

## **EFFECT OF HOSPITAL ACREDITATION ON UNDERFIVE INFANT MORTALITY RATE IN INDONESIA**

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### **Abstract**

As a developing country Indonesia is one country that has a high mortality rate, especially infant mortality rate (IMR). Infant mortality is an important indicator to show the state of health status in a country. Infant mortality rate is a number indicating the number of deaths of 0 years of age from every 1000 live births in a given year or can be said to be the probability of a baby dies before reaching the age of one year. Data collection techniques in this study using secondary data sourced from BPS and kemenkes. Data analysis used is product moment correlation to know strength of relationship between two variables. From the calculation using the formula obtained results -0.450044898. According to the data that has been obtained by using the research methods listed above, it can be concluded that the relationship of IMR data 2017 and hospital accreditation has a strong correlation relationship. This can be seen from several indicators that affect hospital accreditation, among others, service convenience and quality of health services, facilities and infrastructure, and the availability of qualified doctors and nurses that can affect infant mortality in Indonesia.

Keyword: developing country, facilities and infrastructure, mortality rate

### **1. Introduction**

As a developing country Indonesia is one country that has a high mortality rate, especially infant mortality rate (IMR). Infant mortality is an important indicator to show the state of health status in a country. Infant mortality rate is a number indicating the number of deaths of 0 years of age from every 1000 live

births in a given year or can be said to be the probability of a baby dies before reaching the age of one year.

Tabel 1.1 Projected infant mortality rate(IMR) by province 2017

No	Provincial Name	IMR 2017
1	Aceh	27
2	Sumatera Utara	31
3	Sumatera Barat	30
4	Sumatera Selatan	28
5	Bengkulu	30
5	Lampung	25
6	Kep. Bangka Belitung	25
7	Kep. Riau	26
8	Banten	27
9	NTB	42
10	NTT	40
11	Kalimantan Barat	25
12	Kalimantan Tengah	25
13	Kalimantan Selatan	33
14	Sulawesi Tengah	34
15	Sulawesi Selatan	26
16	Gorontalo	36
17	Sulawesi Barat	49
18	Maluku	44
19	Maluku Utara	35
20	Papua Barat	44
21	Papua	45
Average		25

According to the above table, based on data from the SDKI to estimate the projected infant mortality rate in 2017, there are still many provinces in Indonesia that have high infant mortality rates. Of 33 provinces in Indonesia 21 provinces have infant mortality rates above 25 corresponding to the average infant mortality rate in Indonesia, indicating that public health status in Indonesia is still low. Indonesia's low health is also supported by the availability of unaccredited hospitals, the accreditation of this hospital determines the quality status of health services in accordance with established standards.

Tabel 1.2 Hospital Accreditation in Indonesia 2016

No.	Provincial Name	Persentase (%)
1.	Bengkulu	32.31
2.	Kepulauan Riau	32.26
3.	Kalimantan Tengah	31.91
4.	Maluku	29.63
5.	Jambi	26.92
6.	Gorontalo	26.19
7.	Kalimantan Selatan	25.71
8.	Kalimantan Barat	25.00
9.	Nusa Tenggara Barat	25.00
10.	Jawa Barat	24.20
11.	Sumatera Utara	21.74
12.	Sulawesi Tengah	19.35
13.	Aceh	18.18
14.	Riau	17.65
15.	Sumatera Barat	15.38
16.	Sulawesi Selatan	13.79
17.	Papua Barat	12.50
18.	Maluku Utara	10.53
19.	Sulawesi Utara	10.00

20.	Sulawesi Barat	8.33
21.	Papua	2.50
22.	Kalimantan Utara	0.00
Average		33.12

From the table above can be seen that there are still many hospitals in Indonesia that have not been accredited, only 33.12% of 2,500 hospitals that have been accredited. Of the 21 provinces whose hospitals have not been accredited, it shows that in the province the services in hospitals are still limited. So it can be known the degree of health in Indonesia that can affect baby's infant rate.

In this study our group will examine the mortality that occurred in Indonesia with the title "Influence Accreditation Hospital Against Infant Mortality Rate". The reason why our group took this theme, because the case of mortality in Indonesia is very high and also because mortality is one obstacle in human development. In this study we will also take some data relating to how influential the level of hospital accreditation in affecting infant mortality that occurred in Indonesia.

As an institution engaged in the field of health services, hospitals have an important role in efforts to improve the quality of life of the community accordance with Sari (2018), Lestari (2019), Nuriyanto (2019), Zahroh (2019). Hospitals that have good accreditation are expected to improve the quality of the Doctor's work, Nurse work, and good service in hospital management to serve the patient in order to avoid unexpected events in the hospital. Research related to hospital accreditation with mortality rate in Indonesia is very interesting to be studied more deeply. By holding this research we will know how far the influence of hospital accreditation to infant mortality rate. The purpose of this study is to analyze the importance of hospital accreditation to infant mortality rate.

Karakteristik RS	Kinerja KIA RS				P value
	Optimal		Kurang Optimal		
	n	%	n	%	
Status Akreditasi					
• Tidak terakreditasi	78	23,3	257	76,6	0,0001*
• Terakreditasi 5 jenis Pelayanan	88	42,1	121	57,9	
• Terakreditasi 12 Jenis Pelayanan	29	40,3	43	57,7	
• Terakreditasi 16 Jenis Pelayanan	35	51,5	33	48,5	
Pola Pengelolaan Keuangan RS					
• BLU Pusat	10	50,0	15	60,0	0,304
• BLU Daerah	89	36,8	153	63,2	
• Non BLU	130	31,5	285	68,5	
Kelas Rumah Sakit					
• Kelas A	6	37,5	10	62,5	0,001*
• Kelas B	59	40,7	86	59,3	
• Kelas C	120	37,2	203	62,8	
• Kelas D	46	22,9	155	77,1	
RS Wahana Pendidikan					
• Ya, RS Pendidikan	37	46,3	43	53,8	0,043*
• Ya, bukan RS Pendidikan	46	32,3	97	67,8	
• Tidak	148	32,1	313	67,9	

\*kandidat variabel masuk dalam analisis regresi logistic multivariat

Tabel 3. Kinerja Pelayanan KIA menurut Manajemen Pelayanan KIA Rumah Sakit Pemerintah Indonesia

Manajemen Pelayanan KIA	Kinerja KIA RS				P value
	Optimal		Kurang Optimal		
	n	%	n	%	
SPO Operasi Sesar					
• Ada	175	38,5	280	61,5	0,0091*
• Tidak Ada	55	31,3	121	68,8	
SPO pelayanan perinatal/neonatal					
• Ada	180	38,5	287	61,5	0,065
• Tidak Ada	50	30,5	114	69,5	
SPO penatalaksanaan GD (anak)					
• Ada	154	35,9	275	64,1	0,126
• Tidak Ada	76	30,2	176	69,8	
SPO Penerimaan dan penanganan pasien GD obstetrik dan neonatal					
• Ada	142	41,2	203	58,8	0,0001*
• Tidak Ada	85	25,8	244	74,2	
Prosedur pendelegasian wewenang					
• Ada	94	38,8	148	61,2	0,034*
• Tidak Ada	132	30,8	297	69,2	
Protokol pelaksanaan dan uraian tugas pelayanan PONEK					
• Ada	99	42,5	134	57,5	0,0001*
• Tidak Ada	127	28,9	312	71,1	

\*kandidat variabel masuk dalam analisis regresi logistic multivariat

**Tabel 4. Kinerja Pelayanan KIA menurut SDM Rumah Sakit Pemerintah Indonesia**

Sumber Daya Manusia RS	Kinerja KIA RS				P value
	Optimal		Kurang Optimal		
	n	%	n	%	
Dokter Penanggung Jawab UGD					
• Ada	229	34,9	428	65,1	0,005*
• Tidak Ada	2	8,0	23	92,0	
Dokter penanggung jawab pelayanan perinatal/ neonatal					
• Ada	204	37,5	340	62,5	0,129
• Tidak Ada	23	28,8	57	71,3	
SDM Team PONEK					
• Lengkap	54	52,9	48	47,1	0,0001*
• Tidak Lengkap	177	30,4	406	69,6	
Jumlah dr. SpA					
• Min-mak	0-25		0-29		0,157*
• Mean	2,03		1,7		
Jumlah dr. Sp. OG					
• Min-mak	0-59		0-20		0,104*
• Mean	2,7		2,07		
Jumlah dr. Anastesi					
• Min-mak	0-19		0-23		0,735
• Mean	1,08		0,96		
Jumlah dr di ruang perinatal/ neonatal					
• Min-mak	0-16		0-23		0,118*
• Mean	1,86		1,52		
Jumlah perawat di ruang perinatal/ neonatal					
• Min-mak	0-89		0-41		0,107*
• Mean	8,16		7,05		
Jumlah bidan di ruang perinatal/ neonatal					
• Min-mak	0-121		0-211		0,793
• Mean	9,0		8,71		

\*kandidat variabel masuk dalam analisis regresi logistic multivariat

(Simbolon, Pelayanan, Ibu, Simbolon, & Chalidyanto, 2013) Composite result obtained frequency distribution of performance of government hospital of Indonesia mostly (66,3%) with less optimal performance. The low performance of this government hospital will have an impact on the survival of the hospital's operations. Survive a hospital is very important in an effort to improve the health status of the community, for the future, it is expected that the hospital will not only implement curative and rehabilitative efforts but also preventive and promotive efforts. Survivenya a hospital becomes so important with the enactment of regional autonomy, where the hospital will change form into a bureau company which means having a profit motive. Changing the status of the hospital to perjan and is a Regional Owned Enterprise, demanding independence and high performance from the hospital. However, it is expected that the hospital's social function is still required. To be able to predict the survivenya of a hospital can be seen from the results of hospital performance so far.

The performance of KIA services in hospital MSS, in this study found that Indonesian government hospital the proportion of deaths due to bleeding, preeclampsia, sepsis and cesarean section is still high. The proportion of stillbirths is still found and the handling of LBW infants is still found not yet 100%. The proportion of maternal deaths of bleeding > 1% was most prevalent in Class D hospital (39.3%). The proportion of maternal deaths due to preeclampsia is > 10% most common in class A hospitals (75%). The proportion of maternal deaths due to sepsis > 0.2% was most prevalent in class D hospitals (45.8%). The proportion of maternal deaths due to secretary seksio > 20% at most in class B hospital (57.2%). The proportion of stillbirths > 4% was highest in grade D (7.5%) hospitals and the proportion of LBW treatment <100% was more prevalent in class C hospitals (20.7%). These findings indicate that in different classes of hospital SPM hospitals have not been achieved, this has important implications for policy makers to improve the performance of MCH services across all government hospitals.

The study found that the performance of KIA according to hospital accreditation status was mostly in non-accredited hospitals (76.6%), hospitals accredited 5 types of service (57.9%), hospitals accredited 12 types of services (57.7%) with less KIA optimal, but at the accredited hospitals 16 types of services most (51.5%) optimal KIA performance. The final model shows that unaccredited hospitals have a risk of 2.99 times to have less than optimal performance compared to hospitals that are accredited with 16 types of services. The final model also shows that hospital accreditation is an important factor determining the performance of KIA services of government hospitals in Indonesia.

## **1.1 Objectives**

The purpose of this study is to analyze the effect of hospital accreditation on infant mortality in Indonesia

## **1.2 Operational Definition**

The operational definition is the determination of the constructs or properties to be studied so as to be a measurable variable. The operational definition describes the particular way used to research and operate the context, making it possible for other researchers to replicate measurements in the same way or develop a better way of measuring. (Sugiono, 2014)

The variables found in this study consist of dependent variable (bound) and independent variable (free). The dependent variable is a variable that can be influenced by other variables or it can be interpreted that variable has dependency from other variables and marked with letter (Y) to facilitate the researcher salam mengidentifikasi. While the independent variable is a variable that is not daat influenced by other variable variables and marked with the letter (X) to facilitate researchers in identifying. The indicators used in these variables are:

1. Dependent variable

Infant mortality rate

2. Independent variable

Hospital accreditation

The definition of each variable, among others:

1. Infant mortality rate

It is the number of infant deaths (one year less than one year) in a given year per 1000 live births in the same year. The infant mortality rate reflects the magnitude of a health problem, the infant mortality rate is also used as a probability number to measure the risk of infant death at birth until the birthday of the first. Indicators that affect infant mortality include: (1) Education, (2) Economics, (3) health services Akreditasi rumah sakit

It is an acknowledgment of the hospitals provided by the accreditation independent agency established by the Minister, after it is judged that the hospital meets the applicable hospital service standards to improve the quality of hospital



services on an ongoing basis. Indicators that affect hospital accreditation include:  
(1) facilities and infrastructure, (2) number of doctors and nurses, (3) medical services

### **1.3 Mortality (Death)**

The demographic process has three components, namely fertility, mortality, and population mobilization affecting the population structure. High mortality in a region not only affects population growth, but also the health of the population in the area. That is integral to the words used to mark the life, which can occur at any time after the birth of life. In addition to mortality, known term morbidity which means as a disease or illness. In general, more than one time humans are stricken with illness and pain at a time called death (mortality). Illness or pain is a form of deviation from the normal state of physical and mental health (Utomo 1985: 129).

According to Mosley and Chen's (1984) theory, infant and child mortality can be explained using a socio-economic factor approach based on the analysis of the 2012 SDKI:

#### **1. Socioeconomic differences in infant and child mortality**

Based on the survey results, there is a large difference for infant and child mortality rates in urban and rural areas, where two-thirds of infant deaths occur in rural areas (33% versus 18%). Maternal education also influences, the survey shows that maternal education has an inverse relationship with the risk of child mortality. Higher education levels are generally associated with a lower risk of death. This is because education makes mothers get information about better pregnancy and child care. Infant mortality in uneducated mothers is 9 times greater than that of college mothers (86% versus 10%). The risk of child mortality is also related to the economic status of the household. In infant mortality, the highest quintile mortality rate is half the children in the lowest quintile (ie 18 percent to 34 percent). As for infant mortality rates, the mortality rate of children in the top quintile was one-third of children in the lowest quintile (18 percent versus 54 percent).

#### **2. Demographic Differences In Infant and Child Deaths**

Survey results show that the infant mortality rate of females is lower than for boys, except for child mortality. Data suggest that in infant boys there were 33 deaths compared to 24 female infants death per 1,000 live births. Maternal age at delivery also poses a risk with infant death. Children of very young and very old mothers during childbirth illustrate a high risk of death. In mothers of less than 20 years of age, infant mortality 54 out of 1,000 and over 40 years occurred in 46 out of 1,000 births. High child mortality rates in women who give birth at very young and old age may be related to biological factors that lead to complications during pregnancy and during labor. Long birth spacing (over 4 years) had a lower risk of death (21 per 1,000) than a short birth distance (2 years) of 68 per 1,000 live births. Unicef and WHO (2004) suggest that the baby's weight at birth is an important factor for the baby's survival. From the survey results, it can be said that babies who are born with very small body weight have a risk 5 times to experience death compared with babies born with average infant weight or large.

### 3. Fertility Behavior With Risks

High Many studies have found a strong association between child mortality and fertility patterns. In general, the chances of the child dies are higher in children born to mothers who are too old or young, born after short birth spacing, or being born to mothers with high parity. For this analysis mothers are grouped too young if they are under 18 and too old to be over 34 years of age at birth. The results showed, among children born during the five-year period before the survey, 36 percent were not in the high-risk category, another 25 percent were in one of the high risk categories that could be avoided, 18 percent were in a single high-risk category, and 7 percent are in the double high risk category. The remaining 39 percent are in the category of unavoidable risk, namely the first birth in women aged 18-34 years. So 61 percent of births in South Sumatra are in high risk category.

The concept of death needs to be known in order to get the right death data. With the advancement of medical science, it is sometimes difficult to give death and clinical living conditions. According to the concept, there are three vital states that are mutually exclusive, meaning that one situation is not possible along with one of the other circumstances. The three vital states are:

1. Born live (live birth)

Birth of life is, the event of the outcome of the conception of a complete mother's womb regardless of the duration of pregnancy and after the separation occurs, the conception of breath and other signs of life, such as heartbeat, umbilical cord, or muscle movements, without looking at the umbilical cord has been cut or not (Budi, 2007)

2. Death (death)

Death is the permanent loss of all signs of life, which can occur at any time after the birth of life (Budi, 2007)

3. Born Dead (fetal death)

Born to death is the disappearance of life signs from the conception before the conception is removed from the womb of his mother (Budi, 2007).

#### **1.4 Baby Mortality**

Death or mortality is one component of the demographic process in addition to fertility and mobility that affect the population structure. Population mortality rates in addition to affecting population growth are also one indicator of public health status. Infant mortality is death that occurs when after the baby is born until the baby is not exactly 1 year old. Causes of infant mortality there are two kinds of endogenous and exogenous.

Endogenous infant mortality or neonatal mortality is caused by factors brought by the child at birth, obtained from the parents at the time of conception (Sudariyanto, 2011). According Mochtar (1998), infant mortality caused by the

condition of her own baby that is LBW, premature baby, and congenital abnormalities. Opinion Saifudin (1992), infant mortality brought by baby since birth is asphyxia. Exogenous infant mortality or postneonatal mortality is caused by factors related to outside environmental influences (Sudariyanto, 2011). Infant mortality can also result from a lack of awareness of maternal health.

According to Vivian (2010), research shows that 50% of infant deaths occur in the neonatal period in the first month of life. According to Lissauer (2009), the neonatal mortality rate (NMR) is the number of deaths in the first 4 weeks (27 days of age) per 1000 live births. The postnatal mortality rate is the number of deaths from 28 days to 1 year per 1000 live births and infant mortality is the number of deaths in the first year of life per 1000 live births.

### **1.5 Infant Mortality Rate**

IMR (Infant Mortality Rate) is one indicator of health development success that has been declared in National Health System and even used as a central indicator of success of health development in Indonesia (Bachroen, 1988). From the side of the cause, infant mortality there are two kinds of endogenous and exogenous. Endogenous infant mortality or neonatal mortality is caused by factors brought by the child at birth, obtained from the parents at the time of conception (Sudariyanto, 2011). According Mochtar (1998), infant mortality caused by the condition of her own baby that is LBW, premature baby, and congenital abnormalities.

A healthy mother will give birth to a healthy baby as well. In addition to Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR) is also one of the main indicators in improving the quality or status of public health status in an area. According to Sukarni (1995: 9) the infant mortality rate is due to the baby is very rentandengan state of health or poor welfare so that from the death rate can be known the degree of health or welfare of the community or the population.

Infant mortality is not only the magnitude of health problems responsible for infant mortality, such as diarrhea, respiratory infections, malnutrition, specific infectious diseases and prenatal conditions, but also maternal health,

environmental health conditions and generally socioeconomic development levels. In both developed and developing countries there is an inverse relationship between infant health and the economic condition of the elderly, Mantra (2000).

### **1.6 Indicators Affecting Infant Death**

Illness or pain is a form of deviation from normal circumstances limited by physical and mental health (Utomo 1985: 129). In terms of health, the baby's obedience rate is still the first place in death. In improving the health quality of the population, especially the babies, the Government has implemented the policy by stipulating Act No. 10 of 1992 to reduce infant mortality rate which regulates the relationship of population development with the family welfare. This law provides an understanding that population development encompasses three aspects: population quantity, population quality, and population mobility.

Infant mortality can also result from a lack of awareness of maternal health. Many of the factors that influence it, among others, the mother rarely check the content of the midwife; pregnant at a young age; the distance is too narrow; pregnant in old age; lack of nutrient intake for mother and baby; the food consumed by the mother is not clean; inadequate sanitation and hygiene facilities, (Fauziyah, 2011). In addition, the condition of the mother during pregnancy is not good and healthy, can also result in the content, such as physical factors; psychological factors; environmental, social, and cultural factors (Sulistyawati, 2009).

### **1.7 Hospital Accreditation**

As an institution engaged in the field of health services, hospitals have an important role in efforts to improve the quality of life of the community. The number of hospitals is growing rapidly. Based on data from the Ministry of Health mentioned that in 2012 the number of hospitals in Indonesia as many as 2,083 units, while in 2014 the number of registered hospitals is 2520 units, which means within 2 years added about 21% (Kemenkes RI, 2016). This condition will cause

competition among hospitals to always try to improve the service to the public interest.

Increased public awareness of health, will lead to demands for improved health services. One effort to anticipate the situation by maintaining the quality of service, so it needs to be done continuous efforts in order to know the weaknesses and lack of health services. The increasing public demand for the quality of health services, then the service functions need to be improved to provide patient satisfaction. Quality of service is a form of consumer assessment (patient) on the level of service received with the level of service expected. Quality of health services provided point to the level of perfection of health services in meeting the needs and demands of each patient, the more perfect needs and demands of each patient, the better also the quality of health services (Azwar, 1996).

According to Sutoto et al. (2013) since the use of standard instrument of hospital accreditation of 2012 version, there is a significant change that is change of standard which originally focused on service provider, directed to be focusing on patient. Implementation of such standards should involve all officers in the accreditation process. The provision of accreditation as one of the obligations of the hospital must be done at least once every three years as stated in the law no. 44 of 2009 on hospital article 40 paragraph 1. The activity is done as an effort to improve the quality and safety of patients.

Almost every medical act in the hospital has risks that need to be anticipated as early as possible. So many people and professions are involved in the handling of patients. Failure to manage these conditions may increase the risk of unexpected events in the hospital. As mentioned in the National Guidebook of Patient Safety at the Hospital (2006), that based on the report of the Institute of Medicine (IOM), the United States of 2000 from various countries there are about 3 to 16% of unexpected events occurring in the care of inpatients in the hospital. The number of deaths due to unexpected events in hospitalized patients across the United States ranges from 44,000-98,000 per year.

In an effort to improve the quality of hospital services, national accreditation is made. Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 012 Year 2012 About Hospital Accreditation, Hospitals must follow national accreditation in an effort to improve competitiveness. Accreditation in question is:

- a. In an effort to improve the quality of hospital services, national accreditation is made. Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 012 Year 2012 About Hospital Accreditation, Hospitals must follow national accreditation in an effort to increase their earning power. Hospital Accreditation is the recognition of the hospital provided by the accreditation independent institution stipulated by the Minister, after it is considered that the hospital meets the applicable hospital service standards to improve the quality of hospital services on an ongoing basis.
- b. Hospital Service Standards are all applicable hospital service standards such as standard operating procedures, medical service standards, and nursing care standards.
- c. Accreditation aims to:
  - 1) improve the quality of hospital services;
  - 2) improve patient hospital safety;
  - 3) improve protection for patients, communities, human resources of hospitals and hospitals as institutions;
  - 4) support government programs in the health sector.

Improving the quality of hospital services in Indonesia needs to be continuously improved so that it can align with the quality of hospital services in other developed countries. In order to improve the quality of the service, the hospital must take care of accreditation. On the other hand the development of accreditation in the world runs very fast, which previously standardized more focused on service delivery has turned to focus on the patient.



## 2. Methods

Data collection techniques in this study using secondary data sourced from BPS and kemenkes.

### 2.1 Data analysis technique

Data analysis used is product moment correlation to know strength of relationship between two variables.

$$r = \frac{n\Sigma x - (\Sigma y)(\Sigma y)}{\sqrt{\{n\Sigma x^2 - \{n\Sigma y^2 - (\Sigma y)^2\}}}}$$

Information:

r : The coefficient of validity

n : Number of subjects

y : Value of comparison

$\Sigma x^2$  : The square of the total number of variables x

$\Sigma y^2$  : Kuadrat dari total jumlah variabel y  
The square of the total number of variables y

$\Sigma x$  : Hasil perkalian dari total jumlah variabel x dan variabel y  
The multiplication of the total number of variables x and y variables

Untuk membuat kesimpulan hubungan antara dua variabel di atas, perlu memenuhi criteria sebagai berikut, apabila To conclude the relationship between the two variables above, it is necessary to meet the following criteria, if:

- a) 0,00 – 0,199 the correlation relationship is very weak
- b) 0,20 – 0,399 the correlation relationship is weak
- c) 0,40 – 0,599 the correlation is moderate
- d) 0,60 – 0,799 strong correlation relationship
- e) 0,80 – 1,0 the correlation relationship is very strong
- f) Jika hasil (-) strong correlation relationship

## 3. Result and Discussion

### 3.1 Results

<b>Province</b>	<b>IMR 2017</b>	<b>RS Accreditation</b>
11 Aceh	27	18,18
12 Sumatera Utara	31	21,74
13 Sumatera Barat	30	15,38
14 Riau	22	17,65
15 Jambi	23	26,92
16 Sumatera Selatan	28	41,18
17 Bengkulu	30	32,31
18 Lampung	25	52,94
19 Kep. Bangka Belitung	25	35
21 Kepulauan Riau	26	32,26
31 DKI Jakarta	17	53,3
32 Jawa Barat	18	24,2
33 Jawa Tengah	22	33,71
34 DI Yogyakarta	12	34,4
35 Jawa Timur	23	45,95
36 Banten	27	47,09
51 Bali	21	69,09
52 NTB	42	25
53 NTT	40	38,64
61 Kalimantan Barat	25	25
62 Kalimantan Tengah	35	31,91
63 Kalimantan Selatan	33	25,71
64 Kalimantan Timur	14	35
71 Sulawesi Utara	22	10
72 Sulawesi Tengah	34	19,35
73 Sulawesi Selatan	26	13,79
74 Sulawesi Tenggara	24	37,65
75 Gorontalo	36	26,19
76 Sulawesi Barat	49	8,33
81 Maluku	44	29,63
82 Maluku Utara	35	29,63
91 Papua Barat	44	12,5
94 Papua	45	2,5
INDONESIA	25	33,12

From the calculation using the formula obtained results -0.450044898. According to the data that has been obtained by using the research methods listed

above, it can be concluded that the relationship of IMR data 2017 and hospital accreditation has a strong correlation relationship. This can be seen from several indicators that affect hospital accreditation, among others, service convenience and quality of health services, facilities and infrastructure, and the availability of qualified doctors and nurses that can affect infant mortality in Indonesia.

Convenience of service in hospital must fulfill requirement which become measure of satisfaction of health service user. A health service is considered qualified if the application of all health service requirements can satisfy the patient. If the accessibility of health services is difficult to terjangkau or poor hospital quality, the community, especially pregnant women and infants will be difficult to get health services with guaranteed quality. Such good postpartum delivery is very important, as partial maternal and neonatal deaths occur in the first two days and postpartum care is required to manage postpartum complications. According to Azwar (1996), in the size of the service included the value of patient satisfaction assessment on: a) availability of health services (available), b) Appropriate healthiness, c) acceptable), e) attainment of health services (accessible), f) accessibility of health services (affordable), g) efficiency of health services (efficient), h) quality of health services (quality). Measurement of the quality of health services can be measured from three variables, namely inputs (all resources needed to perform health services such as personnel, funds, medicine, facilities, equipment, materials, technology, organization, information, etc.), process (professional interaction between service providers with consumer / patient / community) and output / outcome (result of health service in the form of change happened to consumer / patient / society, including consumer satisfaction. Quality of health services is a description of the performance of a health service institution.

The provision of hospital facilities and infrastructure facilities is one of the efforts to improve the quality of public health, and it becomes the government's obligation to provide decent health care facilities for every citizen. Physical facility is one measure to assess the performance of the hospital as well as an important

factor affecting patient satisfaction. Service facilities and services for pregnant women who will give birth if not in accordance with the standard will mebahayakan the safety of mother and baby, especially the service facilities in hospitals that have not been accredited and hospitals located in remote areas. It also relates to the availability of doctors and nurses, the availability of qualified and qualified medical personnel is a requirement that must be met by the accreditation of the hospital in which it must meet the organization of the IGD, including trained duty physician besides the specialist (womb and child) to provide support specialist medical treatment for patients who need it. Specialist doctors on duty must be ready and willing to duty in accordance with their respective duties.

The benefit of this accreditation is that hospitals will listen more to complaints, criticisms and suggestions from patients and their families, no longer be the ones who are always right. The hospital will also be more respectful of the rights of the patient and involve the patient in the treatment process. In addition to beneficial for patients, accreditation is also beneficial to create a sense of security for health personnel because facilities and infrastructure available in hospitals already meet the standards so as not to endanger themselves in carrying out their duties. It is known that in Indonesia there are still many hospitals that have not been accredited in accordance with the standards set by the government, this is very influential to the baby mortality rate in Indonesia.

### **3.2 Discussion**

Many factors can be associated with infant and child mortality. In terms of the cause can be divided into two namely endogenous and exogenous accordance with Ifa (2019), Haryanti (2018), Pahlevy (2019), Umam (2019), Setyawan (2019), Kurnianto (2019). Endogenous factors are factors that children bring about from birth, inherited from their parents at the time of conception or acquired from their mother during pregnancy. While the exogenous factor is infant

mortality caused by factors related to the influence of the external environment. Infant mortality is not only due to endogenous and exogenous factors but, infant and child mortality can also be caused by health factors. One of the problems caused by health problems is diarrhea, respiratory infections, malnutrition, specific infectious diseases, maternal health and accreditation of a hospital also affect infant and child mortality.

The high mortality of children at age up to one year indicates that the still low health status of mothers and newborns. In addition, there is still low access and quality of maternal and child health services, especially during the delivery period and thereafter. Another thing is the behavior of clean and healthy life of pregnant women and families is still low. Water is a staple for human life. Provision of clean water is very important in the prevention of diseases, facilities for household needs and food hygiene. If an environment has been polluted then it can be ascertained that there is little or no clean water supply in the area.

In order to provide good service, the Indonesian government provides support by requiring each hospital to periodically accredit the national or international accreditation (Joint Commission International), where the assessment is carried out from several aspects such as physical buildings, health services, equipment, medicines, human resources, and administration by using an assessment element that is also an indicator of each aspect. Anesthesia services include services that are always assessed, both in national and international accreditation.

#### **4. Cover**

##### **4.1 Conclusions**

Mortality is one component of the demographic process in addition to fertility and mobility that affect the population structure. While Baby Mortality is one indicator of the success of health development that has been declared in the National Health System and even used as a central indicator of the success of health development in Indonesia. One of the factors affecting high infant mortality in a region is due to health services.

Hospitals that act as one of the health services are expected to have good accreditation in order to reduce infant mortality rate. Accreditation of a hospital affects the high level of mortality in a region. The better the accreditation of a hospital it is expected that the hospital has a good doctor and nurse as well as the service.

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