A caesarean section is a surgical procedure in which incisions are made through a woman’s abdomen and uterus to deliver her baby. Caesarean sections, also called c-sections or caesarean deliveries, are performed whenever abnormal conditions complicate labor and vaginal delivery, threatening the life or health of the mother or the baby. Caesarean section is one of the most commonly performed major abdominal operations in women in both affluent and low-income countries. Global estimates indicate a caesarean section rate of 15% worldwide, ranging from 3.5% in Africa to 29.2% in Latin America and the Caribbean. Studies from the United States of America, the United Kingdom and China report rates between 20% and 25%. Before 1970, caesarean section rates in most middle- to high-income countries ranged between 3% and 5%.

There are many possible ways of performing a caesarean section. A study of obstetricians in the UK found a wide variation in techniques. For elective surgery more than 80% used the Pfannenstiel abdominal entry and double-layer uterine closure. For emergency surgery, more used the Joel-Cohen abdominal entry. A North American survey of Obstetric and Gynaecologic residents found that 77% use a Pfannenstiel incision for urgent or emergency caesarean sections, 55% use single-layer closure of the uterine incision, 37% use double-layer closure, while 11% use single-layer closure only in women undergoing concomitant sterilization.

The techniques used may depend on many factors including the clinical situation and the preferences of the operator. Caesarean section is often performed as an emergency procedure after hours when senior staff may not be immediately available. It is important that all those who perform this operation use the most effective and safe techniques, as determined by a systematic review of randomised trials. India is also not excluded from this trend. Though the estimates of CS rates in India is 7.1 per cent in the year 1998 and there is 16.7 per cent change in the rates annually in India. The high rate of caesarean section does not always suggest that there is a good health care utilization; rather it may suggest malpractice of the technique, which indirectly relates to the unnecessary maternal morbidity. DHS data showed that in developing countries, one in eight births were delivered by caesarean section, which accumulated to nearly about 14 million surgeries. It is also found that the urban rates are three times higher than the rural rates. High percent of births by caesarean section in the private sector is alarming and could implicate private sector care as the main contributing factor behind the high population caesarean section rates.

These C-sections may be elective or emergency procedures (usually during labour). Common reasons for carrying out caesarean section include:
1. Failure to progress in labour
2. Suspected fetal distress
3. Previous uterine surgery
4. Very low birthweight
5. Fatal malpresentation (e.g. breech, transverse lie)
6. Placenta praevia
7. Placental abruption
8. Multiple pregnancy
9. Suspected fetopelvic disproportion
10. Cord prolapse
11. Severe pre-eclampsia, HELLP syndrome or eclampsia
12. Maternal infections (e.g. HIV, active Herpes simplex)
13. Mother’s choice

Preoperative preparation includes clinical assessment; blood tests such as haemoglobin, Rh group and antibody screen, testing for syphilis and HIV, and blood compatibility testing in high risk cases; anaesthetic assessment; oral intake restriction when caesarean section is anticipated; antibiotic prophylaxis; and antiretroviral prophylaxis for HIV-positive women. Preparedness includes the ability to arrange emergency caesarean sections within a limited time (e.g. 30 minutes). Regional analgesia (spinal and epidural) has largely replaced general anaesthesia in many services.

The skin incision may be vertical (midline or paramedian) or transverse lower abdominal (Pfannenstiel, Joel-Cohen, Pelosi, Maylard, Mouchel or Cherney). For very obese women, a transverse incision above the umbilicus has been suggested, but not shown to decrease morbidity.

Postoperative care includes regular checking of vital signs and urine output, and for signs of uterine relaxation and haemorrhage. Restricting oral intake has not been found to be of benefit. Analgesia, Early mobility, skin-to-skin contact with the baby and breastfeeding are encouraged.

C-sections are relatively safe, but they are major surgery. So, by definition, they are riskier than vaginal deliveries. Apart from regular complications of surgery, postpartum endometriosis, ruptured uterus, ruptured uterus, neonatal respiratory distress may occur.

Unnecessary caesarean sections are those which are done without there being a medical indication. Consequences of unnecessary caesarean sections are of two types: (i) iatrogenic maternal and neonatal morbidity and mortality; and (ii) increased costs for the health system and for the household in settings where there is no social protection. The latter is of particular importance in middle- and low-income countries where catastrophic expenditures can occur following a caesarean section. There is worldwide debate about the appropriateness of caesarean sections performed without medical indications. Caesarean sections performed appropriately and following an appropriate medical indication are potentially life-saving procedures. In this context, the provision of timely and safe caesarean sections in high maternal mortality countries is a major challenge faced by local health systems. At the same time, in many settings, women are increasingly undergoing caesarean sections without any medical indication which may contribute to the worldwide secular trend towards higher rates of caesarean sections. Over the last two decades, there has been a debate about the appropriateness of caesarean sections performed due to maternal request or following the indication of health care professionals but without a clear medical reason for this surgical procedure. Safety, costs, women's rights and wishes, maternal and professional satisfaction have been elements of this debate. A factor that certainly favoured the liberalization of caesarean section in clinical practice has been the perception of caesarean section as a generally safe procedure, despite the increased costs associated with it. However, the assessment of the intrinsic risk of caesarean sections is complicated by substantial limitations. In this context, the World Health Organization Global Survey on Maternal and Perinatal Health (WHOGS) provides evidence on the relationship between mode of delivery and maternal and perinatal outcomes. The WHOGS is a large cross-sectional study conducted in 24 countries around the world between 2004 and 2008. The objectives were to assess the risks and benefits associated with caesarean delivery compared with vaginal delivery. Women undergoing caesarean delivery had an increased risk of severe maternal morbidity compared with women undergoing vaginal delivery (odds ratio 2.0 (95% confidence interval 1.6 to 2.5) for intrapartum caesarean and 2.3 (1.7 to 3.1) for elective caesarean). The risk of antibiotic treatment after delivery for women having either type of caesarean was five times that of women having vaginal deliveries. With cephalic presentation, there was a trend towards a reduced odds ratio for fetal death with elective caesarean,
after adjustment for possible confounding variables and gestational age (0.7, 0.4 to 1.0). With breech presentation, caesarean delivery had a large protective effect for fetal death. Caesarean sections were associated with an intrinsic risk for short-term severe maternal outcomes. Overall, this risk was higher in African countries than in Asia or Latin America.

Second opinion has been proposed as an intervention to decrease CS rates. Second opinion refers to a doctor needing the agreement of another usually more senior second opinion before a decision for CS can be made. Caesarean sections should be performed when a clear benefit is anticipated, a benefit that might compensate for the higher costs and additional risks in the context of the specific setting where the operation is taking place. This additional risk should be considered by health care professionals and patients when deciding the mode of delivery. In the end, the main challenge related to caesarean sections is making the best use of this procedure, which is certainly an important resource for the reduction of maternal mortality, but of which overuse may be associated with an increased risk of severe maternal outcomes.

References: