

Death rates from cesarean section far higher in developing countries

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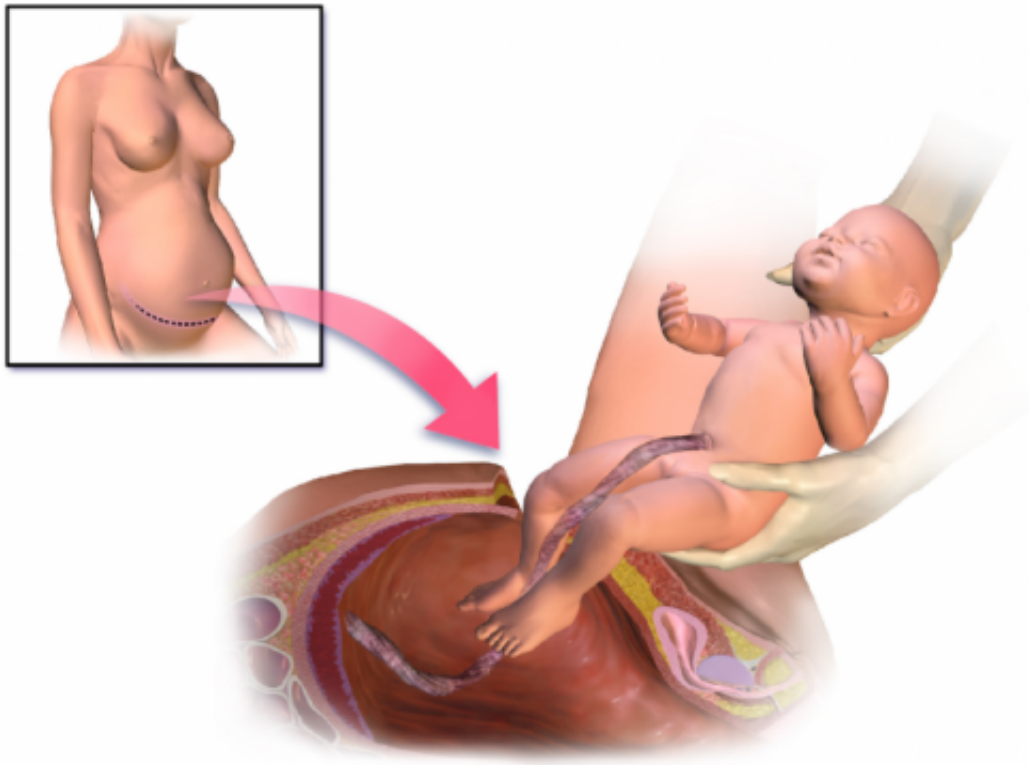


Illustration depicting Caesarean section. Credit: BruceBlaus/Wikipedia/CC BY 3.0

Caesarean sections are disproportionately threatening the lives of women and babies in low and middle-income countries (LMIC), according to a study led by Queen Mary University of London.

The analysis of data from 12 million pregnancies, published in *The Lancet*, finds that [maternal deaths](#) in LMICs are 100 times higher than in some [high-income countries](#), and a third of all babies in some regions do not survive [caesarean section](#).

First author Dr. Soha Sobhy from Queen Mary University of London said: "To our knowledge, this is the largest and most comprehensive study to-date on the risks of death following caesarean section. The outcomes for women in low and [middle-income countries](#) are far worse than we expected.

"In sub-Saharan Africa, one in 100 women who has a caesarean section will die—100 times more than women in the UK. The outcomes for their babies are even worse, with eight per cent not surviving longer than a week."

Lead author Professor Shakila Thangaratinam from Queen Mary University of London added: "Caesarean sections are the most commonly performed operation worldwide. They are meant to be life saving for both mother and baby, but because of many factors, such as poor access, late referrals, inappropriate procedures, poor resources and training, this is not always the case.

"Now that we know the risk factors and countries associated with poor outcomes, we can make a more targeted effort to improve conditions for mothers globally, so that timely and safe caesarean sections can be done wherever they are needed."

Every year 300,000 women die during childbirth, 99 per cent of which are from LMICs. Timely access to caesarean section when needed is required for safe childbirth, but procedures are being performed 'too little, too late', or 'too many, too soon'.

The analysis looked at data from 196 studies from 67 LMICs, covering 12 million pregnancies, and found that:

- The risk of maternal death in women in LMICs undergoing caesarean section was 7.6 per 1,000 procedures—around 100-fold higher than the UK (8/100,000)
- The highest burden was in sub-Saharan Africa (10.9/1,000)
- The overall rate of stillbirth in babies born by caesarean section was 56.6 per 1,000, with the highest rates in sub-Saharan Africa (82.5/1,000)
- The perinatal death rate (stillbirths and deaths in the first week of life) was 84.7 per 1,000 caesarean sections, with the highest rates in Middle East and North Africa (354.6/1,000)
- A quarter of all women in LMICs who died while giving birth had undergone caesarean section (23.8 per cent)
- Women undergoing emergency caesarean section in LMICs were twice more likely to die than those delivering by elective caesarean section. The odds were increased 12-fold when caesarean section was performed in advanced labour at full dilatation of the cervix (second stage) than in the first stage
- Perinatal deaths were increased 5-fold with emergency vs. elective caesarean sections, and 10-fold when undertaken in the second vs. first stage of labour
- Maternal death rates were particularly high in countries with very low caesarean section rates, highlighting the problems with too little access, too late
- A third of all deaths following caesarean section were attributed to postpartum haemorrhage (32 per cent), pre-eclampsia (19 per cent) and sepsis (22 per cent), and 14 per cent to anaesthesia related causes.

Based on these findings, the researchers are calling on [policy makers](#) and healthcare professionals to improve access to surgery, promote

appropriate use of the procedure, provide safe surgical environments, and increase neonatal resuscitation to help improve outcomes to babies.

The team also highlight that training in labour management needs to cover why caesarean sections are carried out, in order to reduce inappropriate caesarean sections, and promote a reduction in caesarean sections performed in the second stage of labour, which are the most risky.

The finding that postpartum haemorrhage was the commonest cause of maternal [death](#) following caesarean section, highlights gaps in resource and skills to manage massive obstetric haemorrhage, and a need for specific training in this area.

The work was carried out at Barts Research Centre for Women's Health, based at Queen Mary University of London, funded by Barts Charity, and in collaboration with the World Health Organization.

Francesca Gliubich, Director of Grants at Barts Charity said: "The Barts Research Centre for Women's Health is undertaking many important studies and Barts Charity are proud to fund their work. This latest research will help to inform global health policies around Caesarean sections and help to avoid the preventable deaths of both mothers and babies."

The study was also funded by the National Institute for Health Research (NIHR), Ammalife Charity and the ELLY Appeal. The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

The findings are limited by the differences in the characteristics of population and the team could not adjust for underlying obstetric and socio economic factors. It was also not possible to determine if the

adverse outcomes following caesarean section were due to the procedure or from a pre-existing risk factor. Very few studies were published in some regions such as Europe and central Asia and Middle East and North Africa, and may affect the generalisability of the findings.

More information: Maternal and perinatal mortality and complications associated with caesarean section in low and middle-income countries: A systematic review and meta-analysis of 12 million pregnancies, *The Lancet* (2019). [DOI: 10.1016/S0140-6736\(18\)32386-9](https://doi.org/10.1016/S0140-6736(18)32386-9), [www.thelancet.com/journals/lan ... \(18\)32386-9/fulltext](http://www.thelancet.com/journals/lan... (18)32386-9/fulltext)

Provided by Queen Mary, University of London

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