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## **Implementation of Antenatal Care Standard in Coastal Area of Palu City**

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### **Abstract**

Standard antenatal checks (10T) can early detect pregnancy risk factors and complications, as well as reduce maternal mortality and childbirth due to complications that are not early detected. Several studies have shown that about 25-50% of women of childbearing age are caused by problems related to pregnancy and childbirth that should be detected at the time of antenatal examination. The purpose of this research is to obtain information about the implementation of antenatal care standards in Palu City and the constraints faced. The type of research is quantitative and qualitative presented descriptively. The number of samples is 86 expectant mother who come from 12 Kelurahan in the coastal area Palu City. As for in-depth interviews selected 12 respondents of expectant mother, six informants of Kelurahan midwives and Puskesmas midwives and 2 key informants from the Public Health Office Palu City. The results of the study obtained 3 antenatal care standards that have not been maximally implemented: laboratory examination (hemoglobin), counseling, and case management. Also compliance of low Fe tablet consumption. Conclusion: low implementation of ANC standard as well as compliance consumption of Fe tablet because 1) Health service aspect (Puskesmas and midwife): availability of facilities and infrastructure, midwife compliance, limited time of examination, and ANC evaluation pattern that focusing on quantity aspect (contact frequency), not on quality aspect (implementation of ANC standard); and 2) Expectant mother aspect: low understanding of expectant mother and low family support. Suggestion: for Public Health Office to improve ANC evaluation pattern which focus more on quality aspect.

**Keywords:** ANC standard; midwife; and expectant mother.

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## **1. Introduction**

Pregnancy is a process that begins with fertilization (conception), the formation of the baby in the womb, and ends by the birth of the baby [1,2]. When the diagnosis of pregnancy is enforced, then health workers usually advise expectant mother to check their pregnancies regularly. So the condition of mother and fetus can be monitored from the beginning [3]. Pregnant health services are performed at least 4 (four) times during the pregnancy period: 1 (one) time in the first trimester; 1 (one) time in the second trimester; and 2 (two) times in the third trimester [4,5]. Health services during pregnancy are conducted by health workers who have competence and authority, and in accordance with the standards of expectant mother services. The pregnancy period is a vulnerable period of health, the health of both expectant mother and fetus [6,7]. Therefore, early regular pregnancy examination (Antenatal Care) needs to be done to be able to detect early abnormalities / disorders / diseases suffered by expectant mother [2,7], Antenatal Care (ANC) is a health service provided by maternal health personnel during pregnancy and carried out in accordance with the service standards specified in the Midwifery Services Standard. The above mentioned health professionals are obstetrics and gynecologists, general practitioners, midwives and nurses [8,9]. The purpose of Antenatal Care implementation are [1,10]. To monitor the progress of pregnancy and to ensure maternal health and infant growth; b) Improve and maintain the physical, mental and social health of the mother; c) Early identify abnormalities, complications that may occur during pregnancy including general medical history, obstetrics, and surgery; d) Preparing for **month-long** pregnancy, giving birth safely to the mother and baby with minimal trauma; e) Preparing mother for normal childbirth and exclusive breastfeeding; and f) Preparing the role of mother and family in accepting the birth of the baby to grow optimally. In conducting antenatal examinations, health personnel must provide quality services according to standards (10 T) contain of [11,12] 1) Measurement of body height and weight; 2) Measurement of blood pressure; 3) Measurement of upper arm circumference; 4) Measurement of Fundus Uteri height; 5) Determination of fetal location (fetal presentation) and fetal heart rate calculation; 6) Determination of Tetanus Toxoid immunization status; 7) Administration of blood-boosting tablets (Fe tablets); 8) Laboratory examination (including blood type, hemoglobin, urine, etc.); 9) Counseling; and 10) case management. Antenatal checks carried out according to the standard (10T) can early detect pregnancy risk factors and complications, and reduce maternal mortality from complications of pregnancy and childbirth that are not early detected. Some studies indicate that approximately 25-50% of deaths of childbearing age women are caused by problems related to pregnancy and childbirth [13,14]. WHO estimates worldwide, annually more than 585.000 die during pregnancy or childbirth [15]. The direct cause of maternal death is bleeding, eclampsia, infection, old partus, abortion, and others. The indirect cause of maternal mortality due to the condition of society such as education, socio-economic and culture [16,17]. This condition should have been detected since the antenatal examination. There are 2 (two) indicators that can be used to measure the quality of maternal health services (expectant mother), including coverage Antenatal Care (K1 and K4) and delivery by skilled health personnel. In Palu City, implementation coverage of antenatal and maternity coverage by skilled health personnel has been running well. The data of Public Health Office Palu City in 2015 shows the coverage of the first visit (K1) of 104,5% and the last visit (K4) of 97,7%. While the coverage of delivery by health personnel is 97,5 % (2015). However, high coverage of antenatal care (ANC) and delivery by skilled health personnel was not in line with decrease in maternal mortality. Maternal mortality rate by 2015 (365/100.000 KH) threefold increase compared



interviews and documents observation. Processing and analysis of data using content analysis method.

### 3. Research Result

#### 3.1. Characteristics Respondents

Characteristics of respondents by age, education, occupation, pregnancy ( gravid), and age of the first ANC, as the table below:

**Table 3.1:** Respondents distribution based on expectant mother characteristic in Palu City2017

Characteristic	Amount	
	N	%
<b>Age</b>		
< 20 years	15	17,0
20 – 35	64	75,0
36 – 45	7	8,0
<b>Education</b>		
Elementary School	16	19,0
Junior High School	25	29,0
Senior High School	37	43,0
D3 (Diploma)	4	4,5
S1 (Degree)	4	4,5
<b>Occupation</b>		
Housewives	68	79,0
Private Sector	13	15,0
Civil Servants	5	6,0
<b>Gravid (Pregnancy)</b>		
1 <sup>st</sup> Pregnancy	29	34,0
2 <sup>nd</sup> Pregnancy	23	27,0
3 <sup>rd</sup> Pregnancy	16	19,0
4 <sup>th</sup> Pregnancy	13	15,0
5 <sup>th</sup> Pregnancy	3	3,0
6 <sup>th</sup> Pregnancy	1	1,0
7 <sup>th</sup> Pregnancy	1	1,0
<b>Amount</b>	86	

#### 3.2. Implementation of antenatal care standard

Implementation of antenatal care standard (10T) are as follow:

**Table 3.3:** Mean value of antenatal care standard (ANC) implementation on respondents in Palu City 2017

ANC Standard	Activity	Mean±
Standard 1	Measure body height and weight	0,99
Standard 2	Measure blood pressure	0,99
Standard 3	Measure upper arm circumference	0,99
Standard 4	Measure the uterine fundus height	0,94
Standard 5	Measure fetal heart rate and fetal presentation	0,84
Standard 6	Tetanus toxoid immunization (TT)	0,75
Standard 7	Administration of Fe tablets	0,90
Standard 8	Laboratory examination	0,49
Standard 9	Counseling	0,53
Standard 10	Case management	0,43

The above data shows that there are 3 (three) standards with low implementation: standard 8 (laboratory examination), standard 9 (counseling), dan standard 10 (case management). For tetanus toxoid immunization (TT), implementation < 0.90 because the pregnancy respondents are still in the 2<sup>nd</sup> trimester, so there are still many mothers who have not come for immunization TT.

We conducted in-depth interviews with several respondents and key informants in relation to 3 (three) standards whose implementation has not been maximized. We also conducted in-depth interviews related to low compliance of expectant mother in consuming Fe tablets. The result are as follows:

**a. Compliance in Consuming Fe Tablets**

Some respondents stated that they often forget or not discipline in consuming Fe tablets:

*“Yes, Given a blood-boosting tablet by the midwife. But I do not take regularly ..... usually forget...” (Ms. Y, 23 yrs, kelurahan Buluri)*

*“Every time come to control must be given blood-boosting tablet. Usually 1 strip....sometime 2 strips. I take it, but not every day.....forget....” (Ms. E, 27 yrs, kelurahan mamboro)*

The cause of indiscipline in consuming Fe tablets because respondents do not know and understand the benefits of consuming Fe tablets for the health of expectant mother and the fetus conceived

*“I do not know for sure the benefits. They said to add blood, to be healthy. But I already feel healthy .... fit ..... it's okay to take once in a while...” (Ms. N, 30 yrs, kelurahan Taipa)*

*“Lazy to take it...I take vegetables like Moringa leaves. They said that vegetables are good for blood boosting.”*  
(Ms. A, 19 yrs, kelurahan Ujuna)

This is justified by the head section KIA and head of Basic Health Services Public Health Office Palu City as the key informant, as follows:

*“Yes .... I still do not agree if they forget to be an excuse. In my view, because they do not understand the benefits of taking Fe tablets. They think these tablets are consumed when they are ill or lacking blood. If they feel healthy, they rarely take Fe tablets”* (Midwife T, 41 yrs, dinkes)

*“I think the main reason is because they do not understand the benefits of Fe tablets. If they know and understand .... I'm sure they'll be disciplined taking it. This is home work for us health workers. This means that the socialization or counseling of the midwife to the patient is still lacking...”* (Drg. L, 45 yrs, dinkes)

#### **b. Laboratory examination**

The reason for the low implementation of laboratory examination standard (especially examination of hemoglobin) because expectant mother are reluctant to come to the Puskesmas, less understanding of laboratory examination benefits, as well as limitations of hemoglobin examination equipment in health facilities such as posyandu and polindes.

*“I have been informed by the midwife, but I have not had time to go to the puskesmas. My husband did not have time to drive...”* (Ms. R, 31 yrs, kelurahan Baiya)

*“My blood pressure is good....Here's the record (While showing the KIA book). The midwife has also given blood-boosting drugs. So I guess it's healthy already. My husband says ... do not have to go to puskesmas to get blood examination...”* (Ms. N, 25 yrs, kelurahan Panau )

This is justified by key informants (midwife coordinator), as follows:

*“Indeed for the coverage of hemoglobin examination is still low. Especially expectant mother who come to checks their pregnancy in polindes, poskesdes, posyandu or pustu. There are no blood test equipment. So we point to the puskesmas. Well, they often do not come to puskesmas. But usually in the third quarter, when they come to the puskesmas, we immediately check their Hb...”* (Midwife I, 55 yrs, puskesmas Tipo)

*“If expectant mother come to puskesmas, surely we immediately check their blood. In fact now not just check the hemoglobin. Now it should be for HIV / AIDS, and others. It's just for expectant mother who check in posyandu, poskesdes, and polindes, rather difficult for us to force. Sometimes they are lazy to come to the puskesmas. Though the distance is not far away. Probably because they do not understand the importance of hemoglobin examination. Though we have to say it every time check their pregnancy”* (Midwife SW, 46 yrs, Puskesmas Tawaeli)

### **c. Counseling**

For the implementation of standard 9 (counseling), almost all midwives admit that it is difficult for them to do because of time constraints:

*“We are rather difficult to do counseling if in posyandu. Must serve the children, must arrange the cadres, must take care of the crying children. The time is also narrow. So it's a bit difficult....” (Midwife L, 51 yrs, Puskesmas Pantoloan)*

*“For the education we usually do in the class of expectant mother. If at the checkpoints such as posyandu or poskesdes rather difficult. The time is limited...” (Midwife N, 49 yrs, Puskesmas Talise)*

However, according to key informants from Public Health Office, this is not an excuse. The ultimate constraint (in addition to the narrow time and non-conducive atmosphere) is a matter of compliance to antenatal care standards. Many midwife (especially the new midwife) are not used to having effective communication (counseling) to expectant mother every time they checked-out. However, it is part of the midwife obligation, wherever they examine the pregnancy.

*“...Just not used to it. Not all midwife are able to communicate well to patients. We have to admit it...” (Midwife T, 41 yrs, Dinkes)*

*“In my opinion, this is just a matter of midwife compliance with antenatal care standards. They should be counseling consistently ... because that's the most important part of ANC checks. I see .... not all midwife .... they think just check the pregnancy then their task is done. It may be our responsibility later to remind the midwives...” (Drg. L, 45 yrs, Dinkes)*

### **d. Case management**

The low implementation of the standard 10 (case management) because there is no problem faced by expectant mother in the second quarter, when the research was held:

*“...Because there is no pregnancy problem faced. It's still the second quarter. So we have not written anything in the KIA book...” (Midwife N, 27 yrs, Puskesmas Kamonji)*

*“...Later we fill the book if there is a problem faced by the mother. Perhaps during visit there is no problem...” (Midwife Y, 31 years, Puskesmas Tipo)*

Some puskesmas midwives coordinator said that the kelurahan midwives sometimes did not ask about the problems faced by the mother properly. They (kelurahan midwife) only focus on examine pregnancy.

*“It could be because midwife does not ask properly about expectant mother's health problems. Although the problem of expectant mother often faced in early pregnancy. Especially in prim gravida mothers. They have not had pregnant experience yet” (midwife L, 51 yrs, Puskesmas pantoloan).*

This is also justified by the head of the KIA section Public Health Office Palu City:

*“...Our main problem is communication ... counseling. If that's not performed properly, we do not get data about maternal health issues...” (midwife T, 41 yrs, dinkes)*

#### **4. Discussion**

##### **4.1. Respondent Characteristic**

In this research there are some characteristic of respondents obtained, that are :

- a. Age, most respondents aged between 20-35 years (75.0%) which is the most ideal pregnancy age for a woman. However, there are still pregnant respondents at <20 years (17%) and age > 35 years (8%). Women who become pregnant under 20 years or over 35 years have high risks such as divorce, death in children, and spontaneous abortion. Pregnancy under the age of 20 years has a negative impact on maternal and neonatal health, as well as social and economic impacts. Pregnancy at a young age has a risk of preterm delivery, low birth weight (LBW), bleeding in childbirth, which may increase maternal and infant mortality<sup>19</sup>. IDHS 2012 found that neonatal, post-neonatal, infant, and under-five mortality rates in mothers were less than 20 years older are higher than in women ages 20 to 39 years<sup>16</sup>.
- b. Education, most of the respondents completed basic education (48.0%) and secondary education (43%). The level of education also determines a person in absorbing and understanding the knowledge they gain. The higher the level of education the better the knowledge<sup>20</sup>.
- c. Occupation, most of the respondents work as housewives (79.0%). The workload as a housewife varies greatly. According to the MOH the workload includes both physical and mental workloads. Due to heavy work load or too weak physical ability can cause workers to get health problems such as anemia, miscarriage in expectant mother or occupational diseases.
- d. Gravid (pregnancy), mostly the first pregnancy (34.0%) and second (27.0%). First expectant mothers (prim gravida) are usually filled with a sense of happiness and joy to be able to perform duties and obligations as a woman of the next generation. But the first pregnancy will usually also make a prospective mother experience anxiety and worries. The anxiety that expectant mother feel is about her pregnancy and delivery. Anxiety and worries in expectant mother if not handled seriously will bring impact and influence to physical and psychic, both at mother and fetus.

##### **4.2. ANC Standard Implementation**

Examination of pregnancy is an important way to monitor expectant mother's health and to detect risk factors that may be present in expectant mother. Antenatal services or often called pregnancy examination is a service provided by professionals such as obstetrics and gynecology specialist, general practitioner, and midwife [1,3]. Therefore, during pregnancy, expectant mother should be encouraged to visit midwife or physician as early as possible since she feels she is pregnant to get antenatal care. Pregnancy regular examination will reduce not only the death rate of expectant mother and postpartum mothers but also reduce the rate of infant death and disability in Indonesia<sup>4</sup>. The general purpose of pregnancy examination is to prepare as much as possible physical and



mental of mother during pregnancy, expecting a healthy mother and child. While the specific purpose of this medical examination, among others [11]: 1). Identify and handle the constraints that may be encountered in pregnancy. 2). Recognize and treat diseases that may be suffered as early as possible. 3). Reduces maternal and child morbidity and mortality. 4). Provide advice on daily living and family planning, pregnancy, childbirth, postpartum, and lactation. The care given to expectant mother on a regular basis is very important, because it is a joint effort between health workers and expectant mother, husbands, families and communities [21].

There are several factors that influence expectant mother so they do not check their pregnancy, such as [22,23]a. Access factor to service (distance, place, time) b. Social factors of expectant mother (education, knowledge, attitude) c. Family economic factors, maternal reproductive factors (parity, birth spacing) d. Expectant mother's health condition factor, treatment seeking factors.

Of the 10 standard antenatal care, there are some standards with low implementation, i.e.:

**a. Compliance of Table Fe Consumption**

An iron tablet or blood-boosting tablet administered to expectant mother as much as one tablet each day for 90 days during pregnancy. BBT contains 200 mg ferro sulfate equivalent to 60 milligrams of elemental iron and 0.25 mg of folic acid. The coverage of blood-boosting tablet (BBT) in Palu (2015) is quite high (Fe 1 = 100,8 % and Fe = 94,3%). But so far, Public Health Office has never conducted an evaluation on the compliance level of blood-boosting tablet (BBT) consumption in expectant mother. Research shows that maternal compliance rates in taking blood-boosting tablets (BBTs) are still low (mean = 0,77) compared with expectant mothers given Fe tablets by midwife (mean = 0,90). This means that there are still about 10% of expectant mother who have not been given Fe tablets by midwife, and from 90% of expectant mother given Fe tablets, there are still about 13% of expectant mother who do not comply to taking Fe tablets. Seamount literature from various countries states that maternal non-compliance is significant factor in the failure of the blood-boosting tablet (BBT) supplementation program. Research conducted by Kamidah in 2015 at the puskesmas Simo Boyolali found that factors related to the compliance of blood-boosting tablet consumption in expectant mother were knowledge, education, and family support [24]. A study conducted by Hatta helix in 2013 at the Puskesmas Maradekaya kota Makassar found that monitoring performed by health workers is still do not meet the standard and incomplete record and reporting. According to BKKBN in 2012; 21 there are several factors that influence maternity compliance in the consumption of blood-boosting tablet (BBT) there are: Knowledge of expectant mother, maternal motivation, family roles and behavior of health workers. While research conducted by Robiatul Adawiyani in 2013 on outpatient in RS Ramelan Surabaya found the influence of giving anemia booklet to the compliance of consumption of blood-boosting tablet of anemia patient. Although not in expectant mother, but this study provides information to us that the delivery of communication media (in booklet form, etc.) can help improve patient compliance in the consumption of blood-boosting tablets. Compliance is an important thing in developing habits that help in following the daily schedule. Taylor in 1991, defining compliance in treatment is the behavior that indicates how far individuals follow advice related to health or illness. Delameter in 2006 Defines compliance as an active, conscious and collaborative engagement effort of the patient toward behavior that supports healing. It becomes a habit in change. Compliance occurs when the rules

in taking prescribed medication and administration are followed correctly. Meanwhile, according to Kozier in 2010 compliance is individual behavior (eg taking medication, obeying diet, or changing lifestyle) as recommended by therapy and health. The results of the study found the importance of knowledge (predisposing factors) in determining compliance in the consumption of BBT, especially knowledge related to the benefits and possible impacts when expectant mother experience iron anemia. BBT consumption compliance increases when students provide an explanation of the benefits of BBT to expectant mother. The characteristic of respondents who are still at productive age (91% of age 17-35 years) and medium-educated (74% of junior and senior high school) are the enabling factors of behavior change (BBT consumption compliance). Another factor is the participation of families, both husbands and parents and others (health workers or companions) to provide support and always reminds expectant mother to consume BBT as a reinforcing factor. Concern in watching and monitoring iron tablet consumption every day improves compliance of expectant mother in consuming iron tablets.

#### **b. Laboratory examination**

Hemoglobin examination performed at least once in the first trimester and once in the third trimester. This examination is intended to determine whether the expectant mother is anemic or not during pregnancy because the condition of anemia can affect the process of growing fetus in the womb. The results of in-depth interviews with some expectant mother found that their reluctance to check blood (hemoglobin) because it must provide a special time to Puskesmas. There is a physical distance that makes expectant mother do not come to Puskesmas. However, this physical distance is meaningless when the expectant mother has an understanding of the importance of blood tests (hemoglobin) for her. Some respondents even declared themselves healthy, so no need to check blood (Hb) anymore. People's views about the criteria of a healthy or sick body, is not always objective. Even more subjective in determining the condition of one's body. Public perceptions about healthy / sick is very influenced by the factors of past experience, in addition to socio-cultural factors. Therefore, the role of health workers in providing education is very important. As key informants point out, that their disobedience to check blood (Hb) and consume BBT is due to lack of counseling from health workers (midwife). The research of Indah Oktaviani and his colleagues in Manado (2013) concluded that expectant mother's Hb levels were influenced by adherence to Fe, age, and parity so that expectant mother were advised to be more adherent in consuming Fe tablets, knowing good age for pregnancy, and the ideal birth rate to prevent anemia.

#### **c. Counseling**

According to Parsons in 1908, counseling is a process of providing assistance by an expert (called counselor, in this case midwife) to an individual experiencing a problem (called counselee, in this case expectant mother) which leads to the overwhelming problem faced by client (expectant mother). Counseling requires communication skills from the counselor (midwife), as well as the needs of the counselee (expectant mother). Research results show that low counseling rates are due to unavailability of midwife time. However, the interviews results with key informants (midwife coordinators), it is not an excuse. Because counseling is part of the standard antenatal care service. The real problem lies in the unequal ability of midwife communications, especially the younger midwife. Communication is a continuous reciprocal process involving two parties,

between the information provider (midwife) and the expectant mother. Some studies show that most health care providers are not good listeners. They actively direct the course of communication by providing various directions that support assumptions about the patient's illness, regardless of whether the direction is the patient's needs. Health workers rarely listen or give patients the opportunity to communicate their complaints and arguments. On the other hand, the patient himself is rarely daring / willing to express his opinion / feelings even though been asked by health workers (psychological distance).

#### **d. Case management**

Based on the results of antenatal and laboratory examinations, any abnormalities found in expectant mother should be handled in accordance with the standards and authority of health personnel. Cases that can not be handled are referred in accordance with the referral system.

### **5. Conclusion and Suggestion**

Conclusion in this research:

1. Implementation of antenatal care standard (10 T) in the coastal area of Palu City has not been maximized;
2. There are 3 (three) standard antenatal care that have not run maximally: standard 8 (laboratory examination), standard 9 (counseling), and standard 10 (case management).
3. Constraints in the implementation of antenatal care standards are:
  - a. From the aspect of health care (Puskesmas and Midwife) : Availability of facilities and infrastructure, midwife compliance, limited time of check, and ANC evaluation pattern focusing on quantity aspect (contact frequency), not on quality aspect (implementation of ANC standard).
  - b. From aspect of expectant mother: Low expectant mother understanding and low family support.

Suggestions in this research:

1. Public Health Office Palu City to improve the ANC evaluation pattern on quality aspects;
2. Engaging across sectors (such as Higher Education) to provide expectant mother assistance.

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