

Research Article

## Profile of Cesarean Sections since the BPJS Era

### Profil Seksio Sesarea pada Era BPJS

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#### Abstract

**Objective:** To find out the profile of cesarean section in dr. Zainoel Abidin Hospital since the BPJS era.

**Methods:** This study was a descriptive-observational with retrospective design. The data were obtained in March-April 2017. We collected 3656 data from medical record period January 1<sup>st</sup>, 2014 - December 31<sup>st</sup>, 2016.

**Results:** The finding showed there were 1,669 vaginal deliveries (45.65%) and 1,987 cesarean sections (54.35%). The most frequent causes to cesarean sections were induction failure (49.77%), cephalopelvic disproportion (14.33%), pregnancy-induced hypertension (11.21%), malpresentation (8.91), and antepartum haemorrhage (4.33%).

**Conclusions:** The incidence of cesarean sections in dr. Zainoel Abidin Hospital since the BPJS era was 54.35%, increased by 13.29% than the year of 2011-2013 (41.06%) with the most frequent cause is induction failure (49.77%).

**Keywords:** Antepartum haemorrhage, BPJS, cesarean section, induction failure, pregnancy-induced hypertension, tertiary referral hospital.

#### Abstrak

**Tujuan:** Mengetahui profil persalinan seksio sesarea di RSUD dr. Zainoel Abidin Banda Aceh pada era BPJS.

**Metode:** Penelitian deskriptif-observasional dengan desain studi retrospektif. Pengambilan data dimulai dari bulan Maret-April 2017. Sebanyak 3656 data dikumpulkan dari rekam medik periode 1 Januari 2014 - 31 Desember 2016.

**Hasil:** Terdapat 1.669 kasus persalinan pervaginam (45,65%) dan 1.987 kasus seksio sesarea (54,35%). Indikasi terbanyak yang menyertai seksio sesarea adalah gagal induksi (49,77%), cephalopelvic disproportion (14,33%), hipertensi dalam kehamilan (11,21%), malpresentasi (8,91%), dan perdarahan antepartum (4,33%).

**Kesimpulan:** Angka seksio sesarea di RSUD dr. Zainoel Abidin meningkat 13,29% sejak berlakunya BPJS (1 Januari 2014-31 Desember 2016) mencapai 54,35% dibandingkan tahun 2011-2013 (41,07%) dengan indikasi terbanyak gagal induksi (49,77%).

**Kata kunci:** perdarahan antepartum, BPJS, seksio sesarea, gagal Induksi, hipertensi dalam kehamilan, RS rujukan tersier.

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#### INTRODUCTION

Badan Penyelenggara Jaminan Sosial (BPJS) is an institution that established to organize National Health Insurance program in Indonesia (Jaminan Kesehatan Negara/JKN) according to the law number 24 in 2011 and law number 40 in 2004 regarding national social security system, article 5 paragraph 1 and Article 52. Every Indonesian citizen and a foreigner who has resided in Indonesia for at least six months shall be a member of BPJS.<sup>1</sup>

For pregnant women, the JKN-BPJS program provides a guarantee of maternal health care costs including pregnancy exam, delivery, post-

misbehaving bleeding, family planning services, after delivery and complications related to pregnancy and childbirth. In addition, JKN-BPJS also guarantees newborn services by health personnel at health facilities.<sup>2</sup>

The incidence of cesarean sections in Indonesia is increasing every year. The cesarean section in 2000 is 47.22%, 53.2% in 2004, then increased to 53.68% in 2006. Various studies were conducted at hospitals throughout Indonesia. The percentage of cesarean sections at government hospitals is above the standard of 20-25%. The percentage of cesarean sections in private hospitals is also increased to about 30-80% of all types of labour.<sup>3</sup>

Dr. Zainoel Abidin Hospital is the only tertiary referral Hospital in Province Aceh. In 2011, there were 809 vaginal deliveries and 439 cesarean sections. In 2012, there were 631 vaginal deliveries and 496 cesarean sections. In 2013, there were 579 vaginal deliveries and 472 cesarean sections. The number was then collected into 1407 cases of cesarean sections (41.06%) of 3426 cases of labour since 2011-2013. This number then increased in the era of BPJS, there were 633 vaginal deliveries and 725 cesarean sections in 2014, 457 vaginal deliveries and 514 cesarean sections in 2015, then 579 vaginal deliveries and 748 cesarean sections in 2016. The number was collected into 1987 ( 54.35%) cesarean sections cases from 3656 labour cases during 2014-2016.

Regarding the background, researchers interested in studying the profile of cesarean sections in dr. Zainoel Abidin Banda Aceh since the promulgation of BPJS (period 1<sup>st</sup> January 2014-31<sup>st</sup> December 2016).

## METHODS

This research is a descriptive observational study with retrospective study design and total sampling technique. The data were obtained in March-April 2017. We collected 3656 data from the medical record in this study period January 1<sup>st</sup>, 2014- 31<sup>st</sup> December 2016.

## RESULT

**Table 1.** Annual Rates of Delivery before BPJS Era (2011-2013)

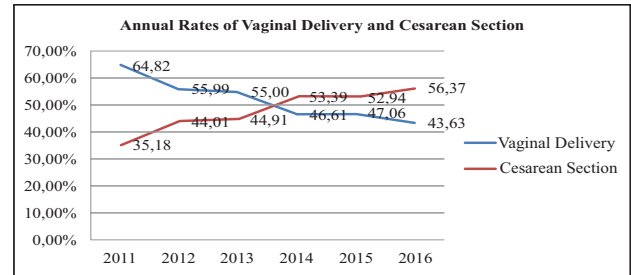
Year	Vaginal Delivery	Cesarean Sections	Total
2011	809 (64.82)	439 (35.18)	1248 (100)
2012	631 (55.99)	496 (44.01)	1127 (100)
2013	579 (55.09)	472 (44.91)	1051 (100)
<b>Total</b>	<b>2019 (58.94)</b>	<b>1407 (41.06)</b>	<b>3426 (100)</b>

*Interpretation: vaginal birth dominated the type of labor conducted in 2011-2013*

**Table 2** Annual Rates of Delivery in BPJS Era (2014-2016)

Year	Vaginal Delivery	Cesarean Sections	Total
2014	633 (46.61)	725 (53.39)	1358 (100)
2015	457 (47.06)	514 (52.94)	971 (100)
2016	579 (43.63)	748 (56.37)	1327 (100)
<b>Total</b>	<b>1669 (45.65)</b>	<b>1987 (54.35)</b>	<b>3656 (100)</b>

*Interpretation: cesarean sections dominated the types of labor in 2014-2016*



*Interpretation: cesarean section rates are rising year after year since 2011-2016*

**Figure 1.** Annual rates of vaginal delivery and cesarean section in dr. Zainoel Abidin Hospital

**Table 3.** Characteristics of Cesarean Sections in the BPJS Era (2014-2016)

Characteristics	Total	%
<b>Age</b>		
17-25	476	23.96
26-35	1,143	57.52
≥36	361	18.52
<b>Parity</b>		
Primiparous	641	32.36
Multiparous	1,346	67.74
<b>Previous Cesarean sections</b>		
Yes	486	24.46
No	1,501	75.54
<b>Infant's outcome</b>		
Alive	1,962	98.74
Death	25	1.26
<b>Indication</b>		
Induction failure	989	49.77
Cephalopelvic disproportion	285	14.33
Hypertension	143	11.21
Malpresentation	177	8.91
Antepartum Hemorrhage	86	4.33
Dystocia	76	3.82
Fetal Distress	51	2.57
IIU	28	1.41
Etc	67	3.37
<b>Total</b>	<b>1,987</b>	<b>100</b>

*Interpretation: the most common indication following cesarean sections were induction failure.*

Table 1. Shows the distribution of delivery types in dr. Zainoel Abidin Hospital before BPJS era (2011-2013). There were 1407 cesarean sections and 2019 vaginal deliveries. Table 2. Shows the distribution of the delivery types after the BPJS era (2014-2016). There were 1,987 cesarean sections and 1,669 vaginal deliveries. Table 3. Demonstrates the characteristics of women undergoing cesarean sections following the promulgation of BPJS (2014-2016). This table shows the age of mothers who underwent cesarean sections is dominated by age group

26-35 years with 57.52%, whereas the least age group underwent cesarean sections is  $\geq 36$  years with 18.52%. Based on the number of parity of mothers, obtained women who undergo cesarean sections is generally multiparous, as many as 67.74%. Based on this study found that 24.46% of patients who underwent cesarean sections have had previous cesarean sections. Based on infant outcomes, 98.74% of babies were delivered alive. While the other 1.26% of babies are born dead. This table also shows the indication of the cesarean section which dominated by induction failure with 49.77%. Cephalopelvic disproportion is the second most common indication with 14.33%, followed by pregnancy-induced hypertension with 11.21%, malpresentation 8.91%, antepartum haemorrhage (4.33%) and other indication 3.70%.

## DISCUSSION

### Cesarean Sections Rate

The incidence of cesarean sections in Indonesia is increasing every year. The number of cesarean sections in 2000 was 47.22%, increased to 53.2% in 2004, then increased to 53.68% in 2006.<sup>3</sup> This also happened in dr. Zainoel Abidin Hospital Banda Aceh. The number of cesarean sections before the era of BPJS in 2011-2013 is 41.06%, then increased to 54.35% since the promulgation of BPJS (2014-2016).

Based on a study in 2013 it was found that the incidence of cesarean sections at Mansoura Hospital of Egypt reached 47.25%. This could happen because Egypt's Mansoura Hospital is the only tertiary hospital in Province Dakahlia, Egypt. Most women are referred to this hospital with life-threatening obstetrical complications from private practice and hospitalization.<sup>4</sup> This is similar to the state of dr. Zainoel Abidin which is the only tertiary referral hospital in Province Aceh.

Based on research in 2015 in Saudi Arabia, cesarean sections trends occur because of the easy access to anaesthesia and intensive neonatal care at tertiary referral hospitals. Cesarean section also results from a change in the practice of doctors. This is a preventable factor.<sup>5</sup> The increasing phenomenon of cesarean sections also occurs in Brazil. The cesarean sections number in Brazil in 2000 was 37.9%, this number

was rising sharply until 2011 with 53.9%. In 2012, the number reached 55.8%. This may occur because the cesarean section is sometimes not accompanied by appropriate indications and is considered to be the most convenient type of delivery for physicians and both patients and their families.<sup>6</sup>

### Characteristic of Women Underwent Cesarean Sections

Based on the results of this study, cesarean sections are common in women aged 26-35 years with 57.52% followed by groups of women aged 17-25 years with 23.06%. The other 18.52% of women underwent cesarean sections were from the  $\geq 36$  age group. This is in accordance in 2013 in Ethiopia, the most common age group who underwent cesarean sections were women aged 25-35 years.<sup>7</sup> In 2014, women from 31- 35 years age group dominated the cesarean sections with 27.6%, followed by the age group of 26-30 years with 31.1% and the age group of 20-25 years with 27.6%.<sup>8</sup>

Based on this research, the multiparous women group dominates cesarean sections with 67.74%, while the primiparous group is 32.26%. In 2016, the incidence of cesarean sections in primiparous reached 33%.<sup>9</sup> The cesarean sections number from the primiparous group reached 38%.<sup>10</sup> The most common cesarean sections indication accompanying multiparous women are having a history of SC in previous pregnancy, antepartum haemorrhage (placenta previa, placental abruption, uterine rupture), and malpresentation (breech and transverse presentation).<sup>11</sup> The indication accompanying the cesarean sections of primiparous are induction failure, fetal distress, cephalopelvic disproportion, dystocia, malposition and malpresentation.<sup>12</sup> Cesarean sections delivery should be indicative, considering the high maternal and perinatal morbidity that can occur during and after the surgical procedure.

Based on this study, it is known that 24.46% of women who underwent cesarean sections have had cesarean sections in previous pregnancy. In 2015 in Albania, 36.5% of women who underwent cesarean sections have had previous cesarean sections.<sup>13</sup> In Portugal in 2015, 11.5 % of women who underwent cesarean sections had a cesarean

section in previous pregnancy.<sup>14</sup> The cesarean sections of former cesarean sections is a relative indication for labour with subsequent caesarean section. Vaginal delivery in this case may be possible but has risks for both the fetus and the mother. A cesarean sections in former cesarean sections are performed when the previous cesarean sections indication will be repeated at the next delivery, such as contracted pelvis. Other indications include having had two cesarean sections, history of classic cesarean sections, and dehiscence scar.<sup>11</sup>

Based on this study, it is known that 98.74% of babies were born cesarean sections since 2014-2016 are born alive, while the other 1.26% are born dead. In 2016 in Manado, 98.2% of infants were born alive, while the other 1.8% of infants were born in the dead state.<sup>15</sup> Antepartum fetal mortality where the fetus has passed the viability period is called Intra Uterine Fetal Death / IUFD. Fetal death is associated with maternal, fetal, and placental factors. The most common maternal factors accompanying IUFD are pregnancy-induced hypertension, diabetes, infections, or immunologic diseases such as SLE. The most ideal delivery in the case of IUFD is by induction of labour. Cesarean sections usually performed in situations such as placenta previa, former cesarean sections, and the malpresentation.<sup>12</sup>

### Indication of Cesarean Sections

Based on the data collected, it is known that the most common indication for cesarean sections in dr. Zainoel Abidin Banda Aceh is induction failure, with 49.77%. Cephalopelvic disproportion is the second most common indication with 14.33%, followed by hypertension in pregnancy with 11.21%, malpresentation with 8.91%, antepartum haemorrhage with 4.33%, fetal distress with 2.57%, intrauterine infection with 1.41 %, and others 3.37%.

Based on this study, induction failure dominated cesarean sections with 49.77%. This rate of induction failure was found to be greater than in other studies. The results 2016 in Ethiopia showed that the induction failure rate reached 21.4%. Another study in Addis Ababa showed an induction failure rate reached 28.4%.<sup>16</sup> Other studies at M. Djamil Hospital showed induction failure rate with oxytocin drip in post-term

pregnancy reached 50.0%. Induction failure can be caused by several things, such as failing to maintain oxytocin concentrations during intravenous changes. Other possibilities can be caused by differences of opinion about when to start induction and when to pronounce failure of induction.<sup>16</sup>

Induction of labour is performed in pregnant women whose cervix isunfavourable with maternal or fetal problems such as premature rupture of membranes, gestational diabetes, pregnancy-induced hypertension, Intrauterine Growth Restriction (IUGR), postdate pregnancy, oligohydramnios, and maternal chronic diseases.<sup>6</sup> Induction of labour in this study was dominated by premature rupture of membranes (64.40%). The study in Bhakti Rahayu Surabaya Hospital in 2011 using a descriptive method showed that the most common factor accompanying cesarean sections in primiparous is premature rupture of membranes. As well as in dr. Zainoel Abidin Hospital in 2013, the highest cause of cesarean sections was a premature rupture of membranes with 40%.<sup>17</sup> Premature rupture of membranes can occur late during pregnancy or long before delivery. This number indicates a higher rate compared to some educational hospitals in several major cities in Indonesia such as dr. Pirngadi Hospital Medan with 2.27%, dr. Hasan Sadikin Hospital Bandung 5.05%, dr.Cipto Mangunkusumo Hospital Jakarta 11.22%, Sanglah Hospital Denpasar Bali 13%.<sup>18</sup> Complications caused by premature rupture of membranes can be preterm labour, infection, cord prolapse, pulmonary hypoplasia, neonatal sepsis, and increased perinatal morbidity. Labour will generally start in 24-48 hours afterwards. Induction of labour may be performed when the gestational age is  $\geq 34$  weeks in occiput presentation fetus. Cesarean sections are performed in the failure of induction or malpresentation.<sup>12</sup>

Factors leading to failure of induction include the unfavourable cervix, primiparity, elderly pregnant women, insufficient gestational age, macrosomia, short mothers, and mothers with obesity.<sup>19</sup> According to Gabbay-Benziv R study in Berlin in 2016, the rate of induction failure reached 20%, women who experienced induction failure were dominated by nulliparas, elderly mothers, and premature gestational age.<sup>19</sup>



## CONCLUSION

Based on our study, it can be concluded that cesarean sections dominate the types of labor in dr. Zainoel Abidin Hospital Banda Aceh with 54.35%. The most common indication leading to cesarean sections was induction failure with 49.77%.

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