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## Hospital Annual Delivery Volume and Presence of Graduate Medical Education Influence Mode of Delivery after Stillbirth

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### Abstract

**Objectives:** To evaluate the statewide experience in mode of delivery for pregnancies complicated by stillbirth by annual delivery volume and presence of graduate medical education programs.

**Methods:** This is a descriptive study of all stillbirths without known congenital anomalies or aneuploidy born in our state from July 1, 2015 to June 30, 2019. Stillbirths were ascertained by the State Reproductive Health Monitoring System, a population-based surveillance system. Stillbirths were identified by the State Reproductive Health Monitoring System from medical facilities and fetal death certificates; trained staff abstracted records. All of the stillbirths with a gestational age of >20 weeks or a birth weight of >500 g if birth weight was unknown and without congenital anomalies or aneuploidy were eligible for this study.

**Results:** There were 861 stillbirths between July 2015 through June 2019, 75 (8.7%) of which were delivered by cesarean section. Low-volume hospitals (<1000 deliveries) experienced a higher proportion of their stillbirths delivered by cesarean compared with high-volume hospitals (>1000 deliveries; 13.4% vs 5.5%;  $P < 0.0001$ ). Before adjusting for maternal characteristics, stillbirths delivered at high-volume hospitals had a 59% lower risk of delivery by cesarean section compared with those delivered at low-volume hospitals (relative risk [RR] 0.41, 95% confidence interval 0.20–0.86,  $P = 0.02$ ). The cesarean cohort had a higher proportion of Black mothers (44% vs 31.3%,  $P = 0.025$ ), greater parity ( $P < 0.0001$ ), and greater gravidity ( $P < 0.0001$ ) compared to the vaginal group. The gestational age at delivery for stillbirths delivered by cesarean was much higher compared with those who were delivered vaginally (34.8 weeks vs 28.6 weeks;  $P < 0.0001$ ). The RR of the cesarean delivery of a stillbirth at teaching institutions compared with nonteaching institutions was significantly reduced (RR 0.45, 95% confidence interval 0.28–0.73,  $P = 0.0011$ ).

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**Conclusions:** Annual hospital delivery volumes and residency teaching programs in obstetrics influences the mode of delivery in the management of stillbirth. Advancing gestational age, Black race, and parity are associated with an increased risk of cesarean delivery after stillbirth.

### Keywords

cesarean; intrauterine fetal death; management; mode of delivery; stillbirth

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Stillbirth, defined as fetal death at 20 weeks' gestation, complicates 1 in 160 pregnancies in the United States<sup>1-3</sup>; however, there is no uniformity among states regarding birth weight and gestational age criteria for reporting a fetal death.<sup>3</sup> The overall stillbirth rate in the United States in 2013 was reported to be 5.96/1000 live births, which is a decrease compared with reported rates in 2006 and 2012.<sup>2</sup> In addition, the stillbirth rate for non-Hispanic Black women is 10.53/1000 live births, which is nearly double the rate found in other racial groups.<sup>2</sup>

Stillbirth management is based on several factors, including gestational age, suspected etiology of the demise, maternal history, presence of a prior uterine scar or scars, and maternal preference.<sup>1,2</sup> Shared decision making between the patient and her physician is paramount in discussing the mode of delivery.<sup>2</sup> Many women desire immediate delivery after the diagnosis of stillbirth; however, expectant management can be used because 80% to 90% of women will spontaneously labor within 1 to 2 weeks of a fetal death in utero.<sup>1,2,4</sup> Dilation and evacuation and induction of labor are the preferred delivery methods for the management of stillbirth.<sup>2,3</sup>

The primary concern in the management of a stillbirth is maternal safety. Prior uterine scarring presents a unique challenge regarding the management of stillbirth, particularly after 28 weeks' gestation.<sup>1,3</sup> With the increasing cesarean delivery rate, the occurrence of fetal death in patients with a prior uterine scar also is increasing.<sup>5</sup> The American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal Fetal Medicine state that cesarean delivery in the setting of stillbirth should be limited to unusual circumstances due to increased maternal morbidity without fetal benefit, particularly in the setting of one prior hysterotomy.<sup>2,3</sup> The reluctance to perform vaginal birth after cesarean and the scarcity of data available for counseling women regarding risks affect management options.<sup>5</sup> In addition, physicians' clinical experience and bias affect the management of pregnancies complicated by stillbirth.<sup>5</sup>

Other factors to consider when constructing a management plan include the patient's future fertility desires and the risks of vaginal delivery compared with a cesarean. Cesarean deliveries are associated with an increased risk of placenta accreta spectrum, uterine rupture, and surgical morbidity due to adhesive disease.<sup>5</sup> There also has been an increase in the cesarean delivery rate for the management of stillbirth reported in the literature.<sup>4,6</sup> Results from the Stillbirth Collaborative Research Network published in 2016 reported a cesarean delivery rate of 15.2% following stillbirth.<sup>4</sup> The purpose of the present study was to determine the mode of delivery for pregnancies complicated by stillbirths and the factors associated with mode of delivery in a predominantly rural state.

## Methods

This is a descriptive study of all stillbirths without anomalies or aneuploidy born in Arkansas to resident women from July 1, 2015 to June 30, 2019. A stillbirth was defined as “an intrauterine fetal death that occurs at a gestational age of 20 weeks or greater or, if the gestational age is unknown, then fetal death weighing 500 grams or more at delivery.”<sup>7</sup> Death is indicated by the fact that after the expulsion or extraction of the fetus, it does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Heartbeats shall be distinguished from the transient cardiac contractions; respirations shall be distinguished from fleeting respiratory efforts or gasps.”<sup>7</sup> A birth weight of 500 g was used in concordance with the definition in the State Vital Statistics Act.<sup>7</sup>

### Ascertainment of Stillbirths

Cases were ascertained by a statewide reproductive health monitoring system that has conducted statewide surveillance since 1993 for pregnancies affected by a birth defect and pregnancies ending in a stillbirth without birth defects. Health information specialists identify cases and abstract medical records from multiple overlapping sources: hospital indices from all birthing hospitals and medical facilities in the state based on reportable *International Classification of Diseases, 10th Edition-Clinical Modification* stillbirth, intrauterine death, and spontaneous abortions codes; fetal death records from the state department of health; and a university guidelines, education, and learning system for high-risk pregnancies teleultrasound system. This study was approved by the institutional review board.

### Study Variables

Maternal prenatal, delivery, and sociodemographic information were obtained from the provided records and included delivery hospital; maternal age (years); race (white, Black, and other); gravidity; parity; pregnancy complications; gestational age at demise (completed weeks); gestational age at delivery (completed weeks); birth weight (grams); genetic testing and results if performed; intraoperative description of the placenta and umbilical cord; placenta pathology report; fetal autopsy if performed; history of cesarean delivery; number of prior cesarean deliveries; the indication for cesarean delivery; type of uterine incision; sterilization at time of delivery; and complications such as chorioamnionitis, uterine incision extension, uterine rupture, and intraoperative injury, hemorrhage, or need for a blood transfusion.

### Hospital Characteristics

Annual delivery rates for each hospital were extracted from state-reported numbers. Annual deliveries were estimated based on hospital bed size and county population for hospitals if delivery statistics were unavailable. A low-volume hospital was defined as <1000 deliveries annually. A high-volume hospital was defined as ≥ 1000 deliveries annually. Hospitals also were analyzed on whether they had a residency program in which obstetrics is taught to either an obstetrics and gynecology (OB-GYN) residency or a family medicine residency that included obstetric training.

## Statistical Analyses

Summary statistics were presented as means and standard deviations for continuous measures and frequencies and percentages for categorical variables. In addition, medians with 25th and 75th percentiles were used for non-Gaussian data. Initially, we compared the distribution of key demographic characteristics, including maternal age, maternal race/ethnicity, parity, gravidity, and gestational age at delivery across hospital volume (low volume vs high volume) using a two-sample *t* test, the Wilcoxon rank-sum test, or the  $\chi^2$  or Fisher exact test, as appropriate. Next, we examined bivariate relationships between delivery modes (cesarean vs noncesarean) with hospital volume and various demographic measures. To account for patients being nested within hospitals, we used a modified Poisson regression model to obtain the relative risk of delivery by cesarean with and without covariates.<sup>8</sup> All of the statistical analyses were based on 2-sided tests with a significance level of 0.05 using SAS version 9.4 (SAS Institute, Cary, NC).

## Results

A total of 861 stillbirths without known congenital anomalies or aneuploidy were ascertained from July 2015 through June 2019. Seventy-five of these were delivered by cesarean section in the 44 birthing hospitals around the state. The overall cesarean delivery rate was 8.7%. There were 509 stillbirths delivered in high-volume hospitals (>1000 deliveries annually) and 352 delivered in low-volume hospitals (<1000 deliveries annually).

The mean maternal age was 28 years, with the majority of the mothers being white (57%). Gestational age and race were statistically different across the hospital types, with an average gestational age of 30.1 weeks at low-volume compared to 28.5 weeks at high-volume institutions (see Table 1). Low-volume hospitals also had a higher percentage of Black mothers (36.7% vs 29.5%,  $P = 0.03$ ) compared with high-volume hospitals. Table 2 is a summary of the total number of stillbirths and mode of delivery per hospital categorized by hospital volume.

Table 3 provides the distribution of maternal characteristics for pregnancies ending in stillbirth and hospital volume by delivery mode. Low-volume hospitals had a higher proportion of their stillbirths delivered by cesarean section compared with high-volume hospitals (13.4% vs 5.5%,  $P < 0.0001$ ). Women who had cesareans were on average older than those who delivered vaginally. The cesarean cohort had a higher proportion of Black mothers (44% vs 31.3%,  $P = 0.025$ ), greater parity ( $P < 0.0001$ ), and gravidity ( $P < 0.0001$ ) compared with the vaginal group. The gestational age at delivery for the stillbirths delivered by cesarean were much higher compared with those who were delivered vaginally (34.8 vs 28.6 weeks;  $P < 0.0001$ ).

Patients were nested within hospitals where care is likely to be homogenous with similar decision making and management because of policy and physician opinion; therefore, to account for the clustering, we computed the relative risk (RR) of cesarean between high-volume and low-volume hospitals using an extended modified Poisson regression model. Before adjusting for any maternal characteristics, stillbirths delivered at high-volume hospitals had a 59% lower risk of delivery through cesarean compared with those delivered

at low-volume hospitals (RR 0.41, 95% confidence interval [CI] 0.20–0.86,  $P=0.02$ ). Table 4 provides the adjusted RRs (adjusted for clustering). Although the risk for delivery via cesarean section remains lower among those stillbirths at high-volume hospitals, it is not statistically significant after adjusting for maternal factors (RR 0.554, 95% CI 0.287–1.095,  $P=0.097$ ). The adjusted RR for cesarean among Black patients was statistically significant compared with white patients (RR 1.795, 95% CI 1.18–2.68,  $P=0.01$ ). We also observed that the RR of cesarean increases with both gestational age and parity. Specifically, those infants with moderate to late preterm and gestational age  $>37$  weeks had an increased risk of delivery by cesarean section compared to the extremely preterm group. Also, primiparous and multiparous mothers were more likely to undergo a cesarean compared with nulliparous mothers. Table 5 is a summary of the listed indications for cesarean delivery.

Of the 44 birthing hospitals, 12 have OB-GYN residency or family practice training programs with an obstetric training component. Of the 861 stillbirths, 427 delivered at these 12 hospitals. There was a 67.7% reduction in the RR of cesarean delivery for the management of stillbirth in high-volume teaching hospitals compared with the low volume, which was statistically significant (RR 0.32, 95% CI 0.14–0.73,  $P=0.007$ ). Because of sample size limitations, we were unable to adjust for clustering when analyzing the hospitals with graduate medical education alone. When estimating the RR of cesarean delivery at teaching institutions compared with nonteaching institutions, we observed a statistically significant reduction of 55% in the risk of cesarean delivery at teaching hospitals (RR 0.4502, 95% CI 0.28–0.73,  $P=0.0011$ ).

## Discussion

Our statewide cesarean delivery rate for stillbirths between 2015 and 2019 was 8.7%. This rate is slightly lower than that previously published rate by Di Stefano et al, who observed a rate of 10.5% based on US National Center for Health Statistics data between 1995 and 2004.<sup>6</sup> We observed in this study that a higher proportion of stillbirths were delivered by cesarean section in low-volume hospitals compared with high-volume hospital in Arkansas. Sixty-three percent (47/75) of stillbirths delivered via cesarean were in low-volume hospitals, and this accounted for 40.9% of all stillbirth deliveries in the state during the study period. The overall RR of a cesarean delivery after stillbirth when delivering at high-volume hospitals was reduced by 59% compared to delivery at low-volume hospitals. Low-volume hospitals continued to have a higher proportion of cesarean deliveries when adjustments for maternal characteristics were made; however, when we adjusted for maternal characteristics and clustering within hospitals, the risk of cesarean delivery was no longer statistically significant.

The maternal characteristics of Black race, parity, and advanced gestational age also were positively associated with cesarean delivery for the management of stillbirth. This highlights that pregnant Black women have an increased risk for stillbirth and its management with cesarean delivery.<sup>6</sup> Similar to the findings reported by Di Stefano et al, we found that gestational age was associated with cesarean delivery.<sup>6</sup> Facility policy regarding trial of labor after cesarean and physician bias or comfort with an induction of labor following

stillbirth in the setting of prior uterine incision may be a contributing factor to the increased incidence with advanced gestational age.<sup>5</sup>

For women with a prior uterine incision and fetal death after 28 weeks' gestation, ACOG and the Society for Maternal Fetal Medicine recommend the use of oxytocin protocols and cervical ripening with transcervical balloon<sup>1,3</sup>; however, reluctance to perform induction of labor after stillbirth in the setting of prior uterine incision limits the adherence to these recommendations, particularly after 28 weeks' gestation.<sup>5</sup> Our data support the published data in that prior cesarean remains a common indication for cesarean delivery in the management of stillbirth despite the lack of fetal benefit.<sup>4</sup> We found that prior cesarean was the indication listed in 41% of patients who underwent cesarean delivery for the management of stillbirth, which is similar to that reported by Boyle et al.<sup>4</sup>

There is 1 OB-GYN residency program and 11 family medicine residency programs in which obstetrics makes up a portion of the clinical curriculum at the 44 birthing hospitals around the state. Nearly 50% of the stillbirths delivered at these institutions during the study period. The cesarean delivery rate for stillbirths was 5% among those teaching hospitals, which is lower than the overall state average. The statewide stillbirth cesarean delivery rate for nonteaching institutions was 12.2%, which is similar to previously reported rates and may reflect common private practice patterns.<sup>4,6</sup> Twenty-nine percent of the stillbirths delivered by cesarean were delivered at the 12 hospitals with medical education. There was a statistically significant reduction of 67.7% in the risk of cesarean delivery for the management of stillbirth in high-volume teaching hospitals compared with low-volume teaching hospitals. The risk of cesarean at teaching institutions decreased by 55% compared with nonteaching institutions. The only hospital with an OB-GYN residency had the greatest number of stillbirths delivered at that hospital (n = 179), but only 2 patients were delivered via cesarean. Medical records were available to evaluate the decision-making process regarding the mode of delivery. The indication for cesarean delivery in one case was complete posterior placenta previa and a müllerian anomaly with multiple vaginal septae in the setting of preeclampsia, with severe features in the other case. Of the 177 stillbirths managed with vaginal delivery at that institution, 41 had a history of cesarean delivery (23.2%). Fifty-six percent of those with a history of cesarean delivery had 1 prior hysterotomy. Thirteen patients had a history of 2 prior cesarean deliveries, 4 patients with 3 prior cesarean deliveries, and 1 patient who had 4 prior cesarean deliveries at our institution, all of whom were induced and successfully delivered vaginally. There were no uterine ruptures. Expanded resources with in-hospital obstetrics and anesthesia services and the offering of routine trial of labor after cesarean for viable pregnancies may be contributing factors to the reduced cesarean delivery rate among teaching institutions. Regular educational exercises such as journal clubs, didactic sessions, and process improvement may increase adherence to the current guidelines and may affect the management of stillbirth as well.

One of the strengths of this study is the large number of stillbirths in a state in which all births, regardless of outcome, are monitored by the state's birth defects and stillbirth registries in a single monitoring system. In addition, this is a large population-based study

with a large number of stillbirths. The cases were ascertained from multiple sources and all of the cases were clinically reviewed and confirmed.

One of the limitations of this study is that complete medical records were not available for all of the patients with stillbirth who were delivered by cesarean section. Analysis examining the impact of prior cesarean delivery on decision making regarding mode of delivery was not possible because the delivering providers were not interviewed and complete medical records were not available for review. It also was not possible to assess or describe the shared decisions between the delivering provider and patient for each case. Another limitation is that this study is retrospective, without the ability to evaluate clinical decision making and patient counseling within the context of individual patient scenarios. The impact of local culture and attitudes about management cannot be inferred or analyzed.

## Conclusions

This study supports the findings of other investigators who have advocated for increased provider education on the management of stillbirth and highlights areas for improvement in obstetric care in our rural, southern state to reduce the cesarean delivery rate for stillbirth.<sup>4,6,9</sup> Additional areas of improvement include documenting and describing the fetal physical features at the time of the stillbirth delivery and offering autopsy and genetic testing to patients who have pregnancies complicated by stillbirth. These recommendations are highlighted in the ACOG management guidelines because the etiology of stillbirth affects counseling and management in future pregnancies.<sup>3</sup> Our study demonstrates that annual hospital delivery volume and residency teaching programs in obstetrics influences the mode of delivery in the management of stillbirth. Support from high-volume hospitals and hospitals with graduate medical education may improve care for patients to decrease the cesarean delivery rate in the management of stillbirth.

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### Key Points

- The risk of cesarean delivery for stillbirth management is reduced by 59% in high-volume hospitals, and a higher proportion of cesarean deliveries following stillbirth occurred at low-volume hospitals.
- The risk of cesarean delivery after stillbirth is reduced by 67.7% at teaching hospitals with family medicine or obstetrics and gynecology residency training programs.
- The maternal characteristics of Black race, parity, and advanced gestational age were positively associated with cesarean delivery for the management of stillbirth.

**Table 1.**

Demographic and prenatal characteristics of women who delivered stillbirths by annual hospital volume, statewide, July 2015–June 2018

Variable	Overall	Low-volume hospital	High-volume hospital	<i>P</i>
Age, y, mean $\pm$ SD	27.5 $\pm$ 6.4	27.0 $\pm$ 6.2	27.8 $\pm$ 6.5	0.09
Race, N (%)				0.05
White	492 (57.1)	193 (54.8)	299 (58.7)	0.25 <sup>a</sup>
Black	279 (32.4)	129 (36.7)	150 (29.5)	0.03 <sup>a</sup>
Other/unknown	90 (10.5)	30 (8.5)	60 (11.8)	0.12 <sup>a</sup>
Gestational age, wk, mean $\pm$ SD	29.2 $\pm$ 6.6	30.1 $\pm$ 6.5	28.5 $\pm$ 6.5	0.0003
Parity, median (Q1, Q3)	0 (0, 2)	1 (0, 2)	0 (0, 2)	0.50 <sup>b</sup>
Gravidity, median (Q1, Q3)	2 (1, 3)	2 (1, 3)	2 (1, 3)	0.92 <sup>b</sup>

SD, standard deviation.

<sup>a</sup>Pairwise comparison based on  $\chi^2$  test.

<sup>b</sup>*P* based on Wilcoxon rank-sum test.

**Table 2.**

Mode of delivery after stillbirth stratified by statewide annual hospital delivery volume, July 2015–June 2019

Hospital ID no.	Births	Stillbirths			Cesarean delivery, %
		Vaginal delivery	Cesarean delivery	Total	
1	100	1	0	1	0.0
2	100	1	0	1	0.0
3	100 <sup>a</sup>	4	0	4	0.0
4	100 <sup>a</sup>	4	0	4	0.0
5	135	3	0	3	0.0
6	136	4	2	6	33.3
7	170	4	2	6	33.3
8	178	14	3	17	17.6
9	214	9	2	11	18.2
10	217	6	1	7	14.3
11	267	15	2	17	11.8
12	326	9	0	9	0.0
13	350	17	4	21	19.0
14	350	8	2	10	20.0
15	369	11	2	13	15.4
16	417	3	0	3	0.0
17	472	8	0	8	0.0
18	493	8	0	8	0.0
19	570	8	1	9	11.1
20	594	15	1	16	6.3
21	607	6	1	7	14.3
22	615	8	3	11	27.3
23	655	6	0	6	0.0
24	700 <sup>a</sup>	8	1	9	11.1
25	727	29	4	33	12.1
26	736	9	0	9	0.0
27	747	1	0	1	0.0
28	767	18	2	20	10.0
29	901	14	4	18	22.2
30	912	21	5	26	19.2
31	935	23	3	26	11.5
32	936	10	2	12	16.7
33	1161	9	1	10	10.0
34	1302	27	1	28	3.6
35	1332	23	5	28	17.9

Hospital ID no.	Births	Stillbirths			Cesarean delivery, %
		Vaginal delivery	Cesarean delivery	Total	
36	1400	45	1	46	2.2
37	1473	17	1	18	5.6
38	1490	12	0	12	0.0
39	1512	24	1	25	4.0
40	1643	28	2	30	6.7
41	1758	16	2	18	11.1
42	2251	34	3	37	8.1
43	2705	69	9	78	11.5
44	3660	177	2	179	1.1
Total		786	75	861	

Overall cesarean delivery rate: 8.7%.

<sup>a</sup>Annual delivery rate estimated by hospital size.

**Table 3.**

Distribution of maternal characteristics among pregnancies ending in stillbirth by delivery mode, statewide, July 1, 2015–June 30, 2019

Variable	Vaginal	Cesarean section	<i>P</i>
Age, y, mean ± SD	27.3 ± 6.3	29.5 ± 6.6	0.004
Race, N (%)			0.048
White	454 (57.8)	38 (50.7)	0.236 <sup>a</sup>
Black	246 (31.3)	33 (44.0)	0.025 <sup>a</sup>
Other/unknown	86 (10.9)	4 (5.3)	0.129 <sup>a</sup>
Gestational age, wk, mean ± SD	28.6 ± 6.5	34.8 ± 4.1	<0.0001
Parity, median (Q1, Q3)	0 (0, 2)	1 (1, 2)	<0.0001 <sup>b</sup>
Gravidity, median (Q1, Q3)	2 (1, 3)	3 (2, 4)	<0.0001 <sup>b</sup>
Hospital volume, N (%)			<0.0001
Low	305 (86.7)	47 (13.4)	—
High	481 (94.5)	28 (5.5)	—

<sup>a</sup>Pairwise comparison based on  $\chi^2$  test.

<sup>b</sup>*P* based on Wilcoxon rank-sum test.

SD, standard deviation

**Table 4.**

Adjusted RR and 95% CIs for covariates associated with increased risk of cesarean section from log-binomial regression models, statewide, July 1, 2015–June 30, 2019

Variable	Adjusted RR (95% CI)	<i>P</i>
Hospital volume		
High	0.55 (0.28–1.09)	0.09
Low	Referent	
Age, y		
<25	Referent	
25–34	1.40 (0.82–2.36)	0.21
35	1.82 (0.96–3.46)	0.07
Race		
White	Referent	
Black	1.79 (1.18–2.68)	0.01
Other/unknown	0.64 (0.26–1.57)	0.33
Gestational age, wk		
<28	Referent	
28–32	1.92 (0.65–5.65)	0.24
32–37	8.30 (4.29–16.08)	<0.0001
37	6.84 (3.53–13.27)	<0.0001
Parity		
Nulliparous	Referent	
Primiparous	2.87 (1.81–4.55)	<0.0001
Multiparous	2.80 (1.55–5.04)	0.001

Analysis accounted for the clustering of subjects within hospitals; gravidity was not included in the model because of high correlation with parity. The RR for hospital volume accounting for only the clustering and excluding the demographic characteristics was statistically significant (RR 0.41, 95% CI 0.20–0.86, *P* = 0.02). CI, confidence interval; RR, relative risk.

**Table 5.**

Reported indications for cesarean delivery among 75 pregnancies ending in stillbirth, statewide, July 1, 2015–June 30, 2018

Listed indication for cesarean delivery	n	% <sup>a</sup>
Malpresentation	14	18.7
Abruption or hemorrhage	10	13.3
Prior cesarean	31	41.3
Failed induction or labor arrest	2	2.7
Placenta previa	3	4.0
Maternal request	3	4.0
Undesired fertility/planned sterilization	2	2.7
Stillbirth as sole indication	3	4.0
Remote for delivery/unfavorable cervix	1	1.3
Suspected macrosomia	4	5.3
Müllerian anomaly	1	1.3
Uterine rupture	1	1.3
None listed	1	1.3

<sup>a</sup>Percentage calculated from 75 total patients in cesarean cohort.