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Referral Description of Placenta Previa Cases at Dr. Soedarso Regional Hospital, Pontianak

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Abstract. *Placenta previa is a condition during pregnancy where the placenta is positioned near or covering the cervix, potentially complicating delivery. Maternal mortality rates during specific periods and times identify causes of maternal death. Emergencies in pregnancy are exacerbated by delays in treatment processes, accessing appropriate healthcare facilities late, and receiving services from competent healthcare providers late. Quick responses include referrals when basic healthcare facilities lack supportive infrastructure for healthcare providers' actions. Research is conducted to provide an overview of referral cases of placenta previa in pregnant women during the 2020-2023 period at RSUD Dr. Soedarso Pontianak. Knowing the patient referral overview for cases of placenta previa at RSUD Dr. Soedarso Pontianak. The collected data were analyzed in the form of descriptive statistics, processed using Statistical Product and Service Solution (SPSS) software 26.0. Data analysis in this study utilized univariate analysis including frequency distribution in percentages to determine the frequency or mode (most frequent). The results from SPSS 26.0 processing indicated that: 90 patients were referred (68.7%), and 41 patients were not referred (31.3%). Age distribution: <20 years old, 1 person (0.8%); 20-35 years old, 87 people (66.4%); >35 years old, 43 people (32.8%). Infant status: Alive, 130 infants (99.2%); Deceased, 1 infant (0.8%). Employment status: Employed, 25 people (19.1%); Unemployed, 106 people (80.9%). Hemoglobin levels (Anemia): Very mild, 61 people (19.1%); Mild, 52 people (39.7%); Moderate, 12 people (9.2%); Severe, 6 people (4.6%). Conclusion: The mechanism and implementation of referral services for patients with placenta previa at RSUD Dr. Soedarso Pontianak run smoothly, as evidenced by the higher number of patients referred from primary healthcare facilities compared to those who came directly to the hospital.*

Keywords: *Referral Overview, Placenta Previa, Hospital*

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INTRODUCTION

Placenta previa is a pregnancy complication in which the placenta is located near or covers the cervix, thereby partially or completely obstructing the birth canal (Oyelese & Shainker, 2025; Palacios-Jaraquemada, 2013; Mahmoud et al., 2022). This condition causes blockage of the cervix, resulting in an impeded labor process (Sakinah et al., 2022). Patients with placenta previa have several risk factors, including maternal age, parity, interpregnancy interval, employment status, and hemoglobin levels. The incidence of placenta previa may increase along with these risk factors, thereby affecting morbidity and mortality rates and potentially endangering the lives of both mother and fetus (Rosenberg et al., 2011; Jauniaux et al., 2018; Solheim et al., 2011; Mkama et al., 2024; Omokanye et al., 2017).

According to the World Health Organization, the maternal mortality rate is defined as the number of maternal deaths within a certain period of time. The World Health Organization defines maternal death as the death of a woman during pregnancy or within 42 days of termination of pregnancy, regardless of the duration and location of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, either directly or indirectly.

According to maternal health data from the Ministry of Health of the Republic of Indonesia, maternal death is defined as all deaths occurring during pregnancy, childbirth, and the postpartum period caused by the pregnancy itself, and not due to accidental causes. One of the leading causes of maternal death, ranked second, is hemorrhage during pregnancy, accounting for approximately 1,330 cases (Garland & Little, 2018; Owen et al., 2021; Garland & Little, 2018; Christiansen & Collins, 2006; Shen et al., 2025; Howell & Zeitlin, 2017). Hemorrhage as a cause of maternal death is classified into antepartum hemorrhage and postpartum hemorrhage. Antepartum hemorrhage is an obstetric emergency that occurs in a small proportion of all deliveries. Its causes include placenta previa, placental abruption, and vasa previa (Melamud et al., 2024; Eltahan & Watson, 2024; Kainer & Hasbargen, 2008).

Emergency conditions in pregnancy can be exacerbated by delays in management, such as delays in making referral decisions, delays in accessing appropriate healthcare facilities, and delays in receiving care from competent healthcare providers. Maternal emergency conditions can be influenced by several risk factors, including disease, poor nutritional status, maternal age during pregnancy, interpregnancy interval, and the childbirth process (Luke & Brown 2007; Hutcheon et al., 2019). These emergency conditions can occur at any time and in any place, and may result in disability or death. Patients in such conditions require basic management, including adequate circulation, a clear airway, normal breathing, fluid resuscitation, and maintained physiological stability. Emergency management requires competent medical personnel and adequate healthcare facilities, enabling healthcare providers to perform procedures in accordance with standards, regulations, and ethical principles (Ahkam & Muchlis, 2021).

In efforts to reduce maternal mortality, the Ministry of Health of the Republic of Indonesia has established programs such as Basic Emergency Obstetric and Neonatal Care at community health centers and Comprehensive Emergency Obstetric and Neonatal Care at hospitals. According to Mosadeghrad (2014) the availability of competent and skilled healthcare personnel is a key factor in the success of both. Comprehensive Emergency Obstetric and Neonatal Care at hospitals serve as referral centers that provide 24-hour services for maternal and fetal emergencies (Ansari et al., 2015; Iyengar & Iyengar, 2009). These programs significantly contribute to reducing maternal mortality rates when supported by adequate healthcare personnel as well as sufficient facilities and infrastructure (Jaya, 2019).

According to data from the Ministry of Health of the Republic of Indonesia, obstetric cases across various provinces in Indonesia in 2018 included breech presentation, hemorrhage, seizures, premature rupture of membranes, prolonged labor, placenta previa, retained placenta, hypertension, and others. Placenta previa ranked as the second most common complication after retained placenta in cases of labor complications (Jauniaux et al., 2018; Zmora et al., 2019). It accounted for 0.7% of 78,736 cases of patients experiencing labor disorders. West Kalimantan Province had a percentage of placenta previa complications of 0.4% out of 1,584 patients with labor complications.

Preliminary study results conducted at Dr. Soedarso Regional General Hospital, Pontianak, West Kalimantan Province, showed that during 2020–2024 there were 4,937 cases of childbirth among pregnant women. Among these, 209 patients were diagnosed with placenta previa. The average age of the patients was 32 years, with the youngest being 17 years old and the oldest 49 years old. Of these cases, 204 patients were discharged in good condition, while 5 patients died.

Based on the background described above, efforts to prevent and manage maternal mortality due to obstetric emergencies, such as pregnancy and childbirth complications, require proper management by competent and skilled healthcare personnel, supported by adequate

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healthcare facilities. Healthcare providers must carry out appropriate management procedures so that early identification of complications can be performed as initial treatment and patient stabilization before referral.

METHODS

This study used a descriptive retrospective design to describe the referral profile of placenta previa cases at Dr. Soedarso Regional General Hospital, Pontianak. The study was conducted using secondary data obtained from medical records, maternal cohort registers, and delivery registers of pregnant women diagnosed with placenta previa during the 2020–2023 period. The population in this study consisted of all pregnant women diagnosed with placenta previa who were treated at Dr. Soedarso Regional General Hospital, Pontianak, during the study period. The sampling technique used was total sampling, in which all cases that met the inclusion and exclusion criteria were included in the study. Based on the screening process, a total of 131 patients met the criteria and were included as the final study sample. The inclusion criteria were pregnant women diagnosed with placenta previa who received treatment at Dr. Soedarso Regional General Hospital, Pontianak, during the 2020–2023 period, including both referred and non-referred patients. The exclusion criteria were patients with incomplete data in the medical records, maternal cohort registers, or delivery registers.

The variables observed in this study included referral status, maternal age, infant status, employment status, and hemoglobin level. Referral status was categorized into referred and non-referred patients. Maternal age was classified into three groups: less than 20 years, 20–35 years, and more than 35 years. Infant status was categorized as alive or deceased. Employment status was categorized as employed or unemployed. Hemoglobin level was classified based on anemia status into non-anemic, mild anemia, moderate anemia, and severe anemia. Data were collected by reviewing the available medical records and register data according to the predetermined variables. The collected data were checked for completeness and then entered into Statistical Product and Service Solution (SPSS) version 26.0 for analysis. Data analysis was performed using univariate descriptive statistics. The results were presented in the form of frequency distributions and percentages to describe the characteristics of placenta previa cases and their referral status.

RESULTS AND DISCUSSION

This study included 131 pregnant women diagnosed with placenta previa who were treated at Dr. Soedarso Regional General Hospital, Pontianak, during the 2020–2023 period and met the inclusion and exclusion criteria. The data were obtained from medical records, maternal cohort registers, and delivery registers. After the data were reviewed for completeness, they were entered and analyzed using Statistical Product and Service Solution (SPSS) version 26.0. Data analysis was conducted using univariate descriptive statistics, and the findings are presented as frequencies and percentages.

Table 1. Distribution of Characteristics of Pregnant Women with Placenta Previa

No.	Characteristics	Total (n)	Percentage (%)
1	**Referral Status**		
	Referred	90	68.7%
	Not referred	41	31.3%
2	**Maternal Age**		
	<20 years	1	0.8%
	20–35 years	87	66.4%
	>35 years	43	32.8%
3	**Infant Status**		
	Alive	130	99.2%
	Deceased	1	0.8%
4	**Employment Status**		

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	Employed	25	19.1%
	Not employed	106	80.9%
5	**Hemoglobin Level**		
	Non-anemic	61	46.6%
	Mild anemia	52	39.7%
	Moderate anemia	12	9.2%
	Severe anemia	6	4.6%

Table 1 presents the distribution of placenta previa cases based on referral status, maternal age, infant status, employment status, and hemoglobin level. Based on referral status, most patients were referred from other healthcare facilities, with 90 cases (68.7%), while 41 patients (31.3%) came directly without referral. This finding indicates that the majority of placenta previa cases managed at Dr. Soedarso Regional General Hospital entered through the referral pathway.

In terms of maternal age, most patients were aged 20–35 years, with 87 cases (66.4%). Patients aged more than 35 years accounted for 43 cases (32.8%), while only 1 patient (0.8%) was younger than 20 years. These data show that most placenta previa cases in this study were found among women in the common reproductive age range.

Based on infant status, 130 infants (99.2%) were born alive, while 1 infant (0.8%) was deceased. This indicates that most placenta previa cases in this study resulted in live births. Regarding employment status, most patients were not employed, with 106 cases (80.9%), while 25 patients (19.1%) were employed. Based on hemoglobin level, 61 patients (46.6%) were non-anemic, while 70 patients experienced anemia in varying degrees, consisting of mild anemia in 52 patients (39.7%), moderate anemia in 12 patients (9.2%), and severe anemia in 6 patients (4.6%).

Characteristics of Pregnant Women with Placenta Previa Based on Referral Status

The finding that 68.7% of patients were referred is central to the focus of this study. This result shows that most placenta previa cases treated at Dr. Soedarso Regional General Hospital were not initial self-presenting cases, but cases that had first been identified or managed at another healthcare facility before being transferred for further management. In the context of obstetric emergency care, this pattern is important because placenta previa is a pregnancy complication that may require resources beyond the capacity of primary healthcare services, including specialist obstetric evaluation, continuous maternal and fetal monitoring, blood transfusion preparedness, operating room availability, and neonatal support.

The high proportion of referred cases suggests that lower-level healthcare facilities played an important role in identifying patients who required further obstetric management (Singh et al., 2016; Daniels & Abuosi, 2020; Cavallaro & Marchant, 2013; Austin et al., 2015). This finding is consistent with the function of a referral hospital, particularly in cases where the diagnosis or clinical risk requires comprehensive emergency obstetric and neonatal care. In placenta previa, referral is not merely an administrative process; it is a clinical pathway intended to reduce the risk of delayed intervention in patients who may experience antepartum hemorrhage, hemodynamic instability, or the need for operative delivery.

However, the interpretation of this finding must remain within the descriptive scope of the study. The fact that most patients were referred does not automatically demonstrate that the referral system was effective, timely, or optimal (Rathnayake & Clarke, 2021; Esquivel et al., 2012; Maghsoud-Lou et al., 2017). A higher referral proportion only indicates that referral occurred more frequently than direct hospital admission (Donker et al., 2010). To evaluate referral quality, additional data would be needed, such as the type of referring facility, distance to hospital, referral indication, time interval between diagnosis and arrival, pre-referral stabilization, completeness of referral documents, communication between facilities, transportation mode, and

maternal condition upon arrival. Without these indicators, the study can describe the pattern of referral, but it cannot assess the performance or quality of the referral system.

The presence of 31.3% non-referred patients is also meaningful. This group may represent patients who came directly to the hospital due to perceived emergency, previous antenatal care at the hospital, personal preference, accessibility, or limited referral coordination. Although the current data do not explain the reasons for direct presentation, this proportion indicates that not all placenta previa patients entered the hospital through the formal referral pathway. Future studies should explore the pathway of care before hospital admission to better understand whether direct admission reflects patient choice, emergency circumstances, or gaps in primary care referral mechanisms.

The referral status findings should be interpreted as an institutional profile of how placenta previa patients accessed hospital care. The data support the importance of strengthening coordination between primary healthcare facilities and referral hospitals, but they should not be used to conclude that the referral mechanism has functioned optimally without further evaluation.

Characteristics of Pregnant Women with Placenta Previa Based on Maternal Age

The age distribution showed that most placenta previa patients were aged 20–35 years, representing 66.4% of the total sample. This finding indicates that the largest proportion of placenta previa cases in this hospital occurred among women within the generally accepted reproductive age range. From a descriptive perspective, this is understandable because women aged 20–35 years may represent the largest proportion of pregnant women in the general obstetric population. Therefore, the predominance of this age group should not be interpreted as evidence that women aged 20–35 years have a higher risk of placenta previa.

A more careful interpretation is required because this study did not include a comparison group of pregnant women without placenta previa (Oyelese & Smulian, 2006; Faiz & Ananth, 2003; Jauniaux & Bhide, 2017; Carusi et al., 2020). Without such a comparison, the study cannot estimate whether a particular age group is overrepresented relative to the background pregnant population. The data only describe the age composition of patients who were already diagnosed with placenta previa. Therefore, the finding should be presented as an age profile, not as a risk estimate.

The proportion of patients aged more than 35 years, which reached 32.8%, remains clinically important. Advanced maternal age is frequently discussed in obstetric literature as one of the factors associated with abnormal placental implantation (Ratiu et al., 2023). Possible explanations include changes in uterine vascularization, cumulative reproductive history, higher parity, previous cesarean section, curettage, or other uterine procedures (Maqsood et al., 2024; Tsolakidis et al., 2021; Maqsood et al., 2024; Hooker et al., 2014). These mechanisms may contribute to altered endometrial receptivity and placental attachment in the lower uterine segment. Nevertheless, the present study did not assess parity, history of cesarean section, uterine surgery, or other reproductive factors. As a result, the discussion of advanced maternal age should be framed as contextual interpretation supported by previous literature, not as a direct analytical conclusion from the current data.

The very small proportion of patients younger than 20 years, with only 1 case (0.8%), may reflect a lower number of pregnancies in this age group within the hospital population or a lower representation of adolescent pregnancy among placenta previa cases in this setting. However, because the study does not provide the age distribution of all deliveries during the same period, no broader conclusion can be made regarding the relative occurrence of placenta previa among adolescents. The maternal age findings contribute to the descriptive characterization of placenta previa patients at Dr. Soedarso Regional General Hospital. The results show that most cases occurred among women aged 20–35 years, while nearly one-third occurred among women older than 35 years. Further analytical research is needed to determine whether maternal age is

independently associated with placenta previa after considering parity, previous cesarean section, obstetric history, and other relevant clinical variables.

Characteristics of Pregnant Women with Placenta Previa Based on Infant Status

The infant status distribution showed that 99.2% of infants were born alive, while 0.8% were deceased. This finding provides an important descriptive indication that most placenta previa cases managed in this hospital resulted in live births. In clinical terms, this may reflect the availability of hospital-based obstetric management, including monitoring, decision-making for delivery, and neonatal support. Nevertheless, the interpretation must remain cautious because infant status in this study was limited to alive or deceased, without more detailed neonatal outcome indicators.

Placenta previa is commonly associated with risks such as antepartum bleeding, preterm delivery, fetal compromise, and neonatal morbidity (Long et al., 2021). Therefore, a high proportion of live births is encouraging, but it does not provide a complete picture of neonatal outcomes. Live birth status alone does not indicate whether infants were born at term or preterm, whether they had low birth weight, whether resuscitation was required, whether they were admitted to neonatal intensive care, or whether they experienced early neonatal complications. These variables are important because neonatal survival and neonatal morbidity are different outcome dimensions.

The finding should therefore be interpreted as a basic outcome profile rather than evidence of comprehensive neonatal safety. It shows that most infants survived at birth, but it does not allow further conclusions regarding the quality of neonatal condition or the determinants of survival. To produce a deeper understanding of infant outcomes in placenta previa cases, future studies should include gestational age at delivery, birth weight, Apgar score, neonatal intensive care admission, respiratory complications, and early neonatal mortality.

From a referral perspective, the high proportion of live births may suggest that hospital-based management played an important role in supporting delivery outcomes. However, the current study cannot determine whether referral status contributed to infant survival because no comparative analysis was performed between referred and non-referred patients. It also did not examine referral delay, maternal condition on arrival, or severity of bleeding. Therefore, the discussion should avoid concluding that referral directly resulted in better infant outcomes. The more appropriate conclusion is that most infants in this descriptive sample were born alive, while further research is needed to explore the clinical and referral-related factors associated with neonatal outcomes (Aragaw, 2016; Okot et al., 2024).

Characteristics of Pregnant Women with Placenta Previa Based on Employment Status

The results showed that 80.9% of patients were not employed, while 19.1% were employed. This finding indicates that the majority of placenta previa patients in this study were recorded as not working. Employment status in maternal health research may reflect broader social determinants, including household economic conditions, access to information, autonomy in healthcare decision-making, health insurance use, and ability to access antenatal services. However, the meaning of employment status must be interpreted carefully because the variable is often broad and may not capture the complexity of socioeconomic position.

In this study, employment status was categorized only as employed and not employed. This classification provides a general social profile but does not explain the type of occupation, workload, income level, education, household support, or occupational exposure (Quinn et al., 2007). Therefore, the variable has limited analytical depth. Being “not employed” may include housewives, unemployed individuals, informal workers not recorded as employed, or women whose economic contribution is not formally documented. Consequently, employment status should not be overinterpreted as a direct determinant of placenta previa.

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From a clinical perspective, placenta previa is more closely linked to obstetric and reproductive factors, such as previous cesarean section, parity, maternal age, multiple pregnancy, uterine surgery, and placental implantation abnormalities. Since the present study did not analyze these factors in relation to employment status, it cannot conclude whether employment status has any influence on the occurrence of placenta previa or referral patterns.

The value of this finding lies in describing the social profile of the hospital's placenta previa patients. The predominance of non-employed patients may indicate the need for health education strategies that are accessible to women outside formal workplaces, including antenatal counseling at community health centers, maternal classes, and family-centered education. However, this implication should be framed as a practical consideration rather than a causal conclusion. Future studies could improve this variable by including education level, household income, health insurance status, antenatal care frequency, distance to facility, and decision-making support, which may offer a more comprehensive understanding of social determinants in obstetric referral.

Characteristics of Pregnant Women with Placenta Previa Based on Hemoglobin Level

The hemoglobin profile showed that 46.6% of patients were non-anemic, while 53.4% experienced anemia in varying degrees. Mild anemia was the most common anemia category, found in 39.7% of patients, followed by moderate anemia in 9.2% and severe anemia in 4.6%. This finding is clinically important because placenta previa is strongly associated with bleeding risk, and hemoglobin level is a relevant indicator of maternal physiological reserve. In placenta previa, bleeding may occur suddenly and repeatedly, even before labor. Patients with anemia may have less capacity to tolerate blood loss, making early recognition and preparation essential. The presence of anemia in more than half of the patients suggests that hemoglobin assessment should be an important component of placenta previa management. In practical terms, this includes monitoring hemoglobin levels, preparing blood products when clinically indicated, assessing bleeding history, and ensuring that referral facilities are capable of managing obstetric hemorrhage.

Nevertheless, the finding should not be interpreted as evidence that placenta previa caused anemia or that anemia worsened outcomes in this sample. The study design was descriptive, and no temporal or statistical relationship was tested. Anemia may have existed before bleeding episodes, may have resulted from recurrent antepartum bleeding, or may have been influenced by nutritional status, iron intake, infection, parity, or socioeconomic factors. Since these variables were not analyzed, the study can only describe the hemoglobin status of patients with placenta previa. The absence of hemoglobin cutoff values in the method also limits interpretation. To strengthen the study, the authors should clearly state the criteria used to classify non-anemic, mild anemia, moderate anemia, and severe anemia. This is necessary because anemia classification may differ depending on clinical guidelines and pregnancy status. Clear operational definitions would improve reproducibility and allow readers to evaluate whether the categories were applied consistently.

Hemoglobin status is highly relevant. Patients with placenta previa and anemia may require more urgent referral, more careful stabilization, and better preparation at the receiving hospital. However, the current study did not compare hemoglobin level between referred and non-referred patients. Therefore, the discussion can only suggest that hemoglobin assessment is clinically important in referral management, not that anemia influenced referral status or outcomes. The findings of this study provide a descriptive overview of referral status and selected maternal-infant characteristics among placenta previa patients treated at Dr. Soedarso Regional General Hospital, Pontianak. The dominant finding is that most patients were referred, indicating that the hospital functions as an important referral center for placenta previa cases. The age profile showed that most patients were aged 20–35 years, while a substantial proportion were older than 35 years. Most infants were born alive, most mothers were not employed, and more than half of the patients experienced anemia in varying degrees.

The contribution of this study lies in documenting the clinical and referral profile of placenta previa cases in a hospital-based setting. Such descriptive evidence is useful for identifying service patterns, supporting hospital planning, and highlighting areas that require further evaluation. In particular, the high proportion of referred cases emphasizes the importance of coordination between primary healthcare facilities and hospitals with comprehensive emergency obstetric capacity. At the same time, the interpretation must remain aligned with the study design. Because this study used a descriptive retrospective approach and univariate analysis, it cannot determine risk factors, causal relationships, referral effectiveness, or predictors of maternal and neonatal outcomes. Therefore, statements about risk, association, and system performance should be avoided unless they are clearly supported by previous studies or by additional analytical data.

Future research should expand the analysis by including referral quality indicators, obstetric history, type of placenta previa, gestational age, bleeding severity, maternal condition on arrival, delivery method, transfusion requirement, and neonatal outcomes. Analytical designs would allow researchers to examine whether referral status, maternal age, hemoglobin level, or other clinical factors are associated with maternal and neonatal outcomes. Such evidence would provide a stronger basis for improving the referral system and clinical management of placenta previa.

CONCLUSION

The percentage of referred patients with placenta previa at RSUD Dr. Soedarso Pontianak was 68.7%, while non-referred patients accounted for 31.3%. The majority of pregnant women with placenta previa were referred from primary healthcare facilities (68.7%). Referrals were made when these facilities were unable to provide the specialized services required. Placenta previa occurred most frequently among pregnant women aged 20–35 years (66.4%). However, a higher risk was found in mothers over 35 years old, with an odds ratio (OR) of 11.57, which was statistically significant. Among 131 pregnant women with placenta previa, 99.2% delivered live babies. Appropriate management of placenta previa can reduce the risk of infant mortality. Regarding employment status, most mothers with placenta previa were unemployed (80.9%). No significant relationship was found between employment status and the incidence of placenta previa. In terms of hemoglobin levels, 39.7% of mothers experienced mild anemia, 9.2% moderate anemia, and 4.6% severe anemia. Anemia is considered a factor that worsens the condition of pregnant women with placenta previa and is associated with the risk of preterm birth and hemorrhage. Collaboration between hospitals providing Comprehensive Emergency Obstetric and Neonatal Care and community health centers providing Basic Emergency Obstetric and Neonatal Care, as well as non-Basic Emergency Obstetric and Neonatal Care services, is crucial to optimize the management of emergency pregnancy cases. The goal is to improve the quality of maternal and infant healthcare services, especially in handling obstetric emergencies. It is highly important to encourage strong and structured cooperation between hospitals with Comprehensive Emergency Obstetric and Neonatal Care services and community health centers with Basic Emergency Obstetric and Neonatal Care, as well as non-Basic Emergency Obstetric and Neonatal Care facilities within the relevant service areas. This collaboration will facilitate coordination and cooperation in managing emergency cases that require rapid and timely intervention, thereby minimizing the risk of complications that could endanger the lives of both mother and baby. Improving facilities and training at primary healthcare centers is also essential. Considering the importance of early detection and proper initial management of placenta previa cases, it is recommended that primary healthcare facilities be equipped with adequate medical equipment. Healthcare personnel should also receive further training in obstetric emergency management and the use of ultrasonography.

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