



### ■ Summary Brief

## UNDERSTANDING THE DYNAMICS BEHIND CESAREAN SECTION PROCEDURES IN PRIVATE AND PUBLIC SECTOR HEALTH FACILITIES

### Multi-Country Analysis of Secondary Data From Service Provision Assessments and Demographic and Health Surveys

Safe cesarean section (CS) is an integral component of strong primary health care systems, saving the lives of millions of women and their newborns worldwide. However, CS operations are not always done for the right reasons, in a safe manner, or in facilities that are well equipped to provide high-quality care for women and neonates. This brief highlights key findings and implications from a [multi-country secondary analysis](#) of service provision assessments and demographic and health surveys made publicly available regarding CS births in the public and private sectors in low- and middle-income countries (LMICs).

## Background on Cesarean Section

CS is major surgery requiring high-quality obstetric care and anesthesia to avoid adverse consequences for women and newborns, including increased risk of complications in subsequent pregnancies. When indicated, CS can prevent maternal and neonatal mortality and morbidity. Global CS rates are rising rapidly—currently constituting 21% of all live births and estimated to reach 29% by 2030. If the current trends continue, by 2030, the highest rates are likely to be in Eastern Asia (63%), Latin America and the Caribbean (54%), Western Asia (50%), Northern Africa (48%), Southern Europe (47%), and Australia and New Zealand (45%).<sup>1</sup> There is limited understanding about the dynamics of CS operations across public and private sector facilities in LMICs and the relative contribution of the private sector in driving CS rates in LMICs. The World Health Organization (WHO) recommends reducing unnecessary and non-medically indicated CS.

Safe obstetric surgery is an essential component of strong primary health care systems, but lack of access to safe cesarean sections in some places, together with excessive use of cesareans in other places, often without the necessary capacity to provide safe and appropriate care for women and babies, is harmful. Focused efforts are needed to ensure quality, safety and appropriateness of safe cesareans.

## What did we do?

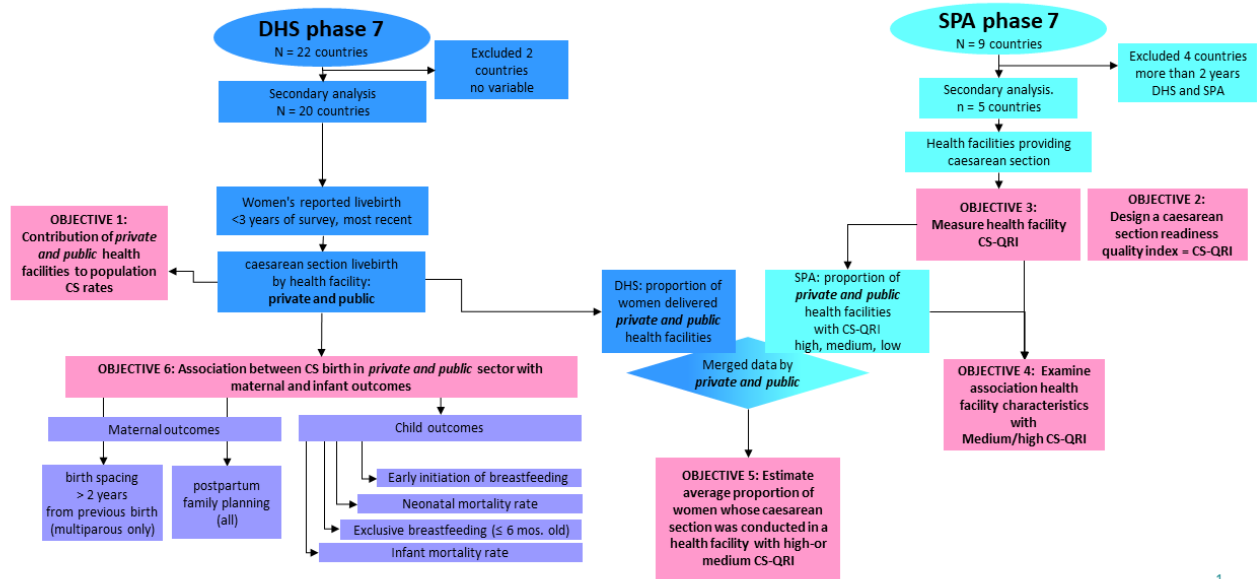
MOMENTUM Private Healthcare Delivery (MOMENTUM) and the London School of Hygiene & Tropical Medicine conducted a multi-country secondary analysis of CS births using publicly available, nationally representative survey data: Demographic and Health Survey (DHS), household data, and Service Provision Assessment (SPA) health facility data. Both were publicly available from the DHS Program.<sup>2</sup> This DHS dataset included data from DHS Phase 7 and used the [Woman's Questionnaire](#), where interviews with women of reproductive age (15–49 years) included questions on fertility, voluntary family planning, maternal and child health, and most recent live births reported by women in the three years preceding the survey. We linked these DHS data to SPA Survey datasets conducted within the past two years of the DHS, which captured the availability and readiness of health services at different types of health facilities. We selected all available DHS and SPA Phase 7 data within the last 10 years. Study Objectives 1 and 6 used DHS data alone; Objectives 2, 3, and 4 used SPA data alone. Objective 5 linked DHS and SPA survey datasets to minimize the effect of changing health facility dynamics over time. The study flowchart is illustrated in Figure 1 below.

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<sup>1</sup> Betran AP et al. 2021. “Trends and projections of cesarean section rates: global and regional estimates.” *BMJ Global Health* 6:e005671.

<sup>2</sup> DHS Program, “DHS Overview.” <https://dhsprogram.com/Methodology/Survey-Types/DHS.cfm>

**Figure 1:** Flowchart of SPA and DHS data included by study objective for secondary analysis to understand the dynamics behind CS procedures in private and public sector health facilities.



## FINDINGS

CS population rates varied widely by region, with lower rates in sub-Saharan Africa (2.3%–16.8%), and higher rates in Asia (10.0%–33.8%). The private sector’s relative contribution to population CS rates showed large differences by country: The lowest rate (5.3%) was found in Burundi and the highest (79.7%) in Bangladesh.

### DHS analysis from 20 countries:

Although WHO no longer recommends an optimal population CS rate, the persistent large differences in CS rates by region, country, and health sector suggest ongoing under- and over-use of CS. We explored the associations between CS birth in the private and public sectors for women and infants. We found no differences in newborn and infant mortality rates among CS births between the public and private sectors. However, recommended maternal and newborn care practices among private sector compared to public sector CS births were substantially lower for birth spacing and significantly lower for voluntary postpartum family planning and early and exclusive breastfeeding.

### SPA analysis from five countries:

We designed a novel cesarean section quality readiness index (CS-QRI) composite measure using 45 SPA data items across four WHO quality-of-care domains (evidence-based practices, actionable information systems, competent human resources, and essential physical resources) to categorize public and private sector health facilities into high, medium, and low CS quality readiness.

- In general, health facility CS-QRI was low: high-quality readiness was found in less than 11% of facilities and medium-quality readiness less than 48%. Private and public sectors both contribute to the CS readiness quality gap.
- The drivers for lower CS quality item availability across all countries and sectors included the extent to which there was consistent electricity, access to blood transfusion services, health professional training in the last 24 months, and availability of personal protection equipment especially eye protection.

### Combined DHS and SPA analysis from five countries:

The probability that a CS birth took place at a facility with high or medium CS quality readiness varied among these countries: 28% in Malawi, 13% in Tanzania, 7% in Haiti, 4% in Nepal, and 1% in Bangladesh.

## Study Implications

### Implications for programs:

- The study found that most CS births are taking place in facilities that are not capable of providing high-quality care for women and babies. As institutional births increase worldwide, multi-sectoral health system strengthening approaches are needed across both private and public sectors to improve the quality of care before, during, and after birth to improve maternal and perinatal outcomes.
- Population CS rates in 20 LMICs explored in this study showed wide variation, with the private sector acting as a major driver for the increasing rates. Focused efforts are urgently needed to optimize CS rates to ensure they are not “too much, too soon” and “too little, too late.”
- When birth by CS is indicated, health facilities need to be ready across all domains of quality to ensure optimal safety, experience, and outcomes for women and newborns. This study has highlighted that most health facilities providing CS, in both private and public sectors, demonstrate a major gap for readiness across multiple quality domains.
- The main drivers for low quality for CS are consistent electricity, access to blood transfusion service, health professional training in the last 24 months, and availability of personal protective equipment, especially eye protection.
- Action is needed to strengthen recommended postnatal care practices of family planning, birth spacing, and early and exclusive breastfeeding after CS birth—all of which are substantially lower in the private sector.

### Implications for future research:

- This report highlights novel analyses for CS births that can be achieved using data in the public domain and replicated for other country settings.
- The CS-QRI composite measure captures four quality domains related to CS births, captured in SPA Phase 1 surveys. The measure could be adjusted for future SPA Phase 2 surveys, ideally including all eight quality domains.

- Maternal and newborn process and outcome measures in the DHS are limited; therefore, it is important to strengthen routine data sources; provision and experience of care, including referrals; and equity.
- Further implementation research is needed to identify effective ways to optimize high-quality CS in both the private and public sectors. Other research has indicated some promising approaches including mentorship and supervision, use of the safe surgery checklist, review and audits of labor and birth records, setting of institutional targets and goals, and health financing interventions.
- Special, in-depth studies are recommended to explore the complexity of CS births such as MOMENTUM’s ongoing and linked study in Indonesia.



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Cover photo: A woman undergoes a cesarean section in the surgical unit of Eastern Regional Hospital in Accra, Ghana. Credit: Kate Holt | 2016.

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