

Primary Health Care Facilities in Sub-Saharan Africa Found to Provide Poor Basic Maternal Care

The quality of basic maternity care in primary care facilities—where a substantial proportion of deliveries in many low-income countries take place—is much lower than that in secondary care facilities, according to an analysis of data from five Sub-Saharan African countries.¹ In both types of facilities, greater delivery volumes were associated with higher scores on an index of quality of care. However, primary care facilities—even those with the highest delivery volume—had lower quality-of-care scores than secondary care facilities, and frequently lacked even such basic elements of infrastructure as electricity.

Efforts to reduce maternal mortality in developing countries often have focused on increasing the proportion of births that take place in facilities; however, improving the quality of obstetric care has received less attention from policymakers and researchers. Because studies from high-income countries have found that maternal outcomes tend to be worse at facilities with lower delivery caseloads, the authors of the current study examined the relationship between delivery volume and quality of care in five low- and middle-income Sub-Saharan African countries (Kenya, Namibia, Rwanda, Tanzania and Uganda). All five had maternal mortality rates far higher than the Sustainable Development Goal target of 70 deaths per 100,000 live births; Namibia, the only middle-income country in the group, had by far the lowest maternal mortality rate (130 per 100,000, compared with 320–410 per 100,000 in the other countries) and the highest proportion of deliveries in facilities (87% vs. 50–69%).

The analysis used data from service provision assessment surveys conducted between 2006 and 2010 as part of the Demographic and Health Survey program. The surveys collected information on facility characteristics and services through standardized questionnaires and through structured interviews of health care workers; for each country, the sample of facilities either was nationally representative or included nearly all facilities in the health system.

Analyses examined secondary care facilities—those with the capacity to perform caesarean deliveries—separately from primary care facilities. The researchers used a categorical variable for annual delivery volume, although to account for differences in capacity the category thresholds were smaller for primary facilities (from ≤ 52 to > 500) than for secondary facilities (from ≤ 500 to $> 4,000$). Assessing quality of care was trickier; although maternal mortality is often used as an indicator of quality, this approach can be misleading unless analyses adjust for the greater severity of cases typically treated by higher-level facilities. Because severity data were unavailable, the researchers created a 12-item index of quality of maternal care that indicated the number of basic care elements provided at each facility. Items ranged from simple structural indicators (e.g., the availability of electricity and safe water) to process indicators that assessed whether the facility had the capacity to perform certain procedures (e.g., to remove retained products of conception) or had performed specified procedures in the past three months (e.g., manual removal of placenta). For each facility, the number of items was converted to a score ranging from 0 to 1. Covariates used in the analyses included sector (public vs. private), capacity to provide antiretroviral therapy (ART) and number of staff per bed. In addition to providing descriptive statistics, the researchers created scatter plots to visualize the relationship between delivery volume and quality of care, and conducted logistic regression analyses to adjust for covariates and country fixed effects.

The analytic sample consisted of 1,715 facilities that performed deliveries and provided data on delivery volume. Twelve percent of facilities were secondary care facilities; 28% were private facilities, and 25% provided ART services. Not surprisingly, caseloads differed by facility type; for example, 73% of secondary care facilities, but only 15% of primary care facilities, performed more than one delivery per day, on average. Nonetheless, 44% of births occurred at primary care facilities,

and 32% occurred at facilities that performed fewer than 500 deliveries per year.

Mean quality-of-care scores were higher at secondary care facilities than at primary care facilities (0.77 vs. 0.38). Moreover, for all 12 individual indicators, the proportion of facilities reporting capacity or provision was greater for secondary care than for primary care facilities; differentials were especially large for provision of electricity (66% vs. 11%) and administration of magnesium sulfate for eclampsia or preeclampsia in the past three months (56% vs. 9%). However, as the electricity data illustrate, even secondary facilities often lacked basic infrastructure.

Scatter plots and regression analyses showed that quality of care was positively associated with delivery volume. For example, among secondary care facilities, adjusted quality-of-care scores were 0.17 points higher for facilities that had more than 4,000 deliveries per year than for those that had 500 or fewer. Facilities with intermediate delivery volumes also had lower quality-of-care scores than did the highest-volume facilities, though the differentials were smaller (0.03–0.09).

A similar pattern was evident for primary care facilities: On average, those with the highest volume had scores 0.22 points greater than those of the lowest-volume facilities. However, even primary care facilities with the highest delivery volume had lower scores on average than the secondary care facilities that performed the fewest deliveries, suggesting, according to the authors, that “a high birth volume cannot compensate for absence of surgical capacity and associated competencies.”

At both primary care and secondary care facilities, quality of care was positively associated with provision of ART and was slightly higher at private facilities than at public facilities. Staffing levels were positively associated with quality of care as well, but only at primary care facilities.

The authors acknowledge several limitations of their analysis, including its reliance on self-reported data and the lack of

information on mortality and potentially important aspects of care quality (e.g., provider skill). Nonetheless, they conclude that the low quality-of-care scores among even the highest-volume primary facilities “[call] into question the ability of primary care facilities to consistently provide safe maternal care.” To address the problem, countries must “systematically assess” the quality and context of their health system’s delivery care. The researchers

note that one potential strategy for reducing maternal mortality—ensuring timely referral of at-risk patients to secondary facilities—may be an important priority in some contexts, but may not be effective if clinicians at primary care facilities fail to recognize complications or if poor weather, unpaved roads and other factors impede transport to higher-level facilities. Alternative approaches include promoting delivery in high-volume settings and

ensuring that the primary care facilities that perform the most deliveries have the staff and equipment needed to meet quality of care standards.—*P. Doskoch*

REFERENCE

1. Kruk ME, Quality of basic maternal care functions in health facilities of five African countries: an analysis of national health systems surveys, *Lancet Global Health*, 2016, 4(11):e845–e855.