

INEXPENSIVE OPEN SOURCE TB AND HIV ELECTRONIC MEDICAL RECORD SYSTEM (OPENMRS) IN SOUTH AFRICA

C Seebregts^{1,2}, M Mars^{2,3}, C Fourie^{2,4}, Y Singh^{2,4}, K Weyer⁵

¹*Biomedical Informatics Research Division, Medical Research Council, South Africa;*

²*Graduate Program in Medical Informatics, University of KwaZulu-Natal, South Africa;*

³*Department of Tele-Health, University of KwaZulu-Natal, South Africa;* ⁴*Department of Computer Science, University of KwaZulu-Natal, South Africa* ⁵*TB Epidemiology and Intervention Research Unit, Medical Research Council, South Africa*

chris.seebregts@mrc.ac.za

OBJECTIVES: Implement a scaleable, configurable, low cost electronic medical record application for HIV and TB patient and treatment management.

METHODS: OpenMRS is a scaleable and extensible, open source electronic medical record application for developing countries (www.openmrs.org)¹. The current version integrates with a commercial application (Microsoft InfoPath) for the development of forms and has been successfully deployed for HIV and TB patient and treatment management at several clinics and hospitals in Kenya, Rwanda and South Africa.

We have used OpenMRS to develop a low cost application for the management of information associated with the provision of antiretroviral treatment to qualifying HIV positive patients receiving treatment for tuberculosis at a hospital in KwaZulu-Natal, the province with the highest prevalence of HIV infection in South Africa. The existing provincial Department of Health ART forms and the National TB Control Program Patient and Treatment cards have been implemented in OpenMRS to create an integrated TB, HIV and ART patient and treatment management application.

RESULTS: OpenMRS is highly appropriate for the following reasons: (1) open source, low cost and maintained by an active network of developers and implementers providing maintenance and support; (2) scaleable because the application is multi-tiered and uses robust database server technology; (3) extensible because it uses a stacked database model that can be configured to store any number of observations associated with a clinical encounter; (4) standards-based and uses a medical messaging standard (HL7) to communicate data and parameters between tiers and across telecommunications lines; (5) flexible and integrated and can implement any medical form into a clinical encounter.

CONCLUSIONS: OpenMRS is useful for developing inexpensive yet powerful systems in developing countries. Future implementations will be multi-user client-server applications using various networks in South Africa.

¹ Mamlin, B. W., P. G. Biondich, et al. (2006). Cooking Up An Open Source EMR For Developing Countries: OpenMRS - A Recipe For Successful Collaboration. AMIA Annual Symposium. Washington, D.C.; Mamlin, B. W. and P. G. Biondich (2005). AMPATH Medical Record System (AMRS): Collaborating Toward an EMR for Developing Countries. AMIA Annual Symposium.