

Evaluating the quality of routine immunisation data in South Africa: a comparative study of health information systems in KwaZulu Natal and Western Cape

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Background/Introduction: Reliable and valid information on immunisations is important for health care managers to track and improve systems' performance and to monitor progress in eradicating childhood diseases. Trends in immunisation coverage are used to establish the link between immunisation service delivery and disease occurrence and to provide a framework for setting future coverage goals. To achieve these goals, the quality of immunisation data cannot be overemphasized. This study sought to evaluate and compare the quality of routine immunisation data in two health services managed respectively by local and provincial governments in Cape Town, South Africa, and to identify health service characteristics which affected data quality.

Methods: A retrospective record review to assess the quality of immunisation data recorded in patient folders, immunisation registers, and routine monthly reports was done in 26 health facilities. Data quality, based on accuracy, completeness and timeliness of seven data elements reported in January and April 2012 was compared by checking data transfers within the facility, and between the facility, sub-district/substructure and district levels. Facility characteristics data were extracted from an evaluation of routine health information systems of Prevention of Mother to Child Transmission of HIV services in the Western Cape. Data were analysed in STATA® Version 13 using descriptive statistics, non-parametric two-sample Kolmogorov-Smirnov test, Pearson correlation, t- tests and multiple regression analyses.

Principle Findings: Data quality varied depending on the level of data transfer and authority. At facility level overall data quality was 24% when comparing patient folders to facility registers, and 75% when comparing facility registers to routine monthly reports. At district level, overall data quality was 82% when comparing the routine monthly reports submitted at sub-district to the District Health Information System. However, there were significant differences in data quality between the two health authorities, and at the different levels of data transfer from facility to districts. A Two-sample Kolmogorov-Smirnov test showed that authority is statistically significant when compared with data accuracy. Multiple linear regression analysis also showed that authority was a predictor of data accuracy, accounting for 86% of the variations.

Conclusions/Significance: Data quality is affected by the availability of data collection tools and working equipment, and by how data are collected and transferred from the point of data entry into the patient records and to subsequent levels in the routine health information system. Different processes of data collection and transfer may contribute to worse data quality. Furthermore, the results showed that being in one authority as compared to another is a strong predictor of the accuracy of data transfer