

# The Relationship between Geography Access and Utilization of Basic Emergency Neonatal Obstetric Services (PONED) in Hamparan Perak Health Center, Deli Serdang Regency in 2018

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## Abstract

Every pregnancy and childbirth is a risky event, therefore every pregnant and childbirth woman must be as close as possible to basic emergency obstetric services. Health service units that are close and affordable to the community Community Health Centre are expected to be able to provide basic emergency neonatal obstetric services. Deli Serdang Regency has a high number of maternal mortality rates (AKI) and there are still cases of maternal deaths due to delays in handling due to geographical factors which is one of the causes of the low utilization of PONED (Pelayanan Obstetri Neonatal Emergency Dasar) Community Health Centre. The study aims to analyze the relationship between geographic access and the use of PONED in Hamparan Perak Health Center, Deli Serdang Regency. This type of research is an explanatory survey with a cross-sectional approach. The study was conducted in the working area of the Hamparan Perak Health Center with a sample of 100 pregnant, childbirth and postpartum women obtained using the proportional random sampling method. The independent variable in the study is geographic access. The dependent variable in research is the use of PONED. Data obtained using a questionnaire. Data analysis was performed using the chi-square test. The results showed a significant relationship between geographic access and the use of PONED (OR = 9,615; 95% CI = 2,974 to 31,088; p = 0.001). Pregnant, childbirth and childbirth mothers who have an assessment of good geographical access will use the PONED Community Health Centre.

## Keywords

access to geography, utilization, PONED



## I. Introduction

One of the indicators of public health is through the Maternal Mortality Rate (MMR). Maternal Mortality describes the number of mothers who died from a cause of death related to pregnancy disorders or their handling (excluding accidents or incidental cases) during pregnancy, childbirth and in the puerperium (42 days after giving birth) regardless of the length of pregnancy per 100,000 live births. This indicator is not only able to assess maternal health programs, moreover it is able to assess the degree of public health, because of its sensitivity to improving health services, both in terms of accessibility and quality. Maternal deaths often occur due to complications that occur around the time of delivery, so the intervention is emphasized in the safe delivery of assistance by health workers who are trained and carried out in health facilities. Through good and correct help, it is hoped that complications resulting from mishandling can be prevented, knowing quickly the complications that arise and by immediately providing help including referring when needed. (RI Ministry Of Public Health, 2014)

Decreasing Maternal Mortality Rate (MMR) is one of the global targets determined in the fifth Millennium Development Goals (MDG's) goal of 102 deaths per 100,000 live births, which are still not completely resolved until the end of 2015. In order to continue efforts and achievement of the Millennium Development Goals (MDG's), then followed by the Sustainable Development Goals (SDG's) which is a new development agreement until 2030, which will encourage changes that shift towards sustainable development based on human rights and equality to encourage national development, the economy and the environment. Decreasing Maternal Mortality Rate (MMR) is included in the third target of the Sustainable Development Goals (SDG's) namely healthy and prosperous life. It is expected that the Maternal Mortality Rate (MMR) will drop to 70 deaths per 100,000 live births until 2030 (Ministry of PPN / Bappenas, 2018).

According to the WHO report in 2014, the maternal mortality rate (MMR) in the world is 289,000. United States of America namely 9300 inhabitants, North Africa 179,000 inhabitants, and Southeast Asia 16,000 inhabitants. The maternal mortality rate in Southeast Asian countries, namely Indonesia 214 per 100,000 live births, Philippines 170 per 100,000 live births, Vietnam 160 per 100,000 live births, Thailand 44 per 100,000 live births, Brunei 60 per 100,000 live births, and Malaysia 39 per 100,000 live births live birth (WHO, 2014).

Based on the Indonesian Demographic Health Survey in 2007, the average maternal mortality rate (MMR) in Indonesia was recorded at 228 per 100,000 live births. Even based on the results of the Indonesian Health Demographic Survey (SDKI) in 2012 the average maternal mortality rate jumped to 359 per 100,000 live births (Kemenkes RI, 2014). However, in 2015 the maternal mortality rate in Indonesia again showed a decrease to 305 maternal deaths per 100,000 live births based on the 2015 Inter-Census Population Survey (SUPAS) (Ministry of Health Republic of Indonesia, 2017).

The still high maternal mortality rate (MMR) is also influenced and driven by various factors that underlie the emergence of maternal and neonatal risks, namely disease factors, nutritional problems of eligible woman and factor 4 T (too young and too old to get pregnant and childbirth, too close the distance of pregnancy / childbirth and too much pregnancy and childbirth). The above conditions are further aggravated by the delay in handling cases of emergencies / maternal and neonatal complications due to conditions of 3 T (late), namely: 1) Being late in making a decision to refer, 2) Being late in accessing the right health care facilities, and 3) Being late obtain services from appropriate / competent health workers (Ministry Of Public Health RI, 2013). Seeing the problems that occur in an effort to accelerate the reduction in maternal mortality rate (MMR) and infant mortality rate (IMR), it is necessary to work harder and support the commitment of all stakeholders, both central and regional. One of the efforts that have been carried out to accelerate the reduction in maternal mortality rate (MMR) and infant mortality rate (IMR) through obstetric and neonatal emergency / complication handling at the basic service level is through efforts to implement Community Health Centre Capable of Services for Basic Emergency Neonatal Obstetric Services Ministry of Public Health RI, 2013). The Ministry of Health has made efforts to support the acceleration of MMR and IMR reduction through the handling of emergency obstetric and neonatal / complications at the basic service level with Basic Emergency Neonatal Obstetric Services (PONED) in Community Health Centres supported by the presence of hospitals with Comprehensive Emergency Neonatal Obstetric Services (PONEK) in a form of cooperation between PONED and PONEK Services in the context of improving or improving the quality of services implemented in an integrated and integrated (Collaborative Improvement) PONED-PONEK.

Basic emergency obstetric and neonatal services (PONED) are services to cope with obstetric and neonatal emergency cases. PONED Community Health Centre has the ability to provide direct services to pregnant women / women and childbirth women who come alone or referral to cadres / communities, midwives in villages and puskesmas. Emergency care targets are estimated at 28% of pregnant women, but life-threatening complications that often arise suddenly are not always predictable beforehand, so pregnant women should be as close as possible to PONED facilities. Various efforts carried out in the PONED include increasing the knowledge and skills of the team in organizing PONED, fulfilling health workers, fulfilling the availability of equipment, medicines and consumables, managing the organization and referral system. In order for Community Health Centre to be able to PONED as one of the nodes of the PONED implementation system can contribute to efforts to reduce MMR and IMR it needs to be implemented well in order to optimize its function (MOH RI, 2013).

Community Health Centre capable of PONED being the closest referral place from the village as a midwife coach and closer access to emergency services for pregnant and childbirth women because complications in pregnancy and childbirth cannot be suspected or foreseen. PONED must be able to become a Gatekeeper in providing first aid and is expected to be able to prevent and manage complications of pregnancy and childbirth so that it can reduce maternal mortality. The concept of primary health care as a Gatekeeper was developed by the Johns Hopkins University Primary Care Center, covering 4 main domains namely first contact care (continuity function), continuity care, coordination care and comprehensiveness care (comprehensiveness care) service). According to Perpres No. 12 of 2013 concerning JKN, the delivery of health services, both outpatient and inpatient services must be done in a tiered system through first level health services (primary), second level health services (secondary) and third level health services (tertiary). In this case the patient should be able to enter higher health services through recommendations from doctors in primary health care. If the Gatekeeper functions well, only patients who really need further treatment can be referred to the Hospital (FKTL). (BPJS, 2014).

In 2015, out of 570 Community Health Centre spread across districts / cities in North Sumatera Province, 160 puskesmas or 28% held PONED. These PONED Puskesmas in Deli Serdang District are 23 PONED Puskesmas out of 39 Puskesmas or (Public Health Office of North Sumatra Province, 2015).

Community Health Centre of Hamparan Perak is one of the PONED Able Health Centers in Deli Serdang Regency. The implementation of PONED services at Community Health Centre of Hamparan Perak has not been carried out well, this can be seen from the low number of visits of pregnant women, childbirth and childbirth in utilizing PONED services. From the data of Community Health Centre of Hamparan Perak working area in 2017 the use of PONED is from 12% of the target pregnant women.

Based on this, it shows that the Gatekeeper function at the PONED puskesmas is not running optimally. This indicates that the PONED has not been fully utilized by the community. Considering that the PONED Puskesmas has a role in improving the quality of the community in the field of maternal health, the ease of accessing PONED locations is one of the important things that needs to be considered to improve maternal health services. This is consistent with what was stated by Prabawati (2005) which states that an adequate Puskesmas does not only pay attention to the number or capacity of services but also pay attention to the level of accessibility. The level of accessibility certainly influences the community's interest in utilizing the Puskesmas. The study aims to determine the relationship

of geographic access with the use of PONE D in Community Health Centre of Hamparan Perak, Deli Serdang Regency.

## II. Research Method

This type of research is quantitative with a cross sectional approach. The study was conducted in the working area of Community Health Centre of Hamparan Perak, Deli Serdang District with a sample of 100 mothers obtained using the proportional random sampling method. The independent variable in this study is geographic access. The dependent variable in the study was the use of PONE D puskesmas. Data obtained using a questionnaire. Data analysis was performed using the chi-square test.

## III. Discussion

This study explains the relationship between geography access and the use of PONE D puskesmas in Community Health Centre of Hamparan Perak, Deli Serdang Regency. The results of these studies can be seen in the following table:

**Table 1.** Distribution of Respondents Categories Based on Geographic Access in Community Health Centre of Hamparan Perak, Deli Serdang Regency

Geographical Access	Total	%
Good	46	46
Poorly	54	54
<b>Total</b>	<b>100</b>	<b>100</b>

Table 1 shows that the most respondents have poor geographic access as many as 74 respondents (74%) compared to respondents who have good geographical access as many as 26 respondents (26%).

**Table 2.** Distribution of Respondents Categories Based on Utilization of PONE D in Community Health Centre of Hamparan Perak, Deli Serdang Regency

Utilization	Total	%
Utilize	24	24
Not Utilize	76	76
<b>Total</b>	<b>100</b>	<b>100</b>

Table 2. shows that more respondents did not use PONE D by 76 respondents (76%) compared to respondents who PONE D were 24 respondents (24%).

**Table 3.** Relationship between Geographical Access and Utilization of PONE D in Community Health Centre of Hamparan Perak, Deli Serdang Regency

Variable	Utilization of PONE D				Total		p	OR
	Utilize		Not Utilize		N	%		
Geographical Access	n	%	n	%	N	%		
Good	20	43,47	26	56,52	46	100	0,001	9,615
Poorly	4	7,40	50	92,59	54	100		

Based on Table 3 it can be seen that from 46 respondents who have good Geographical Access, as many as 20 respondents (43.47%) use PONE D. Furthermore, out of 54



respondents who have poor Geographical Access, 50 respondents (92.59%) do not use Poned.

Based on the Chi square test results obtained  $p$  value = 0.001 this means the value of  $p < 0.05$  so that  $H_0$  is rejected. This means that there is a relationship between Geography Access and the use of Poned. With an OR value of 9,615 which means mothers who have Geographical Access to Puskesmas both have 9,615 times the opportunity to use Poned.

Community Health Centre capable of Poned being the closest referral place from the village as a midwife coach and closer access to emergency services for pregnant and childbirth women because complications in pregnancy and childbirth cannot be suspected or foreseen. Poned must be able to become a Gatekeeper in providing first aid and is expected to be able to prevent and manage complications of pregnancy and childbirth so that it can reduce maternal mortality.

However, these efforts have not been fully able to provide excellent health services. Even the Poned facilities provided cannot be felt by some groups of people. As a gatekeeper of health services for pregnant women, of course the Poned Puskesmas must have a good quality of service, especially the ease of being reached from its location aspect. In addition, it is often also found Poned Puskesmas which should be able to provide optimal services for the community, especially pregnant women, are actually unable to carry out their duties properly due to the vast service area. One of the responsibilities of all stakeholders is to ensure the availability of quality, equitable and affordable health services for every individual, family and the wider community. But in reality there are still many people who are not reached by obstetric health services (Poned).

Affordability generally occurs because of the distance to the Poned facility. based on this it can be interpreted that the location of Poned Puskesmas must have a high level of accessibility. The Puskesmas service area will be strongly influenced by the level of accessibility. The location of the Poned Community Health Center which is easy to reach in terms of transportation, certainly has its own attraction for the community, especially pregnant women to visit it. (Sujarwo et al, 2017).

Geographical access is the level of convenience that a person attains to health services. There is an accessibility relationship that is the location of supply and location of the client that can be measured by distance, travel time to reach the location of health services (Dever, 1984).

The results showed that most respondents had poor accessibility to the Poned Puskesmas with 54 respondents (54%) and respondents who had good accessibility to the Poned Puskesmas with 46 respondents (46%). These results indicate that the majority of pregnant women in the Overlord Silver Poned Puskesmas in 2018 have poor accessibility to the Poned Community Health Centre.

This is understandable because the working area of Community Health Centre of Hamparan Perak, Deli Serdang is not all easy to reach. The location of the health center which is less strategic also causes not all people in the Hamparan Perak area to easily access it. Especially people who live on the coast and border areas. The community prefers to utilize service facilities that are felt to be closer and easier to reach. This is also supported by the number of clinics and private midwife practices that are spread in several areas in the expanse of silver so that people find it easier to reach clinics or private midwives. In general, people who seek treatment at the health center are at the lower middle economic level who do not all have private vehicles. Public transportation only exists at certain times and road conditions are not entirely good. If the community relies on public transportation or walking, it is likely

that the travel time will be long and tiring. On the other hand, when using rental vehicle services will require quite expensive costs. This can explain why patients use private midwife clinics. Besides the officers can be contacted by telephone, the officers can also be called to the patient's home so that patients do not bother to get health services even though they have to pay for it.

Based on the results of the study note that out of 54 respondents with poor geographical access as many as 4 respondents (7.4%) made use of the Poned Puskesmas. From 46 respondents with good geographic access, 20 respondents (43.47%) made use of the Poned Puskesmas. This shows that the utilization of Poned Puskesmas is higher in pregnant women with good geographical access. Based on the results of statistical analysis shows the value of  $p = 0.001$  ( $p < 0.05$ ) which means that there is a significant relationship between geographical access and utilization of Poned Puskesmas by pregnant women in the working area of Community Health Centre of Hamparan Perak in 2018.

Geographical access measured in physical distance and / or travel time is significantly related to the use of Obstetric Services by pregnant women. The greater the distance and / or travel time to the Poned facility, the greater the barriers and the lower utilization (Tegegne et al, 2018). This is in line with research by Tanou and Kamiya (2010) which revealed that the greater the distance to the nearest health center, the less likely that a pregnant woman would receive appropriate maternal health services.

From the observation it can be seen that the availability of Poned facilities for maternity mothers who are equipped with trained personnel Poned, adequate equipment and medicines are the main prerequisite, but this does not guarantee the utilization of health services by maternity mothers because access to service places is still difficult to reach, especially from areas with minimal transportation and too broad service coverage. This is because the location of the Poned puskesmas is not strategic and requires quite a long time to reach the health care facilities for pregnant women.

The results of this study are in line with the results of research by Mardiyah, Herawati and Witcahyo (2013) which show that there is a significant relationship between accessibility and utilization of antenatal health services by pregnant women in the working area of Tempurejo Public Health Center in Jember Regency with a value of  $p = 0,0001$ .

Most of the results of the study indicate that geographical access has an effect on the use of Obstetric services. Physical access to Poned facilities is assessed in two ways namely in terms of geographical distance and travel time to health care facilities. When travel time drops to half an hour or less, pregnant women are more likely to give birth at a health facility. (Shimazaki, et al, 2013). Every one-hour increase in travel time to the nearest obstetric service facility is associated with a 20% reduction in the possibility of utilizing childbirth facilities (Masters, et al, 2013). In addition to travel time, an increase in the distance of walking one kilometer to an obstetric care facility is significantly associated with a decrease in utilization of obstetric service facilities. (Zegeye, et al., 2014., Jain, et al., 2015, Joharifard, et al., 2012, Kumar, et al., 2014., Hounton, et al., 2008).

#### **IV. Conclusion**

The results shows that there was a significant relationship between geographic access and utilization of the Poned Community Health Centre. Significant factors for the adequate utilization of Poned facilities are geographic access related to the problem of the distance of

PONED facilities to residents' houses, limited transportation facilities and geographic facilities that are still difficult to reach.

To overcome this geographical obstacle, it can be done by periodically visiting puskesmas to villages or traveling puskesmas with two-wheeled vehicles or ambulances owned by Community Health Centre. Managing an ambulance in an integrated manner is a must for developing the regional health system. The effort can be supported by ambulance elements available at each health facility, especially puskesmas with PONED. The presence of management who manages the cooperation of the elements of the delivery service provider that is managed as a regional referral unit becomes the main agenda. It is recommended to the district government to plan ahead when establishing a puskesmas as a PONED puskesmas so that the strategic location of the PONED clinic can be considered whether it can cover the community equally and also to determine other auxiliary PONED puskesmas so that access is no longer an obstacle for the community in utilizing PONED services.

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