Daniel Hahn
Dr. med.

What is the quality of communication and information at ANC departments of health facilities? A multi-method case study in three selected hospitals in Kenya

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Doktorvater: Prof. Dr. med. Michael Marx

Information and information systems are increasingly acknowledged as vital components of health systems. They play key roles at all levels of health systems through providing information for decision making. This includes operational decisions in patient care up to strategic ones in health programmes and national health systems. In Kenya, the strengthening of information systems in health care is a declared goal of national policy. Despite its acknowledged importance, the evidence provided concerning information systems in healthcare is rather slim – particularly in Low and Middle Income Countries. Moreover, available evidence suggests that information systems are rather weak and data quality is usually not adequate. This applies to national Health Management Information Systems as well as to Hospital Information Systems.

To examine the quality of health information systems in Kenya, a multiple case study was carried out in the ANC departments of two private and one public hospital. The aim of the study was to assess the quality of communication and information. This included the detailed description of the systems, the assessment of several information flows and data quality. Hospital level is of special interest since hospitals play a dual role for health information systems: On the one hand, they use health information through their Hospital Information System primarily for patient care. On the other hand, they are also an entry point for the national health information system.

The study took place from March to August 2012. A combination of several methods was employed in an iterative study process. At first, a systematic literature review was carried out, which was followed by workplace walkthroughs. These were used as a starting point to develop semi-structured questionnaires for key-informant interviews with the management of the facilities (n=15) and structured ones for the staff (n=44). Finally, a quantitative assessment of data quality in four information processes (completeness and accuracy of transmission of clinical information and reports in ANC) was conducted. The different methods also represent views from different angles at the information systems and triangulation was used to demonstrate reliability.

All hospitals were level four facilities meaning that they were able to carry out comprehensive Emergency Obstetric Care. Their information systems were heterogeneous. While the two private hospitals had implemented Information and Communication Technology to a rather huge extent, the public hospital had just started the process of implementation.

The quality of data was limited at all study sites. At medical record level, the main problems were incompletely transmitted information, missing documents, unacceptably delayed transmission and incorrectly transmitted items like laboratory test results. In total, the completeness of tracer items ranged from 42 % to 100 % and the accuracy of transmitted items from 85 % to 95 %. A similar situation was found for health reports in the ANC and

maternity departments of the study sites. Altogether, completeness ranged from 62 % to 97 %, the accuracy from 22 % to 55 % (with 5 % tolerance) and also the consistency of reports with identical content was limited. The staff was mostly not aware of data quality problems and rated the quality of information higher at the private and computerized hospitals. Contrary to this, the hospital management was generally aware, but this did not result in adequate action.

On the other side of the information systems, usage of reports was generally low. Exceptions were business oriented reports at the private study hospitals. Feedback on content or quality of reports was the exception rather than the rule and for staff, usage of data except individual patient care was low, too.

Diverse determinants for the performance of the studied information systems have been identified. This is of high importance because they offer possibilities for quality improvement. More technical factors like the quality of Hospital Information Systems, databases and paper forms or the selection of appropriate datasets are included as well as socio-behavioral aspects like training and motivation. A general culture of information generation and usage should be fostered at all levels of the health system and information processes should be involved in quality management. Quality improvement measures have to take the broad range of determinants into account adequately.

High quality health information and its usage have a huge impact on the performance of health systems at every level. Although this is accepted widely, the performance of health information systems is often inadequate. To increase their performance, integrated systematic approaches should be preferred over single actions. They have to combine a wide range of measures adapted to local needs and include technical and organizational aspects as well as individual training and motivation.