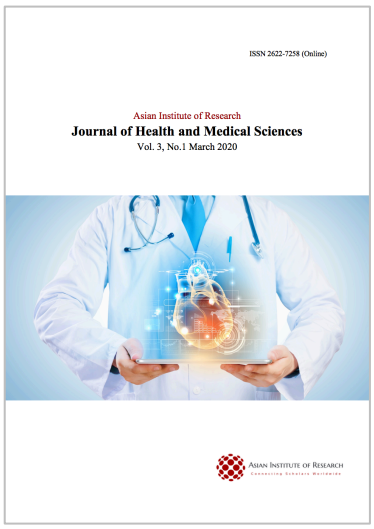

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Antenatal Care (ANC) Medical Record as an Effort to Reduce Maternal and Infant Mortality Rates

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Abstract
This article aimed to analyze the making of antenatal care (ANC) medical records in midwifery service as an effort to reduce the maternal and infant mortality rates. The importance of medical records in every given midwifery care, particularly the antenatal care, has been strengthened through the legislation. Practically speaking, the health practitioners, especially midwifes are aware of the significance of medical records in midwifery service, however, there are still some problems in their implementation since many incomplete, unclear, and unsustainable medical records were found. On the other hand, people insist on fast and accurate services, thus with poor medical records' documentation system, it results in counterproductive health services. Specifically, medical records are closely related to the effort of reducing maternal and infant mortality rates and it also works as valid written evidence to protect the midwifes if undesirable incidents may occur to the patients.

Keywords: Medical Record, Antenatal Care, Maternal Mortality Rate, Infant Mortality Rate

1. Introduction

The maternal mortality rate ranges from 305 per 100,000 according to the 2015 Intercensal Population Survey (SUPAS). The neonatal mortality rate (AKN) is 15 per 1,000 birth according to the 2017 SDKI (National Health Work Meeting, 2019). The maternal mortality rate (AKI) in Sidorajo is relatively high. Even at the provincial level, within the big five of all provinces in Indonesia, East Java ranks third. In 2017 maternal mortality rate is 82.62 per 100,000 births and in 2018 the number decrease to 62.23 per 100,000 births. Meanwhile, the infant mortality rate in Sidoarjo in 2017 is 6.27 per 1,000 births, in 2018 is 4.25 per 1,000 births (Sidoarjo Regency Health Office, 2018).

This documentation has an important role in relation to the maternal mortality rate since it establishes better midwifery services. The making of medical records is vital in midwifery services because a clear, complete, and continuous medical record can help the midwifes to detect early sign of danger and complication, so that the potential for late decision making, late to arrive at the reference place, and late in getting the treatment (3T) as the indirect causes of maternal death can be avoided. Overseas, some experts argue that there are four indirect factors (4T) that may influence maternal death (Widarta, Laksana, Sulistyono, & Purnomo, 2015). And direct

causes of maternal death include bleeding, eclampsia, abortion, and prolonged labor (National Health Work Meeting, 2019).

Some time ago a maternal death occurred due to the late decision making which resulted in the death of the patient while on the way to the reference hospital. After the Maternal Perinatal Audit (AMP) was held, it was found that the midwifes' documentation was incomplete and some even were not recorded. At every AMP, some incomplete and unsustainable medical records are always discovered (Sidoarjo Regency Health Office, 2019). The problems in the making of medical records in antenatal care services still have not yet been resolved (Midwifery Professional Organization, 2019). The problem is not only in the midwifery service in Public Health Centers, clinics, or independent practice midwifes, but also in hospitals, and the problem is the same which is the incompleteness of the medical records (Nuraini, 2015).

The compliance of the health staff in making the medical records, midwifes in particular, is still very low due to their bustles which lead some of them to make incomplete medical records, and in some cases there are a few missing points to be filled such as the signature, the date, the time, the diagnose, and even the management of the given midwifery service (Dewi & Karmelia, 2017). The referencing process and the late decision making can affect the maternal mortality rate, since a late early detection may cause several complications (Handriani & Melaniani, 2015). It is due to the records and documentation that are incomplete and below the midwifery service standard. Electronic Health Record (EHRs) is an innovation emerged in the 21st century. It works to determine the suitable services for the clients in health care services in developed countries, and many developing countries are now starting to use the EHRs because of the many benefits it offers (Adetoyi & Raji, 2020).

Midwifes in Indonesia is essentially needed to improve the welfare of the mother and the fetus. One of midwifes' responsibilities to the society is to provide good services as well as giving plenary services that are according to their competence and the requirements to enhance mothers' and children's health (The Decree of Minister of Health No. 369, 2017). Every health staff in giving health services must follow the professional standard, professional service standard, operational procedure, and professional ethics and according to the clients' health needs (Acts No. 36 the year 2014).

One of the effort to decrease the maternal and infant mortality rates is through early detection of the sign of danger and complication which may occur during the pregnancy. It can be done by making the medical record in every given midwifery service. The high numbers of maternal and infant mortality are caused by four too and three late, these cases occurred because of the lack of the empowerment for the health workers especially the midwifes in making the medical records for every given midwifery service (Chasanah, 2015). The MCH (Mothers' and Children's Health) or KIA (Kesehatan Ibu dan Anak) book is used as a communication tool between the midwifes and patients, with this book the midwifes may note important notes that can be read by other health workers or the patients, and their families (Sistiarini, Gamelia, & Sari, 2014). Early detection by 3T and 4T prevention by using Pudji Rochjati Scorecard (KSPR) in recording the medical records may help the midwifes in providing complete documentation (Widarta et al., 2015).

Based on the aforementioned problems, this research aims to investigate furthermore in the making of antenatal care medical records in midwifery services. This research focuses on the case of medical records making in Sidoarjo Regency. The theory of how the law works is used for this study. The purpose of this research is to observe the factors that influence the process of making medical records in antenatal care services in midwifery services in Sidoarjo. Thus, this research is closely related to the roles of midwifes, Midwifery Professional Organization (IBI) and Health Office. Moreover, this research emphasizes the effect of making medical records as an effort to reduce maternal and infant mortality rates.

2. Method

2.1 Type of Research

This is an empirical research (non-doctrinal) which is a type of research that analyzes and reviews how the law works within the society. How the law works in the society can be assessed from the people's obedience towards

the law itself, the role of legal institutions within the legal system, the implementation of the law, and the effect of the law towards a particular social problem and vice versa.

2.2 The Nature of Research

It is a qualitative research where in analyzing the data, the researchers intend to present the research's subjects and objects according to the outcomes of the research. This research is descriptive qualitative in nature which explains the obedience in making the antenatal care medical records as well as the hindrance in its process.

2.3 Location

This research was conducted in Sidoarjo Regency, involving Sidoarjo Regency Health Office, Sidoarjo Midwifery Professional Organization (IBI), Sidoarjo Public Health Centers, clinics and midwife independence practices in Sidoarjo.

2.4 Type and Source of Data

The primary data that were used to answer the research questions were obtained through interviews and observations. While the secondary data were the literature, law and regulation, books, documents, and other related published journal articles to support the primary data.

2.5 Technique of Data Collection

In empirical law research, the data are collected through interviews. The primary data were gathered through interviews with each coordinator midwife from Sidoarjo Public Health Centers, Candi Public Health Center, Buduran Public Health Center, some clinics and midwife independence practices, midwifery professional organization (IBI) administrators, and the head of the family health sub-division of Sidoarjo Health Office. The secondary data were attained from a literature study on primary legal materials from the law and regulation, secondary legal materials from textbooks and related journal articles, and tertiary legal materials from dictionaries that support the research.

2.6 Technique of Data Analysis

Techniques for analyzing qualitative data is a collection of words that are arranged in an expanded text. The data were analyzed using the interactive model proposed by Miles and Huberman, through data reduction, data display, and conclusion drawing (verification).

3. Findings

From the interviews regarding the making of antenatal care medical records as an attempt to reduce maternal and infant mortality rates with the midwifes in Public Health Centers, clinics, independent practice midwifes, Midwifery Professional Organization (IBI) and family health division of Sidoarjo Health Office which was conducted from September 23rd until October 10th, 2019, the data were gathered and categorized as follows:

3.1 Legal Substance

Most of the midwifes are not obedient yet in making notes and documentation particularly in ANC medical records, however, they have known the use of medical records as an effort to prevent 3T by early detection since the beginning of pregnancy. The large number of medical record formats that should be filled, caused them to use the patients' daily register as the documentation instead, since it is more simple which then they will copy the information from that documentation to mother or baby's cohort books. There is an uneven comprehension of the midwifes of the importance of the medical records, one of which is as early detection of the sign of danger and complication that may occur in the antennal care, as well as the fact that it can be used as a law patronage for themselves and the clients. It is all because of their lack of awareness in making the medical records that is according to the required standard as specified in the regulation as their obligation and responsibility in service. Moreover, the midwifes take medical record merely as an administration complement aspect. Coordinator midwife of Sidoarjo Public Health Center explained that before the Public Health Center's accreditation system was applied, the medical records have never received any attention, however, since the accreditation system was set, like it or not all the midwifes are required to pay more attention to the making of this matter and must provide the records that are according to the standard as it is one of the indicators for the Public Health Center's

accreditation. Midwife coordinator of Candi ad Buduran Public Health Center explained that electronic medical records have not optimally operated yet because there was no administrative staff to assist with the data entry.

3.2 Legal Structure

The monitoring activity to supervise the midwifery practices by IBI was not optimal yet, since it was carried out only once in a year due to the limited number of the supervising staff that is far less than the number of the midwifery practices. Moreover, the supervision activities that have been done focused more on the facilities of the midwifery practices and also for the documentation, IBI was focusing mainly on the patients' daily registers and the cohort of mothers and infants without any regards to the making of medical records. While the Health Office has paid more attention to maternal and children's health without evaluating the process of making the medical records in midwifery services. It is because the Health Office believed that the supervision of midwifery practices was handled by the local Public Health Centers where the practices are located. As well as the absence of an active role from the ethics committee to maintain the midwifery ethical codes from IBI in its practice on the field.

3.3 Legal Culture

Currently, people considers a good service is one that is fast where the inspection process does not take too much time. It was confirmed from the requests of the patients who want fast service in the ANC process. People's lack of understanding of the midwifery service process especially the antenatal care has impacts on the poor services.

4. Discussion

How the law works is inseparable from the existing rules and it also involves law enforcers which in this case are midwifes, IBI, and Health Office as the control holder. The attitudes and the values adopted within the society also play a role in how the law works, as the people are the main actor in the legal system, without the people as the implementer of the law, the law itself would not work. The antenatal care medical record analysis as an effort to reduce the maternal and infant mortality rates can be categorized as follows:

4.1 Legal Substance

The legal substance can be seen as norms, rules, and human's real behavior in its system (Rahardjo, 2009). The results of the research indicated that the antenatal care medical records' making cannot be said as it has been following the required standard since some incomplete medical records are still often found. It commonly happens in the documentation of the objective data, the analyses that only contain the diagnose without the information of the patients' problems, and also the management of the midwifery services that contains merely about the patients' vitamin therapy and counseling that are not in accordance with the patients' problems and needs. Medical records are also used as the quality benchmark of the given service (Sondakh, 2014), complete, clear, and continuous documentation shows good medical records so that the patients' medical history can be properly recorded (Handayani & Mulyati, 2017), thus if there is a sign of danger and complication on pregnant women, the potential of late decision making, late to arrive at the reference place, and late in getting the treatment (3T) (Widarta et al., 2015), in the end, the maternal and infant mortality can be prevented and the patients may receive their rights. The midwifery service delivery can be done through the family health program, one of which is Integrated Antenatal Care (ANC) that consists of ten investigation steps for the expectant mothers and the distribution of Mother and Child Health Book (KIA) at the first visit (K1) which can be used to record the examinations' results during the pregnancy until the child is five years old, this book also includes a Pudji Rochjati Scorecard to classify whether the expectant mothers are in a low risk, high risk or very high risk so that the early detection may be done to prevent the death. In other words, this KIA book is a method of recording and documenting for the expectant mothers which can be brought by the patients themselves or their families. KIA book also works as an education and information tool for the expectant mothers. However, its implementation has not yet been carried out as well as its functions and purposes (Health Minister Decree No. 284).

Midwife is a profession that is seen as a profession with knowledge, cleverness, devotion, and purity (physics and mind). Knowledge is the most important feature of this profession as knowledge guides someone to be

professional up to a certain competence level and norm for them to able to carry out their duties and dedication properly. Cleverness is an essential feature, in solving various kinds of health problems, cleverness, skills, and dexterity are required. Devotion is another important aspect since only with sincere devotion or sense of humanity they will be able to dedicate their life for such duty. And purity is the last feature because the patients and the society will put their trust into someone with a clean physical appearance and a clear mind (Jonsen, Siegler, & Winslade, 2006). It is important to provide training about the medical records to the midwifes in both conventional and electronic ways, not only about the recording system but also every aspect regarding the medical records that may affect the quality of the midwifery service in order to produce better medical records and minimize errors in medical records making in the future (Sungur, Sonğur, Çiçek, & Top, 2019).

Recording and documenting in midwifery service not only about medical records, but the documentation is also written in patients' daily register, mother and infant cohorts as well as KIA book that is used as the communication, information, and education tools between the midwifes and other health workers, patients, patients' families, and society. KIA book was provided by the Health Office and IBI to support the family health program. In its practice, midwifery care, not all the midwifes have accurately utilized this KIA book, however, with optimal use, this book can help the midwifes in doing early detection and complication, besides, the patients may use the information to educate themselves during the pregnancy up until the children reach the pre-school age. So that the sustainable services can be attained, while at the same time reducing the mortality rate and fulfilling all parties' rights and obligations (Sistiarini et al., 2014). The significance of medical records will give an impact on the quality of the health services, hospitals with electronic medical records (EMRs) have better service quality compared to those that use the conventional medical records in paper form (Ayaad et al., 2019). The use of electronic medical records allows an accurate service according to the patients' problems and needs so that a better decision can be made by the health staff (Chen et al., 2020). Electronic medical record (EMRs) is very important to provide a high-quality patient-centered-service, yet many health major students did not receive the curriculum experience in EMRs. Curriculum about EMRs can improve students' understanding of making patients' medical records (Gibson, Kwon, & Tatachar, 2019). Medical school graduates are required to be able to input the information from the patients and to give instruction and prescription in electronic medical records. A better understanding of the students regarding these electronic medical records during the clerkship may be used to determine how far do the students experienced the educational information they received during the training that can be adapted into the real practice (Hammoud, Foster, Cuddy, Swanson, & Wallach, 2020). The EMRs curriculum will provide the health major students with proper provisions when they enter the real practice in the future so that they can produce accurate medical records according to the standard and the rules.

Developed countries around the world are trying to spread information about the electronic medical records as a vital initiative in health policy. EMRs not only can reduce the problems related to paper medical records' management but can also improve the accuracy of the medical decisions of the doctors and improve the patients' safety (Tsai, Hung, Yu, Chen, & Yen, 2019), so that the high mortality rates caused by the incomplete and unsustainable medical records can be reduced. Nurses are the largest users of the EMRs at the hospitals, the EMRs are used to measure the nurses' work quality (Jedwab, Chalmers, Dobroff, & Redley, 2019). The making of medical records that are according to the standard can allow the appropriate treatment for the patients' problems and needs, conversely, the improper medical records would not solve the patients' problems and meet their needs as well.

Electronic medical records have the potential for future research from the patients' diagnoses to increase the knowledge in the health field (Zimmerman, Balling, Chelminski, & Dalrymple, 2019), thus, the making of complete and sustainable medical records will contribute to the improvement of the health research in the future. Nursing risk warnings on patients' EMR information are used to calculate the patients' probability of death. After the nursing risk warnings are used, the risk in infusion, surgical patients' transfer, and blood sample collection are significantly decreased from before the nursing risk warnings were used (Peng et al., 2019). A good and standardized medical record will prevent the nurses particularly midwifes from the nursing risk, therefore, the EMR is there to provide early detection for the sign of danger or complication that can cause maternal and infant mortality. A direct treatment can affect the patients' health state. In the last few years, the development of medical records has provided valuable sources to solve health problems. Nevertheless, most of the related studies are restricted in using the patients' information, identifying the various treatment records,

recognizing various types of treatment patterns, and interpreting the recommendation mechanism (Hoang & Ho, 2019).

Midwifery practice management must fulfill the obligation and responsibility, by performing the duty according to the standard, by doing so, the rights and the obligations of the patients and midwifes are in balance, moreover, the purpose of midwifery service which is to improve the mothers and infants' health can be achieved. The incidents of maternal or infant's death not always certainly are God's fate but also the midwifes' efforts in giving the proper nurtures that are in accordance with the norms and fulfill their obligations (Trisnadi, 2017). Professional services from the antenatal care stage until the postpartum will prevent the mortality of the mothers or infants (Walker, Arbour, & Wika, 2019). If there is a mistake made by a midwife during the midwifery service, then she may be asked to pay the responsibility based on the default or taken as an act against the law (Turingsih, 2012).

4.2 Legal Structure

The legal structure is a permanent outline of the legal system that keeps every process to be within its limits (Rahardjo, 2009). IBI here stands as the supervisor and the constructor of the midwifery practice management, particularly in the midwifery medical records' service. Health Office serves as the main supervisor and controller of the midwifery services and is responsible to the society for the midwifery services, make sure that every service is delivered according to the standard operating procedure (SOP) and the quality of health services. The roles of IBI in the midwifery services implementation are first, to guarantee and to ensure that every health staff is performing their task professionally based on the standard and profession ethics, SOP, and the laws and regulations. Second, to supervise and foster the members to be able to perform a proper, safe, effective, and sustainable midwifery service. Third, to develop knowledge in its field and to facilitate a sustainable education for its members. In optimizing its roles, IBI can work together with the Health Office, other professional organizations, and the law enforcer (Sidoarjo Regional Regulation No. 4, 2013). Interview results with IBI administrator reveal that one of the supervising activities that have been done is monitoring the midwifery practice once in a year, it is done with the intention to control the midwifery services given to the society.

Specifically, the midwifery services supervision emphasizes more on how the mothers' and children's health program run without paying attention to the supporting components of the KIA services one of which is the medical records in midwifery services. Family health division of the Health office realizes that the implementation of midwifery medical records is still far from good, it is seen from how the Maternal Perinatal Audit (AMP) is done, yet there are no follow-up actions of how the midwifes should make the medical records. The absence of the training program regarding the importance of midwifery medical records until now makes most of the midwifes take it merely as an administration document. The Health Office focuses more on the mothers' and children's health programs and all the aspects that support the programs, as a result, the medical records making is still a problem that has not yet been solved.

With the current information technology's development, electronic medical records have been established, in Sidoarjo, for instance, there is an application called *si cantik* (*Sidoarjo Cegah Kematian Ibu dan Anak* / Sidoarjo Prevent the Death of Mothers and Children). This application may ease the health staff especially the midwifes in providing the midwifery care, with this *si cantik* the midwifes can get the history of the patients' examinations even though the patients were previously getting treatment from other health facilities. However, this application has not been operated optimally due to various obstacles, such as the limited internet access, the unsupported facilities, and the absence of administration staff. Some government institutes such as Public Health Centers have applied the EMR in their services, however, in its practice, it still has not optimally operated yet. The application of *si cantik* which is collaborated with *si manies* (Sidoarjo Maternal Neonatal Emergency SMS Gateway) in Sidoarjo Regional Public Hospital (RSUD) is quite effective because this innovation provides a better and faster service for the patients (Anggraini, 2018). With the information and technology system that has developed rapidly and with this EMRs, the midwifery service providers and other related parties are allowed to offer recommendation and education to the midwifes regarding the EMRs to deliver a more efficient process of making the medical records as well as improving the midwifery service quality (Hoang & Ho, 2019). In this technology developing era, the EMR has a crucial role since it can help the patients in getting the sustainable midwifery treatments that may prevent the possibility of the medical records' loss or incidents where the records

are unreadable that will give an impact on the patients being treated late which may cause the death of the mothers and or the infants.

Electronic Health Record (EHRs) is an innovation that established in the 21st century. It is largely used in developed countries to determine the appropriate health service for the patients, while some developing countries such as sub-Saharan African have not yet used it despite the many benefits this innovation offers (Adetoyi & Raji, 2020). EMRs contain sensitive and detailed documents about an individual health state because it subjects confidentiality and limited access (Kartoun, 2019). The development of information and technology in electronic medical records surely has been operated in some hospitals and Public Health Centers in Indonesia, however, it does not come with the development of the human resources (SDM) so that its implementation in Sidoarjo in particular, is not optimal yet. Hopefully, the EMRs can give a good contribution to facilitate the health services, the midwifes, and the patients (He, Cai, Huang, Ma, & Zhou, 2019).

The role of health organizations is to improve the quality of the health services' data. There are five theoretical constructs that are used to comprehend the factors that influence the quality of the data which are, management endorsement, regulatory capability and process management, IT business, participation staff, and information system integrity. A survey on health arrangements in North Nevada discovers empirical results which show that there is a vital factor that can improve the completeness of the EMR's data which emphasizes that the human resources must be added (Liu, Zowghy, & Talaei-Khoei, 2020). The health organizations have not yet decided on the evidence-based method to increase the use of EMR, as well as the evaluation of the collaboration tasks that are needed to measure and to use the potential advantage of this health digital system (Austin, Barras, & Sullivan, 2020). IBI and Health Office's roles are very important in the process of medical records making. The lack of surveillance towards this process makes the midwifes pay very little attention to it. Moreover, their lack of understanding of all the aspects related to medical records may affect their midwifery services. Midwifes' quality control focuses on supporting and supervising in order to protect patients' and midwifes' rights (The Decree of Health Minister No. 10, 2018).

The effort to reduce the maternal and infant mortality rates also influenced by the government's effectivity, the quality of the regulations, the laws, the accountability, and the political stability, since this effort is a part of the government's goal of sustainable development (Maria, et al., 2019). Public health programs related to maternal and infant health have an impact on the decreasing number of maternal and infant mortality rates (Bernet, Gumus, & Vishwasrao, 2018). The effort of reducing the maternal and infant mortality rates requires cooperation between the midwifes, IBI, Health Office and local power holders because it requires sustainability from the laws that include five aspects mentioned above that will further affect the established community health programs and bring out the optimal results.

4.3 Legal Culture

Cultural factors are also related to the legal substance or legal rules and legal structure or law enforcer, because the law system cannot work alone, it requires a few associated components (Fuady, 2014). Legal culture (system) essentially includes the norms that underlie the laws. The conception of values that are considered to be good are adapted while those that are considered to be not good are avoided (Soekanto, 2012). The culture in the society sees a fast and the one that can alleviate or heal the patients' sickness as a good service. Without considering whether the services are done according to the required standard or not. Legal culture adapted within the community is currently giving negative impacts to the law enforcement, because in this case, there is no balance between the midwifes and the patients' rights and obligations. The midwifes have not yet carried out their responsibilities as specified in the regulations and the client as well have not yet fully received their rights. And even though the midwifes have not given the services that are in accordance with the standard requirements, they still get the law patronage, while on the other hand, the clients whose rights have not been fulfilled yet are always being aggrieved if negative things might happen in the future which one of them may lead to death.

The legal culture within the community makes the midwifes override the legal aspects in providing the midwifery services, and this case occurs in IBI and Health Office as well. People with varieties of culture adhere to their value system, they do not consider the legal protection between them and the midwifes, because they still believe in the old philosophy where they put all of their trust on the midwifes (Dartiwen & Nurhayati, 2019), and

even if a negative incident happens in the future, they consider it as God's will. It is evident that the communication between the midwifes and the patients is unidirectional, it only takes place to provide the information on the patients' current state. Active two-way communication rarely happens if there is no close relationship between the health staff and the patients or their families (Manias, Bucknall, Wickramasinghe, Schaffer, & Rosenfeld, 2020).

Nevertheless, the midwifes must understand that their existence is the spearhead of mothers' and children's health (Pramono & Sadewo, 2012), accordingly, they are obliged to perform their task to meet the professional standard, standard operational procedures, and midwifery ethical codes (Turingsih, 2012). Social and economic status can affect the infant mortality rate. People with low economic status contributes to the high number of birth and impede the mortality rate's reduction (Auger, Bilodeau-Bertrand, & Costopoulos, 2016). Indeed, the values of law on the community with average and low social and economic status influence the attitude and behavior towards the rules.

Dealing with birth case takes adequate experience, it needs a process to adapt and to learn how to overcome the unexpected problems, and learn how to be parents. The mothers focus on adapting the life after giving birth which comes naturally from their motherly instinct, while the fathers focus mainly on how to be a parent that can be seen from their low level of adaptability particularly on the case of premature birth due to their limited parental instinct (Provenzi et al., 2016). Patients' experience does contribute to their understanding towards the midwifery services, still, this experience does not affect their comprehension of the antenatal care process and the principles.

5. Conclusion

The antenatal care medical record in midwifery service that is out of the standard requirements is influenced by several factors that come from the midwifes themselves as the midwifery service practitioners, Midwifery Professional Organization (IBI), and the Ministry of Health as the controller of midwifery services and the society who influences the ANC process. The low rate of the medical record production indirectly becomes the cause of the high number of maternal and infant mortality rates, as one of its functions is to be used as early detection for the complications that may occur in antenatal care, thus it can prevent the late decision making, the late referring, and the late getting the treatment as an effort to reduce the maternal and infant mortality rates.

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