Utilising Open Source Medical Systems to Develop a Virtual Health Care Referral System in Kenya

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Abstract and Objective

Health systems in Kenya and Africa are faced with challenges of lack of access to technology for accurate diagnosis and treatment. The labor force does not meet demands of a growing population with increasing health needs. Health specialists are few and prefer to remain working in urban areas thus limiting their consultations from rural areas to a minimum. Referral systems are limited by delays in access to care because of a poor road network and poor infrastructure. This poster describes the use of an open source medical records system (OpenMRS) to develop a referral system in such a situation for pathology specimens. This involves actual system development and implementation. This is done remotely and clinicians with internet access can view slides and comment on result aiding in diagnosis and referral.

Keywords:

Health informatics, Virtual referral, Kenya, Pathology, OpenMRS

Background

Various NGOs like AMPATH& APHIA II run satellite clinics to treat HIV/AIDS and have adopted the open MRS to provide HMIS. This presentation describes a module on utilizing OpenMRS to support pathology studies and establish a virtual referral system.

Methodology

OpenMRS developer version was deployed in a windows background. A refresher online tutorial was undertaken to read on the available modules and how to program for modules on OpenMRS. A pathology module design was developed after a survey of a pathology lab and discussion with various pathologists on their information needs. The module was then developed using the OpenMRS api and java programming language.

Results

Pathology module is connected to the patient details and observations table. It records specimen details and processes and the dates of specimen taken. It is linked to a digital pathology camera which serves to record the view of the pathologist. This is uploaded and saved in the module database which is a MySQL system. The module has a web conferencing option which is broadcast over the internet using a VOIP based system . The module allows for numerous authenticated users to discuss patients' pathology slides and agree on a pathological diagnosis

The module is being tested and debugged. Challenges of implementation include ethical issues on patient privacy and litigation and forming a committee of pathology reviewers. For a country where health workers prefer to remain in the towns, and roads limit access to referral health care services, this could be a solution by developing virtual referral systems. The system needs computerization and digitization of microscope systems and basic training of laboratory workers to use such systems. This can improve on cancer management in peripheral centers that lack appropriate diagnostic equipment and staff.

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