might be the main factors that influence those practices.

4.1.4. First Line Management of Complication

Adequate referral mechanism is essential to manage complications appropriately and save the mother from death. In rural settings, midwives play an important role to ensure the referral system is going well. MOH of Indonesia collaborating with WHO, developed the guidelines of basic maternal health services and referral mechanism for health providers (MOH-RI 2013b). By understanding the guidelines and following the procedure, maternal death can be prevented on time.

According to the guidelines, midwives should conduct adequate communication with the referral health facility; bring the essential documents such as form and patients' history; and bring certain equipment and drugs such as Doppler, diazepam and magnesium sulphate. However, a study conducted in West Java province indicated late and poor quality of referrals. In several cases, midwives did not follow the procedure and did not bring essential drugs and important documents when referring mother to the hospital (D'Ambruoso, Byass & Qomariyah 2010). It might be influenced by the midwives' knowledge and skill and the guidelines use.

3.2. Organisation of Care

The continuum of care and good quality of service are also influenced by the availability, accessibility, and acceptability of health care providers as well as policy, adequate resources and supervision (Renfrew et al. 2014). Even though Quality Assurance (QA) is not mentioned in the framework, it has to be in place. The mechanism of quality assurance in Indonesia has been described in the background, including equipment and supply, training, use of guidelines as well as supervision and monitoring.

3.2.1. Availability and Accessibility

Titaley et al. (2010a) found that midwives were often absent due to travelling out of village regularly. Nasir et al. (2014) revealed several factors that cause midwives in SW Sumba do not standby in their assigned village are the availability of basic facility such as clean water and electricity, as well as

having a husband working elsewhere and lack of education facilities for their children.

3.2.2. The Acceptability of Midwife in Community

Acceptability and accessibility of midwives influence the interpersonal relationship between providers and clients, and the satisfaction of women, which leads to improve the health status of mothers (ICM 2013a).

ICM (2013a) states, three components regarding acceptability, namely: "a culturally appropriate physical environment; providers skilled in providing culturally competent care, information made available to women and families regarding facilities and service".

In the context of Indonesia, acceptability of midwives in the village are influenced by community perceptions. Village midwives are perceived to be too young and have little experiences (D'Ambruoso et al. 2009; Makowiecka et al. 2008). As a result, they get low acceptance, are seen as not trustworthy in their competencies and likely isolated in the community. Furthermore, this situation affects the retention, motivation and job satisfaction of midwives in villages (D'Ambruoso et al. 2009).

3.2.3. Policy

As per WHO, extraction using vacuum, manually removing the placenta and management of the sick neonate is the lifesaving procedures that can be safely performed by health workers who have midwifery skills. Countries have used this fact to review the policies at National level to perform these procedures (de Graft-Johnson et al. 2006). Similar to WHO, UNFPA indicates that midwives as an attendant in most of births should be trained how to operate vacuum that can be used to save the mother from death. Particularly, it is crucial in rural areas where the distance between midwifery clinic and referral hospital is quite far. However, the policy in Indonesia implied that midwives are not legally allowed to provide vacuum extraction (White, Patrice & Levin 2006).

3.2.4. Adequate Resources

According to the analysis of World Bank of Indonesia in 2010, the number of maternal deaths due to eclampsia doubled between 1995 and 2001. This complication can be prevented by using $MgSO_4$ (*Magnesium Sulphate*) for pregnant women with hypertension (Duley et al. 2010). In

addition, however, a study in West Java shows that midwives did not use MgSO4 for treatment (D'Ambruoso et al. 2009). Another study emphasizes 80% of midwives did not have MgSO4 (World Bank 2010). Inadequate supply of drugs and equipment was indicated as the main cause of this issue (World Bank 2010).
A survey in West Nusa Province reports that only 10% of delivery facilities have steriliser and resuscitation equipment. While 89% report of availability of delivery kit only 61% report of a midwife kit being available. In terms of supplies, World Bank reports only 54% of private midwives having the Hepatitis B vaccine in stock. There are reports of the lack of emergency resuscitation drugs and equipments from the health centres of the Serang district (GHWA 2013).

3.2.5. Supervision

Supervision is essential to ensure quality of health care providers by assessing their poor performance in order to identify the needs for further development of competencies. In maternity care, supervision is needed to assess the performance of midwives and also ensure the supply of equipment and drugs. Management Sciences for Health (MSH) and United States Agency for International Development (USAID) (2006) provide international guidelines for supervision called Clinic Supervisor's Manual. This guideline was designed to assist clinic supervisors and clinic managers to reach objective improvements in the quality of health care.

The government of Indonesia has also developed the checklist for supervision; however the use of this guideline is unclear.

In the midwifery service, supervision of midwives is the responsibility of the health centre (Makowiecka et al. 2008). Particularly, the head of the nearest primary care clinic is often delegated in supervising the midwives. However, Shankar et al. (2008) stated that the supervision and monitoring of midwives in Indonesia was inadequate. Moreover, unclear job description and lack of supervision skill were identified as a difficulty to monitor midwives' performance (Hennessy, Hicks & Koesno 2006).

3.2.6. Continuity of Care

Continuity of care is defined as "fewer cares during pregnancy and the presence of a known midwife in labour" (Carolan & Hodnett 2007). This influences the quality of care

in terms of satisfaction and support (Carolan & Hodnett 2007).

One of the purposes of the Village Midwife program is to ensure continuity of care provided by midwives. As seen in the figure below, according to IDHS (2007), there is a gap between utilization of various services. The coverage of birth attended by skilled providers was lower than the coverage of first ANC visit, and followed by much more decline coverage in postnatal care and family planning.

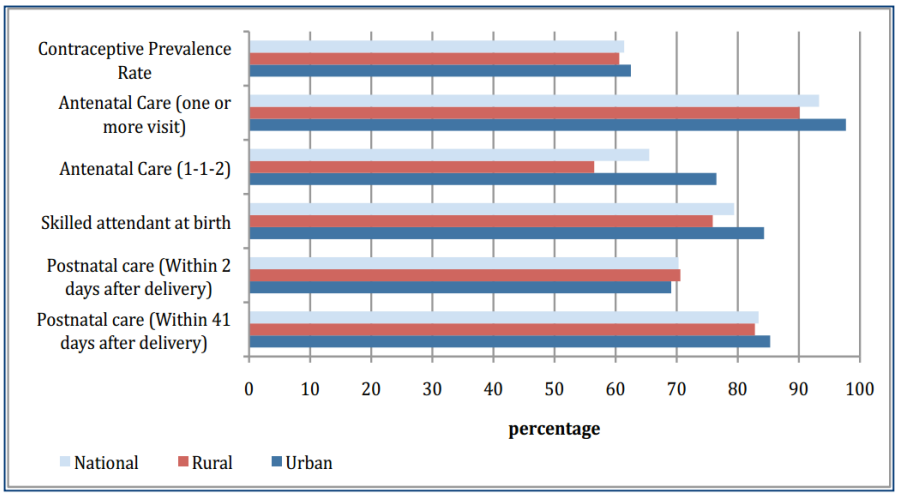

Figure 4: The continuum of care

(Source: IDHS 2007)

A study shows that geographic factors influence the continuity of care. It is related to barriers, such as distance and costs of services to access the health facility which has been discussed in the background. The continuity of care is also determined by the relationship between health providers and clients as well as the availability, accessibility and acceptance of the providers (Alazri et al. 2007).

The continuity of care provided by health providers is most likely falling short in rural areas. The absence of midwives in the village is the main cause of this issue. As a result, continuity of care throughout pregnancy is not optimal. Pregnant women could not visit for antenatal care frequently and sometimes missed midwives in delivery and post-natal care (Titaley et al. 2010a). In some cases, antenatal care and postnatal care were often provided by different midwives. Moreover, the absence of midwives also affects women to seek for TBAs in delivery care.

3.3. Values

Patients' perception of care quality influences patient satisfaction with services (Raven et al. 2012). The attitude of the health providers significantly influences the satisfaction and compliance of clients with advice suggested (Kim, Kaplowitz& Johnston 2004). A study in Lombok showed that there was a significant association between perception of quality care and the compliance and utilization of health facilities (Saimi 2006).

Some women feel safe if their delivery is attended by a midwife. According to interview data, the midwives were perceived as providing interventions immediately when a prolonged delivery occurred. In contrast, the TBA was only waiting and could not do anything. They also perceived that delivery attended by TBA was not safe, as they delivered a baby without gloves (Agus, Horiuchi& Porter 2012).

Another study found that women had bad experience during visiting the midwifery clinic. They felt that a midwife ignored and neglected them, as they are poor. According to the interview with the clients, the midwife did not really care for the poor people compared to people who paid directly. Poor people do not need to pay for the service, because the midwives will get incentive from the government toward health insurance. However, midwives complained that the reimbursement of health insurance is delayed many times. It might influence the attitude of midwives in their service of delivery (D'Ambruoso, Byass & Qomariyah 2010). Additionally, women regarding their attitude while delivering service, such as lack of respective, less attentive, intentional humiliation and verbal abuse (Widyawati et al. 2014), had negative perceptions about the midwives. The factor that influences the attitude of midwives was not found. The skill of midwives in terms of interpersonal communication might be a factor determining their attitude.

3.4. Philosophy of Care

Midwifery philosophy is defined "as a statement of beliefs about the nature of midwifery practice or midwifery education" (ICM 2011). The midwife's view of midwifery philosophy influences how midwives provide the maternity service. For example, in normal birth, midwives should not give intervention, such as induction and refer for caesarean section (Lavender & Chapple 2004). However, D'Ambruoso et al. (2009) found that midwives tried to speed the delivery by pulling the baby to come out.

A study in West Java reveals that pregnancy, as viewed by women is a part of the normal cycle of life; it is not sickness and every problem or complication, even death during this period is believed as fate of God (Agus, Horiuchi & Porter 2012). Particularly for multiparous women, who had more experience than primiparous women (Finlayson & Downe 2013). Therefore, they tend to rely on TBA who supports normal birth (Agus, Horiuchi & Porter 2012). Furthermore, they perceive that midwifery clinic and other health facilities are only needed for complicated cases (Titaley et al. 2010).

Considering the role of TBAs since long time ago, they have a strong cultural understanding in the community. Women fear if they do not follow TBAs. The emotional closeness between TBA and community builds trust and creates loyalty among them. Therefore, *dukun* (TBA in Bahasa) are perceived to have more experience, more kind, tolerant and patient (Agus, Horiuchi & Porter et al. 2012; Titaley et al. 2010b). A study conducted by Titaley et al. (2010b) showed that midwives left the women after delivery, while TBA waited patiently and accompanied the woman all along.

The perception by women about good interpersonal response of TBAs leads to women not wanting to get service from health facility by a midwife. This leads to low coverage of care in a health facility. A study shows that some women in West Java province felt comfortable with TBAs as they gave massage after delivery in order to restore the woman's body like before pregnancy. The TBA also took care of the baby's cord and bathed the baby (Agus, Horiuchi & Porter 2012). Nasir et al. (2014) reveals that lack of flexibility among health providers in providing local practices such as massage and hot bath influences the poor perception of service quality. Cultural competence among midwives seems to be the factor that influences midwives to not be responsive to cultural tradition.

3.5. Care Providers

According to Renfrew et al. (2014), the component of care providers covers "practitioner who combines clinical knowledge and skill with interpersonal and cultural competence."

ICM has developed essential competencies for basic midwifery practice in 2010. The document reveals seven competencies which include "competencies in social, epidemiologic and cultural context of maternal and newborn care; competency in pre-pregnancy care and family planning; competency in provision of care during pregnancy; competency in provision of care during labour and birth; competency in provision of care for women during the postpartum period; competency in postnatal care of the newborn; competency in facilitation of abortion-related care" (ICM 2013b). To ensure the

quality of care, midwives should bring varied competencies including clinical knowledge and skill with interpersonal and cultural competence. The evidences related to those competencies have been presented in previous components, practice categories, values and philosophy.

Chapter IV: Intervention to improve the Quality of Maternal Health Care

This chapter presents the options for intervention to address the gaps in order to improve the quality of maternal health in developing countries. The majority of strategies are based on analysis of Cochrane systematic reviews, which indicate that these strategies are effective strategies. The summary of this finding is described in the annex 3.

4.1. Maternal Health Audit and Feedback

Pattinson et al. (2009) defined perinatal audit as "the systematic, critical analysis of the quality of perinatal care, including the procedures used for diagnosis and treatment, the use of resources and the resultant outcome and quality of life for women and their babies." Perinatal audits are considered to influence the quality of care. According to meta-analysis of low and middle-income countries studies, perinatal audit reduced the perinatal mortality by 30% (95% confidence interval, 21-35%) (Pattinson et al. 2009). Moreover, a systematic review conducted by Ivers et al. (2012) shows that audit and feedback increase the compliance of health personals by 4.3% compared to control group.

The effectiveness of audit and feedback is influenced by how the feedback is delivered and baseline performance (Ivers et al. 2012; Hysong 2009). Hysong (2009) emphasizes that the feedback, which is provided with written and frequent specific suggestions can improve the effectiveness of audit and feedback.

4.2. Cultural Competence Education

Grote (2008) interpreted cultural competence as "builds on the strengths of earlier concepts such as cultural awareness, cultural security, cultural respect, and cultural safety, extending them further to facilitate changes in all dimensions of practice, including the levels of the practitioner, the organization and the system." Based on a systematic review conducted by Beach et al. (2005), cultural competence education intervention improves health personals' knowledge, attitudes and skills. In addition, even though there is a lack of evidence regarding the adherence of patients and patients' health status outcome, however, there is good evidence that cultural competence education improves the satisfaction of clients (Beach et al. 2005). Moreover, a recent systematic review done by Horvat et al. (2014) reveals that cultural competence education intervention improves the clients' perception of health professionals and mutual understanding between health providers and clients. The intervention of cultural competence education can

be applied to health workers, such as doctors, nurses, midwives and community health workers through training, workshop; as well as tailored education programs for patients through interpreter services and peer education (Truong, Paradies& Priest 2014).

4.3. Educational Outreach Visits (EOVs)

Althabe et al. (2008) defined Educational Outreach Visits (EOVs) as "the use of a trained person who meets with providers in their practice settings to provide information." The aim of this intervention is to improve the quality of professional health care practice (O'Brien et al. 2007). Educational outreach visits have a double function, not only providing education, but also conducting supervision as the information provided may include the feedback of the performance of health workers.

According to a systematic review conducted by O'Brien et al. (2007), educational outreach visits can improve the compliance of health workers by 5.6% compared to control group. Moreover, educational outreach visits improve consistently with small change in prescribing and provide small to moderate change in other practices, such as screening tests (O'Brien et al. 2007). Althabe et al. (2008) found that educational outreach visits are identified more effective than audit and feedback intervention; however, there is a lack of evidences that show the cost effectiveness of educational outreach visits.

4.4. Optimizing the role of Lay Health Workers (LWHs)

Lewin et al. (2010) defined a Lay Health Worker (LHW) as "a member of the community who has received some training to promote health or to carry out some health care services, but is not a healthcare professional". Lay health workers include Community Health Workers (CHWs) and Traditional Birth Attendants (TBAs). In order to improve access to the maternal health care services, WHO recommends optimizing the role of lay health workers through task shifting (WHO 2012). According to WHO (2012), lay health workers are recommended to promote uptake of maternal health care behaviour and services, administer misoprostol to prevent postpartum haemorrhage, as well as providing continuous support during labour with the presence of a skilled birth attendant. Moreover, lay health workers are also recommended to distribute oral supplement to pregnant women with targeted monitoring and evaluation (WHO 2012).

A systematic review conducted by Lewin et al. (2012) shows that involving lay health workers in health service delivery may not significantly improve the health outcome, such as low birth weight;

however, this intervention results in a higher frequency of utilization coverage of health clinics and decreases stress levels among late-pregnant women. Another systematic review by Britton et al. (2007) found that lay health worker intervention is effective to increase the initiation of breastfeeding and exclusive breastfeeding. Furthermore, task-shifting from midwives to the community health worker increases acceptability of emergency obstetric care (Byrne et al. 2014).

4.5. Group Prenatal Care

A cluster-randomised controlled trial conducted by Jafari et al. (2010) in Iran shows that the group prenatal care improves the satisfaction among clients and the utilization coverage of health facilities. Around seventy percent of women in group prenatal care continued to do antenatal visit compared to only 37.3% among women in individual group. The implementation of group prenatal care was by dividing groups with 8-10 women of each and providing 10-time meeting during pregnancy. Each meeting takes 90 to 120 minutes. Training of midwives is required before the group prenatal care begins. At each meeting, individual assessment, including weight and blood pressure is conducted during the first 30 minutes. Then, it is followed by a discussion session between a midwife and group members. The theme of discussion session includes "prenatal nutrition and fetal development; common discomforts of pregnancy; relaxation and labour; pregnancy problems; the birth experience; decisions about pregnancy and developing a birth plan; infant feeding; postpartum adjustment; new baby care; baby and mother care."

Additionally, a retrospective cohort study in low-income population shows that there is a negative association between group prenatal care and preterm birth (OR= 0.53; 95% confidence interval, 0.34–0.81) (Picklesimer et al. 2012). It means that a group prenatal care influences positive health outcome.

4.6. Addressing gaps in drugs & equipment supply

Gaps in drugs and equipment supply need to be addressed at national level. These are the issues, that concern all other health services, not merely concerning the maternal health services. However, studies on interventions focusing on supplies could not be found in literature searches.

Chapter V: Discussion

Maternal death is a crucial problem in every country. Although the Maternal Mortality Ratio (MMR) in Indonesia has reduced to 190 per 100,000 live births in 2013 from 228 in 2007, the current figure is still high (WHO 2014; IDHS 2012). In order to reach the targets 102 maternal deaths per 100,000 live births by 2015, strong commitment in higher level and effective strategies are needed. By increasing the utilization coverage of health facilities, it can increase the coverage of birth delivered by skilled birth attendants which can prevent the maternal death due to complications. However, ensuring high utilization coverage only, is not enough. The health outcome is also influenced by the quality of care in maternity services. WHO in the world report 2005 emphasizes that increasing the utilisation coverage and good quality of maternal health care are key strategies to reduce maternal morbidity and mortality.

According to the definition of quality of maternal health care, there are two important indicators; satisfaction of client and adequate clinical practices. Satisfaction of client is affected by the perceived quality of care, which influence mother to continue visiting the health facilities. While adequate clinical practices are the result of the performance of clinical competency of health providers, which influence the health outcome of patients.

By using the latest framework assessing quality of maternal health care developed by Renfrew and colleagues (2014), the implementation of maternity services in Indonesia and the factors influencing the gap between actual practice and indicators of good quality are presented. Five components of quality of maternal health care on the framework are considered to influence the satisfaction and clinical practice. Each component has a link to indicators of quality of maternal health care.

The evidence indicates there are several factors that influence the quality of maternal health care services, provided by midwives in Indonesia. The first factor is lack of competence among midwives. Based on the findings on practice categories, it shows that Indonesian midwives have a lack knowledge and skill competency. As a result, midwives could not provide health promotion and screening, such as haemoglobin test. Another issue is the policy of restriction of vacuum extraction might limit the skill of midwives, which is essential to be performed in order to save live mothers from complication. Furthermore, lack of cultural and interpersonal competence is also faced by Indonesian midwives, particularly in the village. Compared to TBAs, midwives have a lack of responsiveness in practice, such as massage and bath after delivery. Some midwives are also perceived inpatient and guilty. Lack of training among midwives might be a factor affecting their poor competencies.

The second factor is inadequate supervision and monitoring which lead to non-compliance among midwives with the guidelines. The evidence shows

that unclear job description and lack of supervision skill are found as factors influencing weak supervision and monitoring of practice midwife's practice. Even though the checklist of supervision is in place, but the standard supervision system is missing. The shortage of trained personnel in the supervision and monitoring also leads to poor implementation of supervision. Moreover, poor quality of report and data collected by midwives affects the feedback mechanism. This in turn affects opportunity of improvement or encouragement for midwives based on their performance.

Thirdly, insufficient drug and equipment supply is indicated affecting the poor service provision. The evidence shows that due to lack of screening tools, midwives could not conduct a haemoglobin test during prenatal visits. The factor determining inadequate supply is unclear. However, inadequate planning at ministry level could result in this shortcoming.

The fourth factor is overload tasks of midwives in the village which lead to not enough time to provide health promotion. Even though there is limited evidence of overload at work among midwives in literarture; however, based on my experience during the midwifery course, some midwives complained about their overload works in the village, such as reporting and providing general care. Additionally, lack of community participant program in village level might affect the absence of particular services.

According to four main factors as mentioned above, six effective interventions can be done to address the gaps in order to improve the quality of maternal health services in Indonesia. They are maternal health audit and feedback, cultural competence, education, educational outreach visit, optimizing the role of lay health workers, group prenatal care and ensure adequate supply of drugs and equipment.

As the lack of competency among midwives in terms of cultural practice, rising cultural among midwives is needed by providing cultural competence education. Improving cultural competence education can be implemented through training or workshop. In the context of Indonesia, as there are several ethnic groups with different culture, this training should be conducted based on the working area or community. Before implementing this training, pilot study regarding traditional practice in different ethnic groups is needed in order to prepare the material for training. The evidence shows that providing cultural competence education can improve mutual understanding between provider and client, as well as client’s satisfaction and perception. This intervention is proven can improve the health workers’ knowledge, attitudes and skills. Therefore, it might improve the responsiveness of midwives in service delivery, such as become more patient and provide massage after delivery.

Another intervention to improve client’s satisfaction and utilization coverage is group prenatal care. This intervention seems to be effective,

according to randomised controlled trial in Iran. In the context of Indonesia, group prenatal care might be can work in urban area than rural. It is due to geographical constraint in some village, such as road condition and the availability of transportation. Optimizing the role of lay health workers might be more feasible, implemented in rural setting.

The lack of skill and knowledge among midwives can be addressed by conducting educational outreach visit. This intervention also can be applied for supervision and monitoring which is inadequate implemented in Indonesia according to the findings. In order to apply educational outreach visit, national pool of facilitators is needed. Considering the function of lectures in education institution such as midwifery school, the role of lectures might overcome to reach the sufficient number of facilitators. Based on my experience as a lecturer in Health College, most of midwifery schools have a program to improve health status in the community by conducting several activities such as health promotion and training of village midwives. The budget is also included in the planning which is provided by the school. This collaboration between education institution and health facility would be beneficial for both sides.

In order to increase compliance among midwives, the maternal health audit and feedback are needed. In Indonesia, the implementation of maternal health audit is in place. However, the quality of its implementation is unclear. To reach the effectiveness of the maternal health audit and feedback, the government should strengthen activities in information system and ensure the reports are properly collected.

Considering the access constraint and lack of time of midwife, optimizing the role of lay health providers through task shifting might be the best option. This intervention might address not only accessibility issue, but also acceptability among midwives in the village. Based on the guidelines from WHO and the context of Indonesia, lay health workers could provide health promotion to improve health seeking behaviour in the village. Moreover, the training capacity of lay health workers is needed to carry out those functions. Distribution of education material and providing simple manual reminders such as chart and poster are also needed to guide the service provided by lay health workers.

The gaps in the supply of drugs and equipment may affect not only maternal health care, but the health system as the whole. However the intervention focusing on this gap is not found.

Analysis of the Framework

The framework is the latest framework of quality of care and focus on maternal health care. It has clear categories encompassing various aspects of quality maternal health care. Clear categorisation also makes it easy to understand.

After using the framework in this study, though factors affecting the quality can be analysed using this framework, I found that it provides more opportunity to assess the quality compared to the analysis of factors. Quality Assurance (QA) is missing in the framework and some elements are overlapping such as value, philosophy and a care provider.

Study Limitation

The first limitation of this study is in terms of language, as the study only considers literature in English and Bahasa Indonesia. Secondly, many literatures in this study are from West Java, Eastern regions of Indonesia and Sumatera. The findings may thus reflect more of these areas compared to other areas of Indonesia. The third, some strategies that are provided in the findings may not directly relate to the context of maternal health, but the quality of care in general which can be applied to maternal health care.

Chapter VI: Conclusion and Recommendation

6.1. Conclusion

The evidence indicates that the quality of maternal health care in Indonesia is poor. The lack of competence, lack of compliance and lack of supply of drugs and equipment are the main factors influencing inadequate service delivery, particularly in clinical practices. Those factors are considered due to inadequate supervision and monitoring. On the other hand, the satisfaction of clients is mostly determined by the lack of responsiveness among health providers who do not combine the skill competence with the interpersonal and cultural competence. Lack of community participation influences health seeking behaviour and the absence of particular service provision such as health promotion due to overload tasks of village midwives.

Several effective interventions are identified to address those gaps in quality of maternal health care in Indonesia. Providing training of cultural competence education could improve the responsiveness of midwives in service delivery. Conducting group prenatal care could improve the satisfaction of clients and the continuum of care. Implementing education, outreach visit and maternal health audit and feedback as part of supervision and monitoring could improve the compliance and competence of midwives. Optimizing the role of lay health workers through task shifting could improve health seeking behaviour. Ensuring adequate supply of drugs and equipment could address the lack of resources in midwifery clinic.

6.2. Recommendations

6.2.1. Policy Level

1. Use quality assurance as a mainstream planning at all levels of health care. Well preparation should be done by the Ministry of Health of Indonesia by collaboration with other sectors, such as Ministry of Education, Ministry of Infrastructure, midwifery council and all organizations.
2. Policy changes to expand services provided by village midwife. Ministry of Health should allow midwives to perform vacuum extraction to save mother during complication in delivery. The policy change is followed by adequate training and equipment supply.
3. Raising the issue of drugs and equipment supply at the national level to be involved in the national plan. The health district officers need to conduct an assessment of the lower level in order to identify more evidences related to gaps in supply and the factors that influence the gaps.

6.2.2. Intervention

4. To improve the competence of midwives, training is needed. It can be done by conducting various training strategies, such as educational outreach visit and interactive workshop. The competencies that are required are knowledge, skill, interpersonal and cultural competency.
5. Strengthen community participation activities through training capacity of lay health workers to conduct task shifting in maternal health services. Various training and interactive educational materials are needed to attract community to participate. Moreover, there is a need to find ways related to incentives for lay health workers.
6. Improve the structure of monitoring and supervision from higher level. Guideline and training in supervision and clear job description are required. By doing this, the absence and the compliance of midwife to follow the standard can be prevented. Furthermore, ministry of health need to collaborate with the midwifery council in developing the standard for supervision and monitoring.
7. Involve assessment of quality care in Indonesia Demographic and Health Survey every 5 years, which include not only the view of client and community, but also the view of health providers. It can be done by improving survey tools and capacity building for the data collectors.
8. Dissemination of all standards should be conducted by the human resources department from ministry of health in the health facilities to improve the use of the guidelines and the compliance among health care providers.

6.2.3. Research

9. Research in the community related to client perspectives and local practices should be continued in order to develop the material for training of cultural competence education.
10. Pilot study in order to ensure the sufficient number of facilitators to conduct educational outreach visits is needed. The study can be done through randomised controlled trials by involving lectures from health school to be part in the supervision and monitoring of maternal health care as a facilatator.

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Annex 1: Map of Indonesia

Figure 5: Map of Indonesia

(Source: Nations Online 2014)

Annex 2: The Evidence of the Quality of Maternal Health Care

No	Component	Evidence	Location	Author (year)
1.	Practice Categories			
	Education, information and health promotion,	Information regarding danger signs during pregnancy, birth preparedness, nutrition and breastfeeding were not provided	West Java	D'Ambruoso et al. (2009)
	Assessment, screening, care planning	Only 6% of midwives performed urine for protein test during a prenatal visit	West Sumatera	Agus & Horiuchi (2012)
		Seven minimum standards care was received by only 60% of pregnant women. This includes measurements of height, weight, blood pressure, weight of womb, tetanus toxin injection and taking iron tablets.	West Sumatera	Agus & Horiuchi (2012)
	Promotion of normal process & prevention of complication	Partograph was not filled regularly by the midwives. Midwives did not refer 35% of women who crossed the alert line.	Medan	Fahdhy & Chongsuvivatwong (2005)
		Midwives performed episiotomy without adequate indication	West Sumatera	Agus & Horiuchi (2012)
		Midwives pull out the baby with inappropriate force	West Java	D'Ambruoso et al. (2009)
		Midwives removed the placenta manually without clear indication and preparation	West Java	D'Ambruoso et al. (2009)
		Early initiation of breastfeeding (within one hour after birth) was experienced by 39% of infants.	Nisa Island	Inayati (2012)
	First line management of complication	Health staffs do not follow standard referral procedures for accompaniment, essential drugs, supplies, referral letters, vehicles, communication and monitoring.	West Java	D'Ambruoso, Byass & Qomariyah (2010)

2.	Organization of Care			
	Availability and Accessibility	Midwives frequently traveled out of village	West Java	Titaley et al. (2010)
		Motivation of midwives to stay in assigned villages is influenced by the availability of basic facilities such as clean water and electricity. It is also influenced by lack of education facility for their children and husband working elsewhere	SW Sumba	Nasir et al. (2014)
	Acceptability	People perceive the Village midwives as young and less experienced	West Java	D'Ambruoso et al. (2009).
	Policy	Policy restricts the midwives to use vacuum extraction	General	White, Patrice & Levin (2006)
	Adequate resources	MgSO4 was not available with 80% of midwives	General	World Bank (2010)
		10% of delivery facilities have steriliser and resuscitation equipment. 89% report of availability of delivery kit only 61% report of a midwife kit being available. 54% of private midwives having the Hepatitis B vaccine in stock.	West Nusa	GHWA (2013).
		Lack of emergency resuscitation drugs and equipments from the health centres	Serang	GHWA (2013).
	Supervision	Supervision and monitoring of midwives was inadequate	General	Shankar et al. (2008)
		Job description was unclear and inadequate supervision as a result of lack of skills for supervision	General	Hennessy, Hicks & Koesno (2006).
	Continuity	Inadequate follow up (ANC-Delivery-PNC-Family Planning)	General	World Bank (2010)
		The relationship between health provider and client determines the continuity of care. It is also	General	Alazri et al. (2007).

		determined by the availability, acceptance and accessibility of the provider		
3.	Value	Attitude of the health provider influences the satisfaction significantly and also the compliance of the advice provided to the clients	General	Kim, Kaplowitz & Johnston (2004)
		Some women report feeling safe with midwives conducting their delivery	West Java	Agus, Horiuchi & Porter (2012).
		Women report feeling of different treatment between poor and rich	West Java	Agus, Horiuchi & Porter (2012)
		Women report feeling being verbally abused during treatment	Yogyakarta	Widyawati et al. (2014)
4.	Philosophy	Midwives speed the labor by pulling out the baby	West Java	D'Ambruoso et al. (2009
		Dukun (TBA in Bahasa) are perceived to be more experienced, more kind, tolerant and patient	West Java	Agus, Horiuchi & Porter et al. (2012;
		Midwives immediately left the women after delivery, whereas the TBAs waited patiently accompanied the woman all along.	West Java	Titaley et al. (2010)
		Women report feeling more comfortable with TBAs, as TBAs provided massage and bath following delivery	West Java	Agus, Horiuchi & Porter (2012)
		Lack of flexibility among health care providers in provision of local practices like massage and hot bath. This influences perception of poor service quality	SW Sumba	Nasir et al. (2014)
5.	Care Provider	Refer to the findings of practices, value and philosophy component		

Annex 3: Interventions to improve the Quality of Maternal Health Care

No	Intervention	Key Findings	Type of Study	Author (year)
1	Maternal Health Audit and Feedback	Perinatal audit reduced the perinatal mortality by 30% (95% confidence interval, 21-35%)	Meta-analysis	Pattinson et al. (2009)
		Audit and feedback increase the compliance of health personals by 4.3% compared to control group	Systematic Review	Ivers et al. (2012)
		The effectiveness of audit and feedback is influenced by how the feedback is delivered and baseline performance	Systematic Review	Ivers et al. (2012)
		The feedback which is provided with written and frequent specific suggestion can improve the effectiveness of audit and feedback	Meta-analysis	Hysong 2009
2	Cultural Competence Education	Cultural competence education intervention improves health personals' knowledge, attitudes and skills	Systematic Review	Beach et al. (2005)
		Cultural competence education improve the satisfaction of client	Systematic Review	Beach et al. (2005)
		Cultural competence education intervention improve the client perception of health professionals	Systematic Review	Horvat et al. (2014)
		Cultural competence education intervention improve mutual understanding between health providers and clients	Systematic Review	Horvat et al. (2014)
3	Educational Outreach Visits (EOVs)	Educational outreach visits can improve the compliance of health workers by 5.6% compared to control group	Systematic Review	O'Brien et al. (2007)

		Educational outreach visits are identified more effective than audit and feedback intervention	Systematic Review	Althabe et al. (2008)
4	Optimizing the Role of Lay Health Workers (LHWs)	Lay health workers are recommended to promote uptake of maternal healthcare behaviour and services, administer misoprostol to prevent postpartum haemorrhage, as well as provide continuous support during labour with the presence of a skilled birth attendant	WHO Recommendations	WHO (2012)
		Lay health workers are also recommended to distribute oral supplement to pregnant women with targeted monitoring and evaluation	WHO Recommendations	WHO (2012)
		Involving lay health workers in health service delivery may not significantly improve the health outcome, such as low birth weight	Systematic Review	Lewin et al. (2012)
		Involving lay health workers in health service delivery results higher frequency of utilization coverage of health clinics and decrease stress level among late pregnant women	Systematic Review	Lewin et al. (2012)
		Law health workers intervention is effective to increase the initiation of breastfeeding and exclusive breastfeeding	Systematic Review	Britton et al. (2007)
		Task-shifting from midwife to the community health worker increase acceptability of emergency obstetric care	Systematic Review	(Byrne et al. 2014)
5	Group Prenatal Care	Group prenatal care improves the satisfaction among clients and the utilization coverage of health facilities	Randomised Controlled Trial	Jafari et al. (2010)
		Around seventy percent of women in group	Randomised	Jafari et al.

		prenatal care continue to do antenatal visit compared to only 37.3% among women in individual group	Controlled Trial	(2010)
		There is a negative association between group prenatal care and preterm birth (OR= 0.53; 95% confidence interval, 0.34–0.81)	Retrospective Cohort Study	Picklesimer et al. (2012).