

# Optimizing rates and access to Caesarean sections in India: A cost-effectiveness analysis

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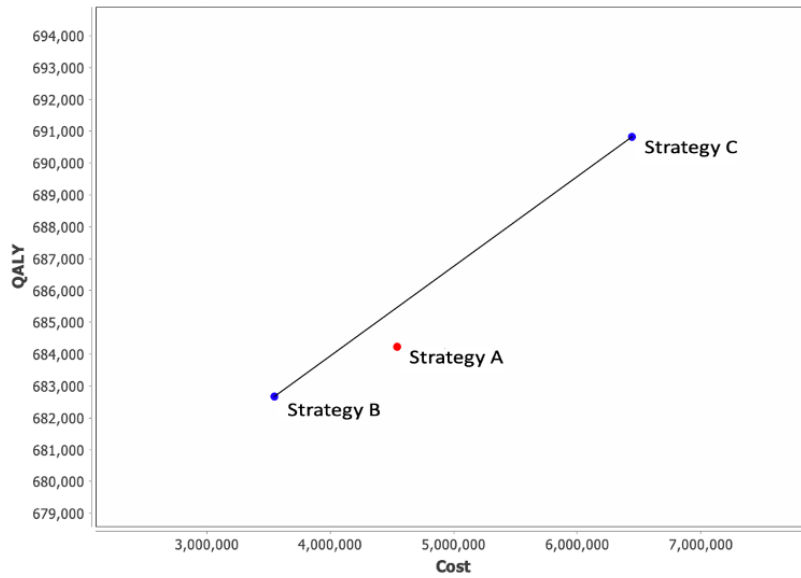
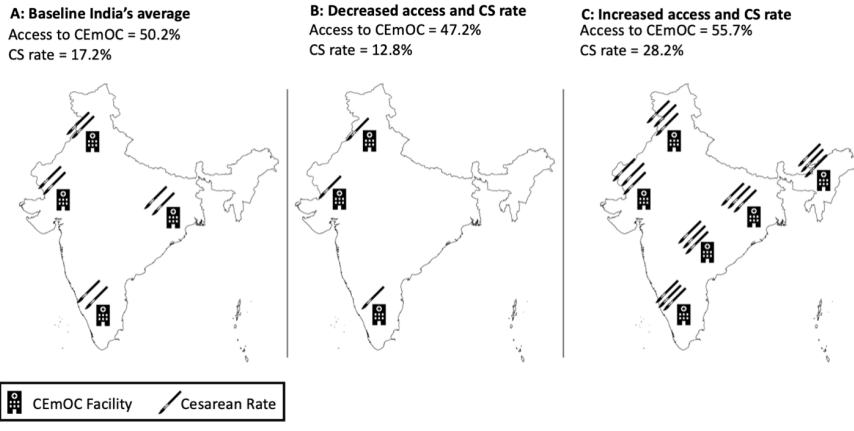
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## Abstract

**Objective:** Assessment of the cost-effectiveness of strategies to scale up cesarean sections (CS) **Design:** Cost-effectiveness analysis to evaluate three different strategies to scale up CS **Setting:** Rural and urban areas of India with varying rates of CS and access to comprehensive emergency obstetric care (CEmOC) **Population:** Women of reproductive age in India **Methods:** Three strategies with different access to CEmOC and CS rates were evaluated: (A) India's national average (50.2% access, 17.2% CS rate), (B) rural areas (47.2% access, 12.8% CS rate) and (C) urban areas (55.7% access, 28.2% CS rate). We performed a first-order Monte Carlo simulation using a 1-year cycle time and 35-year time horizon. All inputs were derived from literature. A societal perspective was utilized with a willingness-to-pay threshold of \$1,940. Main outcome measures: Costs and quality-adjusted life years were used to calculate the incremental cost-effectiveness ratio (ICER). Maternal and neonatal outcomes were calculated. **Results:** Strategy C with the highest access to CEmOC despite the highest CS rate was cost-effective, with an ICER of 354.90. Two-way sensitivity analysis demonstrated this was driven by increased access to CEmOC. The highest CS rate strategy had the highest number of previa, accreta and ICU admissions. The strategy with the lowest access to CEmOC had the highest number of fistulae, uterine rupture, and stillbirths. **Conclusions:** Morbidity and mortality result from lack of access to CEmOC and overuse of CS. While interventions are needed to address both, increasing access to surgical obstetric care drives cost-effectiveness and is paramount to optimize outcomes.

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Strategy	Cost (USD)	QALY	ICER
<b>B: Data from Rural India</b> Access to CEmOC: 47.2% CS Rate: 12.8%	3,547,844	682,670	5.20
<b>A: Data from national average</b> Access to CEmOC: 50.2% CS Rate: 17.2%	4,541,842	684,229	Dominated
<b>C: Data from Urban India</b> Access to CEmOC: 55.7% CS Rate: 28.2%	6,442,120	690,825	354.90

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