This thesis focuses on the use of electronic medical record (EMR) and clinical decision support systems (CDSS) to improve quality of care for HIV/AIDS patients through better adherence to WHO and national clinical guidelines. HIV/AIDS is a major public health problem; in 2013 nearly 35 million people were infected globally, with 71% living in sub-Saharan Africa (SSA). Approximately 1.5 million people died of AIDS-related illnesses in 2013. Kenya is ranked fourth globally in HIV/AIDS burden. We start by describing the biological and socio-behavioral factors associated with HIV infection among adults aged 15-49 years in Kenya. The main studies included in this thesis, based on rigorous scientific design and conducted in Kenya, provide strong evidence that EMR-based CDSS can improve adherence to HIV/AIDS treatment guidelines in resource-limited countries in SSA, and hence quality of care. We show that EMRs and CDSS can significantly improve timely initiation of life-saving antiretroviral therapy and early detection and action on treatment failure among HIV patients. We also describe the process of standardizing the recording of AIDS-Defining Illnesses (ADIs) and derivation of a reference set for ADIs based on an international terminology system (SNOMED CT). The reference set was implemented as an interface terminology of an EMR at a busy teaching and referral hospital in western Kenya.

Overall, the thesis provides compelling evidence that EMR-based CDSS improve quality of HIV care in resource-limited settings.
Electronic Medical Records and Clinical Decision Support Systems in HIV Care in Resource-Limited Settings

Tom Onyango Oluoch
Electronic Medical Records and Clinical Decision Support Systems in HIV Care in Resource-Limited Settings
PhD thesis, University of Amsterdam, Amsterdam, The Netherlands

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Electronic Medical Records and Clinical Decision Support Systems in HIV Care in Resource-Limited Settings
Promotiecommissie

Promotor: Prof. dr. A. Abu-Hanna  Universiteit van Amsterdam

Copromotores: Dr. N.F. de Keizer  Universiteit van Amsterdam
Dr. ir. R. Cornet  Universiteit van Amsterdam

Overige leden: Prof. dr. M.W.M. Jaspers  Universiteit van Amsterdam
Prof. dr. J. van der Lei  Erasmus Universiteit Rotterdam
Prof. dr. T.F. Rinke de Wit  Universiteit van Amsterdam
Prof. dr. A.M. Dondorp  University of Oxford
Prof. dr. ir. A. Hasman  Universiteit van Amsterdam

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