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SURGICAL CAPACITY INDICES - A POOR PREDICTOR OF SURGICAL PRODUCTIVITY IN AFRICAN DISTRICT HOSPITALS

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Introduction: The monitoring of hospital service delivery capacity and understanding of its determinants are essential to achieving universal access to surgical care. This is particularly important in rural sub-Saharan Africa (SSA), where the need is greatest but district level hospitals (DLHs), the primary service providers, struggle to deliver safe and timely care. A variety of tools is available to measure surgical capacity. This study evaluates the utility of surgical capacity indicators as predictors of surgical productivity of DLHs in SSA.

Materials & Methods: We surveyed 76 DLHs in Malawi, Zambia and Tanzania, using a convergent mixed-method design. An extended Personnel, Infrastructure, Procedures, Equipment and Supplies (PIPES) survey tool was employed to collect data on surgical capacity indicators, availability of surgical providers and surgical output. 33 in-depth interviews complemented the quantitative findings. Two surgical providers were surveyed per facility to maximise data validity and reliability, and to minimise recall bias. Surgery volumes were extracted from theatre logbooks and hospitals were categorised into high and low productivity groups. An overall surgical capacity index and individual indexes for each subdomain were computed. Negative binomial regression models identified predictors of surgical productivity.

Results: Median general surgical productivity was low: 23 cases per four months in Tanzania (range: 1-68), 31 in Malawi (range: 8-103), 12 in Zambia (range: 0-42). DLHs in Tanzania and Malawi had higher numbers of providers per facility (median 8, 16 and 3 respectively); and performed significantly more procedures than in Zambia $F(2,72)=8.38$, $p=001$. No significant correlation was observed between surgical productivity and overall surgical capacity, nor with individual capacity domain, indexes. In multivariable regression models, surgical capacity indexes were not statistically significant predictors of surgical productivity. Qualitative findings suggested that additional factors, not captured by mainstream indicators, may affect hospitals' surgical productivity, particularly staff motivation.

Conclusion: Our findings suggest that the common tools to assess availability of essential staff, infrastructure, equipment and supplies do not capture some important parameters of surgical productivity in SSA DLHs. Further studies are needed to improve existing tools and approaches.

Disclosure of Interest: None Declared

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