

# Description of High-Risk Pregnancy in North Aceh Regency

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**Keywords:** Description, High-Risk Pregnancy, 'Factor 4 too'.

**Abstract:** Introduction: Cases of maternal death in North Aceh Regency within a decade are reported to have had a fluctuating trend. Unplanned pregnancies, Suboptimal health status, and '4 too' pregnancies contribute to cases of maternal death every year. Descriptions of high-risk pregnancies can provide direction for future problem-solving interventions based on existing facts. The aim of this study is to describe high-risk pregnancies in North Aceh Regency by utilizing maternal cohort data. Method: This is a descriptive study that examines cohort data of mothers who were observed from pregnancy to delivery in 2019 to 2022, a total of 540 high-risk pregnant women were obtained at the Samudera Health Center, North Aceh Regency. Results: This study found that from 'too 4 factors', the too old and too young age factors showed a decrease. Multiparity and closely spaced births have not shown a downward trend. Previous history of caesarean section which in 2019 accounted for 15.9% increased to 28.1% in 2021. Conclusion: The risk decreases in pregnancies that are too old and too young, but multiparity and birth spacing that are too short have not shown a decreasing trend. There is an increased risk of pregnancy due to repeated cesarean delivery. Description of pregnancy risks is an important study material in efforts to prevent and control pregnancy risks in a more planned manner based on data/facts.

## 1 INTRODUCTION

Aceh ranks 6th, contributing 50 percent of the Maternal Mortality Rate (AKI) in Indonesia. In 2018, it was reported that 141 maternal deaths per 100,000 live births, there was an increase in 2019, namely 157 per 100,000 live births and it continues to increase to 173 per 100,000 live births (Kesehatan, 2021). North Aceh Regency is one of the contributors to maternal mortality cases in Aceh Province, so the success of health service efforts in North Aceh will provide leverage to reduce AKI in Aceh Province.

Based on a decade of observation data, from 2013 to 2022, there is a trend of decreasing AKI, however, the fluctuating trend is still clearly visible (Maidar, 2023; Maidar 2022). The main causes are still dominated by bleeding and hypertension during pregnancy and also related to the mother's health status, pregnancy planning, and the condition of '4 too' pregnancies.

The maternal perinatal audit in mid-2019 examined the root of the problem related to various causes and risk factors for maternal deaths in North Aceh Regency, one of the sub-districts that was the focus of attention was Samudera Sub-district which

reported 4 cases of maternal deaths at the beginning of that year. From audits and case studies of the main causes of maternal death due to bleeding and hypertension during pregnancy, social determinants in the form of 'four too late' and 'four too much' still contribute greatly to each case.

Based on audit findings by analyzing causes and risk factors, it is very important to take specific promotive, preventive, and curative steps. The description of risk factors becomes evidence-based for evaluating the output and outcomes of activities that have been implemented and provides feedback for improving future activity planning. This research seeks to provide more specific recommendations for improving efforts to reduce maternal mortality therefore the plans prepared become more effective and efficient.

## 2 METODE

Descriptive research used cohort data of mothers from 2019 to 2022 at the Samudera Health Center, North Aceh Regency. A total of 2,662 pregnant women were identified as subjects, including 540

(20.28%) mothers with high-risk pregnancies. In 2019 there were 132 high-risk pregnant women, which increased to 135 in 2020 and 2021, and in 2022 there were increased to 138 high-risk pregnant women.

High-risk pregnancies were detected using the pregnant women’s register, maternal cohort, and screening sheets/forms at the Samudera Health Center, North Aceh Regency. This study focuses on observing high risk due to '4 too' and history of cesarean section delivery.

The description of high-risk pregnancies in this study identifies trends of increase, decrease, and fluctuation in the percentage of pregnancy risk factors, especially the '4 too' factor, history of cesarean section delivery, and other factors by maximizing the use of maternal cohort data that is available at the Community Health Center.

### 3 RESULT AND DISCUSSION

Samudera Health Center is one of 32 health centers in North Aceh Regency. At the beginning of 2019, there were 4 cases of maternal death related to bleeding, pre-eclampsia, and a history of anemia. The increase in death cases in 2019 had an impact on the high number of maternal deaths in North Aceh Regency. The audit results recommend carrying out high-risk screening of pregnant women, discussing each case periodically, and developing innovations in individual health efforts and public health efforts.

Based on data from the maternal cohort used in this study, it was found that the target for high-risk pregnancies was around 20 percent of the target for pregnant women, as shown in Table 1. Overall, from 2,662 pregnant women, the number of high-risk pregnancies was 540 cases (20.28%). High-risk pregnancy consists of maternal characteristics in the form of age, obstetric history in the form of parity and pregnancy complications and birth history, health status in the form of anemia, chronic lack of energy, and history of illnesses experienced by the mother.

Table 1: Numbers of Pregnant Women and the High-Risk Pregnancies.

Year	Pregnant mother	High Risk (n)	%
2019	660	132	20,00
2020	665	135	20,30
2021	667	135	20,24
2022	670	138	20,60
Total	2.662	540	20,31 (mean)

Source: 2019-2022 mothers' cohort

This research found that several risk factors have decreased, therefore, it can be said that the efforts and innovations that have been developed by the Samudera Community Health Center are quite successful. From the factor '4 too' a clear decreasing trend can be seen in pregnancies aged over 35 years and aged less than 20 years. Multiparity factors and short pregnancy spacing have not shown a decreasing trend. These results can be concluded that high-risk pregnancies from the '4 too' factors in the form of multiparity and less than optimal pregnancy spacing still need to be a concern for the focus of intervention, as shown in Table 2.

Table 2: Description of High-Risk Pregnancy Trends Factors '4 too'.

Year	>35	<20	Multiparity	Birth spacing
2019	35,6	7,6	17,4	13,6
2020	25,9	5,9	20,7	13,3
2021	24,4	5,2	16,3	14,8
2022	25,4	3,6	18,1	13,0
Trend	Decreased	Decreased	Fluctuation	Fluctuation

Table 2 shows that there is a tendency for high-risk pregnancies to decrease due to being too old, the decrease ranges from 1.5 to 9.7 points, as well as pregnancies at too young an age. The decreasing trend is clearly visible from the initial observation, 7.6 percent decreased to 3.6 percent. Meanwhile, multiparity was still very fluctuating during the 4 years of observation, too short a distance between pregnancies still occurred in 13-14 percent of high-risk pregnancies.

Table 3: Description of High-Risk Pregnancy Trend History of Cesarean Section.

Tahun	Riwayat SC	Faktor lain
2019	15,9	9,9
2020	26,7	7,5
2021	28,1	35,6
2022	25,4	18,1
Trend	Increased	Fluctuation

Source: 2019-2022 mothers' cohort

Table 3 shows the tendency for an increase in high-risk pregnancies due to a history of cesarean section delivery and the percentage is above 25 percent. The increasing trend should be a cause for concern, especially when linked to the World Health Organization (WHO) determination that the average cesarean section ranges from 5 to 15 percent per 1000 live births in each country. Regarding this, the results of this research still need to be explored in more depth

to obtain information on indications for cesarean section delivery in Samudera District. Other factors in the form of anemia, CED, and comorbidities are still often found in the screening of pregnant women.

Base on the results of observations and analysis, it can be concluded that the efforts and interventions carried out by the Samudera Community Health Center have shown success, but the development of innovation can be directed toward the use of Long-Term Contraceptive Methods (MKJP) to reduce high-risk pregnancies which are contributed due to multiparity and short pregnancy spacing. Furthermore, a history of cesarean section also requires a fairly long period of time to restore the mother's health before planning the next pregnancy.

Descriptions of high-risk pregnancies have shown decreasing, increasing, and fluctuating trends in each risk factor based on collected maternal cohort data. So, based on this description, specific efforts for risk control can be recommended. The use of maternal cohort data as analytical material is very necessary to obtain a description of the success of the efforts that have been made, therefore several risk factors that have not been successful can be more specifically controlled.

Several studies that utilize medical record data have been published and have given rise to specific recommendations, including Li, et.al (2022) who analyzed information routinely collected in Electronic Medical Records (EMR) to identify the risk of preeclampsia in three main pregnancy time periods, namely ante, intra, and postpartum. This research identifies risk factors for preeclampsia such as blood pressure, body weight, and maternal age, resulting in recommendations for early identification of the risk of preeclampsia, and therapeutic strategies for patients at risk.

Apart from Li, et.al, Escobar (2021) also uses routine data to predict various obstetric morbidities, so the resulting model is useful for predicting obstetric complications by developing appropriate clinical protocols for use in the intervention (Escobar, 2021). Furthermore, Klumpner, et. al (2021) predict obstetric and fetal complications using electronic health data (Klumpner, et.al, 2021).

Based on previous research and the results of this study, it can be concluded that the use of routine data can be a solution for describing various morbidities and risk factors. Some of the information obtained from routine data observations can provide recommendations for early detection, therapy development, and control of service systems. Multiparity, birth spacing too close, and the increase in cesarean section deliveries indicate that the

mother's parity status is very risky. This condition is closely related to cultural factors which indicate that the ideal number of children in a household is more than 4. It cannot be denied that the high level of multiparity is also related to the desire to have a child of a certain gender, therefore pregnancy is still attempted until it meets the gender of the child the couple hopes for.

Less than optimal pregnancy spacing is related to less effective contraceptive choices so some pregnancies can be categorized as unplanned pregnancies. The problem of unmet need for contraception also contributes. This condition is very worrying, especially if the previous delivery was by cesarean section. Morbidity and mortality will increase, especially in repeat cesarean sections.

This research encourages the use of surveillance data that has been collected in health facilities, despite the fact that the use of data that has been collected at a significant cost, including the human resources involved, has not been fully utilized optimally. This research is proof that maternal cohort data available at Community Health Centers can be used to evaluate programs and efforts that have been made, providing a strong, evidence-based foundation for future program improvements.

## 4 CONCLUSIONS

This research concludes that from the efforts made by the Samudera Health Center Team, high-risk pregnancies due to factors such as being too old and too young can be controlled. In contrast, multiparity and short-term pregnancies still show a fluctuating trend. This research found that cesarean section deliveries were above 25 percent and showed an increasing trend.

The description of high-risk pregnancies produced in this research can be used as material for evaluation and improvement of planning as well as the development of more specific innovations, one of which is the promotion of Long-Term Contraceptive Methods (MKJP) to reduce multiparity, less than optimal pregnancy spacing and recovery of pregnancies with a previous history of cesarean section.

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