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Effects of capacity building interventions on Health Management Information System data completeness for maternal delivery services at Arua regional referral hospital Uganda

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Abstract

Background Reliable HMIS data are vital for maternal health planning, yet completeness remains low. This study examines how capacity-building interventions improve HMIS data completeness for maternal deliveries at Arua Regional Referral Hospital.

Methods A mixed-methods study was conducted in 2023 at Arua Regional Referral Hospital. A total of 92 participants were selected through both purposive and simple random sampling. Quantitative data were gathered using a structured mobile questionnaire administered via KoboCollect, while qualitative data were obtained from key informant interviews and a review of HMIS registers, monthly reports, and DHIS2 records. Quantitative analysis was performed in SPSS v26 and R v4.5.1 using descriptive statistics and Spearman's correlation, with significance set at $P < 0.05$. Qualitative data were analysed through thematic content analysis using NVivo software.

Results The majority of the enrolled participants were female and predominantly midwives. Supportive supervision and data quality assessments were commonly conducted quarterly, while HMIS training occurred less frequently. Half of the reviewed monthly delivery reports indicated consistency between on-site counts and HMIS submissions. Supportive supervision showed a moderate, significant positive correlation with data completeness ($\rho = 0.598$, $p = 0.040$), and data quality assessment also showed a positive significant correlation ($\rho = 0.714$, $p = 0.009$) with data completeness. HMIS training ($\rho = 0.488$, $p = 0.108$) and capacity building ($\rho = 0.600$, $p = 0.453$) revealed a positive correlation with completeness. The correlation between capacity building and data completeness was not statistically significant.

Conclusion Supportive supervision and routine data quality assessments are key contributors to improved HMIS data completeness. Strengthening the consistency, coverage, and feedback mechanisms of capacity-building interventions may enhance

