

Sample Topic

Cesarean Delivery



The Medical Disability Advisor: Workplace Guidelines for Disability Duration

Fifth Edition

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Editor-in-Chief

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Cesarean Delivery

Related Terms

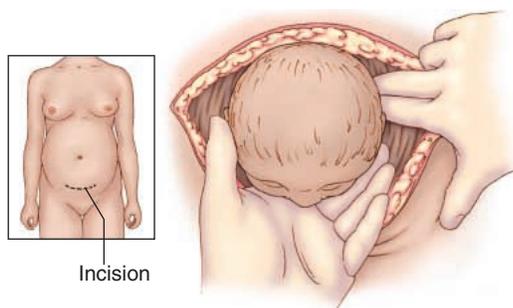
- Cesarean
- Cesarean Birth
- Cesarean Section
- C-section

Medical Codes

- ICD-9-CM: 669.7, 74, 74.0, 74.1, 74.4, 74.9, 74.99

Definition

A cesarean delivery is the surgical delivery of an infant by way of an incision through the mother's abdominal wall (laparotomy) and into the uterus (hysterotomy). A cesarean delivery can be a planned or an emergency procedure. If the delivery is not an emergency, the expectant mother is often awake and will receive an epidural that will numb her from the chest to the legs.



Reason for Procedure

A cesarean is indicated in any situation in which labor and/or vaginal delivery pose significant risks to the mother, baby, or both. The decision to perform a cesarean depends on the context of the overall situation. In each case, the relative risks to both the mother and fetus associated with cesarean versus vaginal delivery must be taken into consideration. In some cases, the choice is clear; in others, opinions may differ.

Approximately 15% of all cesareans are done because of fetal heart rate abnormalities that may indicate future problems (Sehdev). Abnormalities of labor (dystocia) in which the baby does not make progress toward being born can include a head too large to pass through the mother's pelvis (cephalopelvic disproportion), a very large baby (macrosomia), and/or dysfunction in uterine contractions. Prolonged labor usually poses greater risks to the fetus than the mother. Dystocia accounts for approximately 30% of all cesarean deliveries, making it the most significant contributing factor to cesarean delivery in the US (Bonilla).

An abnormal position of the fetus, such as the baby lying with its buttocks down (breech presentation), sideways (transverse presentation), or with a brow/posterior face position in the uterus, can make vaginal delivery impossible or risky and requires

a cesarean section to prevent fetal trauma. Breech births account for 10% to 15% of all cesarean deliveries (Fischer).

If there are two or more fetuses (multiple gestation), a cesarean section may be performed for the safety of the multiple babies. Congenital abnormalities of the fetus may also require a cesarean to reduce fetal risk or trauma from a vaginal delivery.

A premature infant may have to be delivered by cesarean section due to fetal or maternal complications. With premature rupture of the membranes, unless labor begins spontaneously, the alternatives are to intensify the contractions or to do a cesarean delivery. In many such cases, cesarean is preferable in order to reduce fetal risk.

In some cases, the umbilical cord drops out through the cervix (prolapses) before the fetus is delivered. This can result in compression of the cord and interruption of the baby's blood supply and generally requires an emergency cesarean.

A malpositioned placenta that totally or partially covers the opening of the cervix (placenta previa) is associated with maternal hemorrhage and increased fetal risk. Depending on the degree of cervical blocking, it usually requires a cesarean. Total previa, in which the placenta completely covers the cervix, always requires a cesarean.

Premature separation of the placenta from the uterine wall before delivery (abruptio placentae) can result in loss of fetal blood supply as well as severe maternal hemorrhage. Unless vaginal delivery can be accomplished rapidly, cesarean section is indicated. Small, stable abruptions do not usually require a cesarean.

Certain maternal infections, such as genital herpes active or HIV at the time of delivery, can be an indication for a cesarean because passing the fetus through an infected birth canal can result in a life-threatening infection in the newborn.

Pregnancy-induced hypertension (pre-eclampsia or eclampsia, also called toxemia of pregnancy) may endanger both the mother and fetus. The decision to perform a cesarean depends on the severity of the condition and on how soon vaginal delivery can reasonably be accomplished.

Idiopathic thrombocytopenic purpura (ITP) is an autoimmune disorder in the mother that can also affect the baby's platelets and result in a blood-clotting defect. A cesarean may be performed in the presence of ITP because the trauma of a vaginal birth may cause bleeding into the infant's brain (intracranial bleeding).

A pregnancy complicated by diabetes mellitus may pose significant fetal risk. In some cases, a cesarean section may be performed to remove the fetus as soon as possible from a dangerous intrauterine environment. With severe diabetes, the circulation in the placenta can be so compromised that intrauterine growth retardation results, and fetal heart distress in labor is common. In less severe diabetes, the high maternal serum glucose leads to very large babies (macrosomia), with increased rates of cephalopelvic disproportion, and thus, cesarean sections.

Erythroblastosis fetalis can result from a blood type incompatibility (such as Rh incompatibility) between mother and fetus

and cause anemia in the fetus. If the fetus is severely affected or if fetal distress occurs, a cesarean is performed.

Sometimes the mother has a condition in which the muscles of the cervix are weak (incompetent cervix), which results in repeated spontaneous abortions (miscarriages). In these circumstances, the cervix is sewn closed in a surgical procedure called cervical cerclage. This allows the pregnancy to continue to term. In cases in which the stitches are left in place permanently, the baby is delivered by cesarean section.

Advanced invasive cervical cancer may be a reason to avoid labor because dilation of the cervix could promote spread of the cancer. However, localized cervical cancer (carcinoma in situ) is not an indication for cesarean.

A woman who has had a previous cesarean section may require a repeat cesarean, depending on the type of uterine incision previously used and the circumstances of her first cesarean section. If the uterine incision was a horizontal (transverse) lower segment incision, it may be safe to proceed with vaginal delivery in a subsequent pregnancy. However, if the woman has a history of more than one low transverse cesarean section, she is at slightly increased risk for uterine rupture. If a previous cesarean incision was a vertical uterine incision (classical or upper segment), subsequent cesarean deliveries will help avoid the risk of the uterus breaking open (rupture). Cesarean is also performed if the previous incision type is unknown or undocumented or if the primary cesarean section was complicated by postpartum infection.

Cerebral aneurysm or history of cerebral hemorrhage in the mother can be indications for cesarean because bearing down during labor puts the mother at risk for a stroke. Serious heart disease such as mitral stenosis is another indication for cesarean in order to reduce the demands of labor and vaginal delivery on a compromised heart.

Other indicators for cesarean delivery include a narrow vaginal opening (vaginal atresia), failed medical induction, pelvic tumors, or severe obesity.

How Procedure is Performed

Cesarean delivery is performed under general or regional (spinal or epidural) anesthesia. Antibiotics are frequently administered preoperatively (prophylaxis), and a tube to drain urine (urinary catheter) is inserted into the bladder. A transverse, lower uterine incision is the most common method used. An incision is first made into the abdomen, and then the layers (e.g., skin, muscle, etc.) are opened one at a time. The bladder is held out of the way to gain access to the lower uterus. If the fetus is very large, very small, or in an abnormal position, a vertical uterine incision may be necessary to provide a larger opening.

Once the uterus has been opened, the sac holding the fetus (amniotic sac) is ruptured and the fetus is delivered. The umbilical cord is clamped and cut and the placenta delivered. The inside of the uterus is checked to ensure that no abnormalities or residual material of pregnancy remains. Any excess blood or amniotic fluid is suctioned out of the uterus and abdominal cavity. Then the uterus and layers of the abdomen are stitched

(sutured) together one layer at a time. The woman is monitored for signs of infection, excessive bleeding, or other complications. Discharge from the hospital usually occurs within 4 days after cesarean delivery.

Prognosis

Most cesarean deliveries are successful and create no complications for the mother or infant.

Specialists

- Obstetrician / Gynecologist

Rehabilitation

Women who undergo cesarean section require physical therapy prior to discharge from the hospital. Physical therapists instruct women in incision support, deep-breathing exercises, gentle abdominal strengthening, pelvic floor exercises, and early mobility. Physical therapists instruct women to keep their incision clean and to look for any signs of infection at the incision site, such as increased redness or drainage. To decrease the risk of pulmonary complications after surgery, women perform deep-breathing exercises with the use of an incentive spirometer. Women may need to splint the incision for this activity as well to decrease pain.

Gentle abdominal strengthening exercises and pelvic and Kegel exercises help to increase the strength of the pelvic floor muscles that may have been weakened during pregnancy or injured if a vaginal delivery was attempted prior to cesarean section. Women also are encouraged to walk after a cesarean section to help decrease the risk of clot formation in the legs.

Comorbid Conditions

- Depression
- Diabetes
- Hypertension
- Thrombosis

Complications

Maternal complications can include fever, infection of the uterus (endometritis), infection of the incision, urinary tract infection, bowel injury, excessive bleeding (hemorrhage), shock secondary to hemorrhage, blockage of an artery to the lung by a blood clot (lung embolism), high blood pressure (hypertension), and inflammation of a vein due to clot formation (thrombophlebitis). On occasion, removal of the uterus (hysterectomy) must be performed if there is uncontrolled bleeding, uterine infection, or cancer. With general anesthesia comes the risk of inhalation of stomach contents (aspiration) that can cause inflammation of the lungs (pneumonitis). Fewer than 1 in 1,000 cesarean deliveries result in maternal death. Many of these deaths result from an underlying illness or complications associated with anesthesia. Depression may develop following childbirth.

Long-term complications may include scar tissue (adhesions) that can cause intestinal blockage (obstruction), incisions that open (dehiscence) post-operatively, and uterine rupture during subsequent labor. The incidence of uterine rupture during vaginal birth after cesarean is as high as 10% with the classical (vertical) type of uterine incision (Sehdev). Uterine rupture can be life-threatening for both the mother and the fetus.

Fetal complications include an increased incidence of respiratory distress syndrome and incomplete lung expansion (atelectasis).

Factors Influencing Duration

Recovery may be prolonged if the mother's general health is poor or if medical or psychological complications develop.

Length of Disability

Disability duration depends on job requirements.

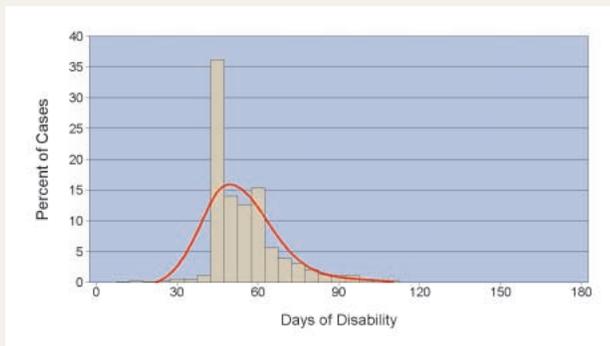
Surgical treatment, cesarean delivery.

DURATION IN DAYS			
Job Classification	Minimum	Optimum	Maximum
Sedentary	28	42	42
Light	28	42	42
Medium	28	42	42
Heavy	42	49	56
Very Heavy	42	49	56

Reference Data

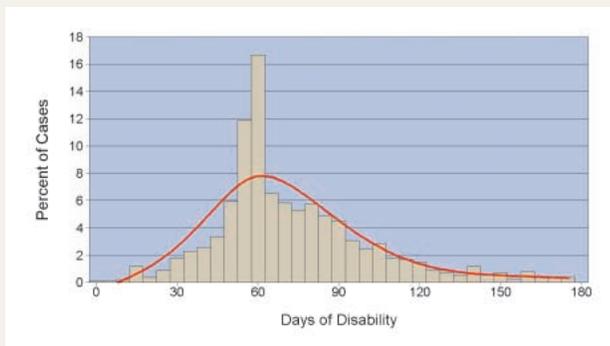
DURATION TRENDS - ICD-9-CM: 669.7

Cases	Mean	Min	Max	No Lost Time	Over 6 Months	Percentile:	5th	25th	Median	75th	95th
3506	53	1	107	0%	0%	Days:	42	43	49	58	79



DURATION TRENDS - ICD-9-CM: 74, 74.0, 74.9, 74.99

Cases	Mean	Min	Max	No Lost Time	Over 6 Months	Percentile:	5th	25th	Median	75th	95th
1133	71	0	213	0.1%	0.1%	Days:	32	55	63	85	132



Note: Differences may exist between the duration tables and the reference graphs. Duration tables provide expected recovery periods based on the type of work performed by the individual. The reference graphs reflect the actual experience of many individuals across the spectrum of physical conditions, in a variety of industries, and with varying levels of case management. Selected graphs combine multiple codes based on similar means and medians.

Return to Work

Stair climbing, lifting, and driving may be temporarily restricted after cesarean section, usually for less than a week. Accommodations may also include less strenuous or slower-paced work, part-time work, and/or frequent rest periods. Flexible hours, job sharing, and on-site childcare are useful for many new mothers. Mothers who are breastfeeding may require additional break time and a private room in which to breastfeed their infant or pump (express) breast milk. The vast majority of women who have uncomplicated pregnancy and cesarean delivery recover to modified work capacity by 6 weeks postpartum.

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