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EDITORIAL

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Introduction

Cesarean section (CS) is one of the most commonly performed surgical procedures worldwide and, a life-saving intervention for both mother and newborn when medically indicated. However, the global surge in CS rates well beyond clinically justifiable thresholds has raised serious public health concerns. According to the World Health Organization (WHO), CS rates between 10% to 15% are considered optimal at the population level; beyond this threshold, no additional benefit to maternal or neonatal survival has been demonstrated.[1] Despite this evidence, CS rates have nearly doubled globally over the past two decades, climbing from approximately 16 million in 2000 to 29.7 million in 2020.[2]

Bangladesh presents one of the most alarming CS trajectories in South Asia. The prevalence of CS rose from a mere 2.9% in 1999 to 45% in 2022 — a nearly 15-fold increase within a generation.[3,4] This escalating trend represents not simply a clinical phenomenon but a profound public health failure, driven by a complex interplay of socio-cultural, economic, institutional, and systemic factors.

Magnitude of the Problem: A Rapidly Rising Trend

Bangladesh's CS transition over the past two decades is among the steepest in the world. National data from successive Bangladesh Demographic and Health Surveys (BDHS) document a steady and unrelenting rise: 3.99% in 2003–04, increasing to 33.22% in 2017–18, with an alarming annual percentage change of 16.34%.[5] By 2022, the BDHS Key Indicators Report placed the national CS rate at 45% — more than threefold the WHO's recommended ceiling.[6,4]

Study shows urban-rural and socioeconomic disparities in CS rate. Among urban mothers it stands at 36.9% compared to 17.9% in rural areas.[4] Wealth quintile analysis reveals that CS rates among the richest households reached 61.5% in 2017, while rates among lower-income quintiles have also risen substantially.[7] Geographically, Dhaka division has consistently recorded the highest rates, though variation across all eight divisions has been observed.[3]

Compared to regional neighbors, Bangladesh's rates are strikingly disproportionate. India and Pakistan each report CS rates of approximately 14%, and Nepal remains at approximately 4%.[4] These comparisons underscore that Bangladesh's CS surge is not simply a function of improved access to health facilities, but reflects structural and commercial distortions within its health system.

Drivers of the Rising CS Rate

The determinants of CS in Bangladesh are multifactorial, spanning individual, provider, institutional, and systemic levels.

1. *Private sector and commercial incentives:* The most consistent and compelling driver of unnecessary CS in Bangladesh is the profit-driven private sector. Approximately 50% of institutional deliveries occur in private facilities, where CS rates are reported as high as 83%.[8] Women who receive antenatal care from private facilities are significantly more likely to deliver by CS, regardless of clinical indication. Research has documented that agents and intermediaries receive financial incentives to transfer patients from public to private facilities for CS delivery.[9] A

community-pressure study found that women delivering in private facilities were 8.16 times more likely to undergo CS compared to those in public facilities.[3]

2. *Excluded decision-making and informed consent:* Qualitative evidence indicates that pregnant women and their families are frequently excluded from the decision-making process for CS. Physicians and the male breadwinner of the family are often identified as primary decision-makers, while women themselves remain uninformed about the risks of unnecessary CS.
3. *Socioeconomic and demographic correlates:* Higher maternal education, advanced maternal age, higher parity history, elevated BMI, and higher household wealth are consistently associated with CS delivery across multiple BDHS cycles.[5,7] Urban mothers from the richest quintile face an adjusted odds ratio of 4.79 (95% CI: 3.13–7.34) for CS compared to their counterparts from the poorest quintile.[10]
4. *Fear of labor pain and preference for convenience:* Convenience and avoidance of labor pain account for approximately 9.3% of reported CS indications — a proportion that is clinically indefensible.[11] Community-level CS prevalence itself functions as a peer-influence factor: women residing in communities with high CS prevalence are 11.68 times more likely to undergo CS than those in low-CS communities.[3]
5. *Preceding CS as an indication:* Previous CS is now one of the leading indications for repeat CS in Bangladesh, cited in 22.9% to 29.4% of cases across different studies.[11] This self-perpetuating cycle — wherein the first CS makes subsequent vaginal delivery less likely — means that the long-term consequences of today's unnecessary CS rates will continue to unfold for decades.

Consequences: Clinical, Economic, and Systemic

The implications of Bangladesh's CS surge extend across clinical, economic, and systemic dimensions.

1. *Maternal and neonatal risks:* CS without medical indication is associated with significantly greater short- and long-term risks for mothers, including surgical site infections, hemorrhage, blood clots, placenta accreta in future pregnancies, pelvic pain, prolonged hospital stays, and higher rates of rehospitalization.[12,11] Evidence suggests that CS delivery can cause two to four times higher maternal mortality than vaginal delivery when performed without clinical necessity.[10] Neonatal complications include preterm birth risk and disrupted microbiome colonization.
2. *Economic burden:* The total out-of-pocket cost of CS delivery is approximately ten times higher than home delivery at the facility level.[4] Analysis from BDHS data confirms that the ever-increasing CS rate creates a compounding economic burden on Bangladeshi families, particularly those in lower wealth quintiles who increasingly access private facilities.[13] At the national level, unnecessary CS represents a massive misallocation of scarce healthcare resources.
3. *Scale of unnecessary procedures:* Save the Children Bangladesh estimated that 571,872 of the 820,512 CS procedures performed nationwide in 2016 were medically unnecessary.[5] A subsequent analysis indicated that approximately 860,000 unnecessary CS were conducted in 2018 alone — more than 6 in every 10 CS deliveries — highlighting the scale of the public health failure.[5]
4. *SDG alignment:* Bangladesh has committed to achieving Sustainable Development Goal (SDG) 3, including a maternal mortality ratio of less than 70 per 100,000 live births by 2030. The unchecked rise in unnecessary CS directly undermines this commitment, as it increases avoidable maternal morbidity and mortality while exacerbating inequities in access to quality maternity care.[4]

Policy Imperatives and Recommendations

Addressing Bangladesh's CS crisis demands a coordinated, evidence-informed response across regulatory, clinical, community, and health system levels. We propose the following priority actions:

1. *National regulatory framework:* Bangladesh urgently requires a national clinical guideline and regulatory framework governing CS utilization, with mandatory audit mechanisms for public and private facilities alike. The Ministry of

Health and Family Welfare must enforce facility-level CS rate reporting and establish accountability systems for non-clinically indicated procedures.

2. *Robson classification monitoring:* Adoption of the WHO Robson Ten-Group Classification System for monitoring and benchmarking CS rates across facilities would enable standardized, comparable data for policy evaluation and allow targeted interventions.
3. *Private sector oversight:* Given that CS rates in private facilities reach 83%,[8] regulatory bodies must conduct independent audits of CS indications in private hospitals and clinics. Financial disincentives for unindicated CS and reimbursement parity for skilled vaginal delivery should be explored.
4. *Community awareness and demand-side interventions:* Mass public health communication campaigns must counter the normalization of CS as a preferred mode of delivery. Antenatal care platforms should be leveraged to provide structured, evidence-based counseling to women and their families about the risks of medically unnecessary CS and the benefits of vaginal birth.
5. *Strengthening women's autonomy and informed consent:* Healthcare providers must be legally and ethically required to obtain genuine informed consent for CS, fully disclosing risks, alternatives, and clinical rationale. Policies promoting respectful maternity care and women-centered decision-making must be institutionalized.
6. *Workforce training and skilled birth attendants (SBAs):* Expanding midwifery services and training obstetricians in evidence-based labor support will reduce fear-driven CS. Dedicated support for skilled vaginal delivery in both public and private sectors is essential.

Conclusion

The rising trend of cesarean section in Bangladesh has crossed from a clinical concern to a public health emergency. Bangladesh's CS rate is threefold of the WHO-recommended threshold, driven not by clinical necessity but by systemic commercial pressures, socioeconomic inequities, weakened regulatory oversight, and community-level normalization. A rights-based, evidence-driven, and systemically accountable approach to maternity care, placing women at the center of decision-making and the state as a guarantor of safe and appropriate care — is not simply a clinical aspiration but a moral and public health imperative. Elimination of unnecessary CS needs to be addressed as a prime agenda in the maternal and child health by actionable plans by the policy makers, administrators, health professionals and relevant stakeholders across the region.

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