Improving Data Completeness and Timely Reporting: A Joint Collaborative Effort between Partners in Health and Ministry of Health in Remote Areas, Neno District, Malawi

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Abstract : Background: Data is key to supporting health service delivery as stakeholders, including NGOs rely on it for effective service delivery, decision-making, and system strengthening. Several studies generated debate on data quality from national health management information systems (HMIS) in sub-Saharan Africa. This limits the utilization of data in resource-limited settings, which already struggle to meet standards set by the World Health Organization (WHO). We aimed to evaluate data quality improvement of Neno district HMIS over a 4-year period (2018 – 2021) following quarterly data reviews introduced in January 2020 by the district health management team and Partners In Health. Methods: Exploratory Mixed Research was used to examine report rates, followed by in-depth interviews using Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs). We used the WHO module desk review to assess the quality of HMIS data in the Neno district captured from 2018 to 2021. The metrics assessed included the completeness and timeliness of 34 reports. Completeness was measured as a percentage of non-missing reports. Timeliness was measured as the span between data inputs and expected outputs meeting needs. We computed T-Test and recorded P-values, summaries, and percentage changes using R and Excel 2016. We analyzed demographics for key informant interviews in Power BI. We developed themes from 7 FGDs and 11 KIIs using Dedoose software, from which we picked perceptions of healthcare workers, interventions implemented, and improvement suggestions. The study was reviewed and approved by Malawi National Health Science Research Committee (IRB: 22/02/2866). Results: Overall, the average reporting completeness rate was 83.4% (before) and 98.1% (after), while timeliness was 68.1% and 76.4 respectively. Completeness of reports increased over time: 2018, 78.8%; 2019, 88%; 2020, 96.3% and 2021, 99.9% ($p < 0.004$). The trend for timeliness has been declining except in 2021, where it improved: 2018, 68.4%; 2019, 68.3%; 2020, 67.1% and 2021, 81% ($p < 0.279$). Comparing 2021 reporting rates to the mean of three preceding years, both completeness increased from 88% to 99% (in 2021), while timeliness increased from 68% to 81%. Sixty-five percent of reports have maintained meeting a national standard of 90%+ in completeness while only 24% in timeliness. Thirty-two percent of reports met the national standard. Only 9% improved on both completeness and timeliness, and these are; cervical cancer, nutrition care support and treatment, and youth-friendly health services reports. 50% of reports did not improve to standard in timeliness, and only one did not in completeness. On the other hand, factors associated with improvement included improved communications and reminders using internal communication, data quality assessments, checks, and reviews. Decentralizing data entry at the facility level was suggested to improve timeliness. Conclusion: Findings suggest that data quality in HMIS for the district has improved following collaborative efforts. We recommend maintaining such initiatives to identify remaining quality gaps and that results be shared publicly to support increased use of data. These results can inform Ministry of Health and its partners on some interventions and advise initiatives for improving its quality.

Keywords : data quality, data utilization, HMIS, collaboration, completeness, timeliness, decision-making

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