Using electronic health records in a rural setting (Uganda)

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Abstract and Objective

Quality and usage of medical data captured in rural settings typical of developing countries is an ongoing challenge. This research investigates the influence of continuous monitoring, evaluation and improvement of technical and non-technical aspects surrounding an electronic health records (EHR) system covering all critical hospital processes. Staff feedback and compliance with international EHR standards is used for continuous improvement, monitored through weekly meetings, integrated quality indicators and continuous observation. EHRs can be sustainably used in rural settings, if challenges encountered (technical and non-technical) are continuously addressed.

Keywords:

Computerized medical records systems, Quality assurance, Health care, Rural health services

Introduction

Delivery of accurate health care reports for purposes of improving health care is inevitable. Paper-based reporting systems have known deficits. The research team therefore designed an electronic version (eHMIS – www.ehmis.net) of the national health management information system (HMIS) of Uganda, beginning with Mother and Child Health (MCH) processes piloted in Tororo District Hospital (TDH), a rural hospital in eastern Uganda. Data analysis over 18 months revealed that timeliness, availability and staff satisfaction with the system were clearly positive; however, results on accuracy were encouraging but too few for final conclusions. Furthermore, the need to address social, organizational and managerial challenges was noted as a sine qua non for success [1].

Methods

After the first systematic evaluation [1], eHMIS has been in daily use for another 38 months. During this time some formal quality indicators were systematically traced, some concurrent observations were made, and users were asked for further suggestions. The resulting set of informally and systematically collected items was assessed by the project team. This and the quest for compliance to international standards led to a number of lessons, design decisions, and training approaches for the forthcoming new eHMIS system.

Results – Lessons Learnt

Difficulties expressed by staff in diagnosing using ICD-10 codes necessitated the front-end replacement of ICD-10 codes with Uganda Clinical Guidelines (UCG) codes, previously only present in hardcopy, but allowing for back-end mapping to ICD-10.

To address concern over data privacy and confidentiality, security was further enhanced by including module-based access control and sign in to duty stations to allow for cross unit patient data manipulation equipped with a more sophisticated access permission concept, beyond only password access (login / sign out) and control of access to functions present in the old eHMIS.

In response to a desire by staff to reduce diagnostic and prescription errors, patient allergy and history tracking was integrated in compliance to international standards.

Staff also requested for more health related information. Consequently, the application is being selectively linked to knowledge resources including MedLine+.

A train the trainer approach through eHMIS champions is enabling skills transfer and ensuring project sustainability. Weekly meetings allow for addressing social, organizational and managerial issues.

The new eHMIS will be fully operational in TDH and Mifumi Health Center by June 2010.

Conclusion

Electronic health records can be sustainably used in areas of low computer literacy, unreliable electricity and other hindrances that developed countries cannot think of. Its true value lies in the ability to inform decision making at all levels, i.e. health facility, district, ministry of health and other stake holders.

References

[1] Ndira SP, Rosenberger KD, Wetter T. Assessment of Data Quality of and Staff Satisfaction with an Electronic Health Record System in a Developing Country (Uganda). Meth Inf Med 2008 47 489-98

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