



SNOMED CT for monitoring HIV-stage – Implementation in OpenMRS in Kenya

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Audience

Individuals who want to learn how a SNOMED CT value set can be developed and individuals who want to learn how SNOMED CT will be used to adequately capture AIDS-defining illnesses in Kenya.

Objectives

To describe the process of defining a value set of AIDS-defining illnesses (ADIs) based on SNOMED CT terms and relationships, paper records, a third-party value set, and findings from focus group discussions; and its implementation in the OpenMRS Electronic Medical Record (EMR) system.

Abstract

Introduction. Providing adequate care to HIV-infected patients requires long-term periodical monitoring of their clinical and immunological status, especially before start of antiretroviral therapy. Due to limited access to lab tests to monitor immunological status, clinical status, i.e. presence of ADIs, is often used to stage the patients according to WHO guidelines. HIV-stage is essential for determining proper treatment, e.g., start of anti-retroviral therapy. Consequently, poor recording or incorrect inference of WHO clinical staging can lead to under- or over-treatment of patients.

Background. AIDS-Defining Illnesses, defined as opportunistic illnesses that occur with more severity and higher frequency among persons with HIV, have high incidence in Sub-Saharan Africa and are still the main cause of morbidity and mortality among HIV-infected persons.

Methods. Based on terms and relationships in SNOMED CT we determined disorders associated with AIDS. The resulting set was merged with a pre-existing set of AIDS-defining illnesses and complemented by disorders that were deemed relevant in focus group discussions or were extracted from a 2-months sample of patients' paper records. The resulting value set is represented in the OpenMRS concept dictionary.

Results. Implementation of the value set in the OpenMRS concept dictionary is feasible, providing users with the possibility of searching ADIs by partial string matching. OpenMRS with the ADI value set will be implemented at the Jaramogi Oginga Odinga Teaching and Referral Hospital in Kisumu providing clinicians a structured tool for granular recording of ADIs and automatically inferring WHO clinical staging.

Conclusion. The use of complementary sources to specify a value set has proven useful. OpenMRS provides a proper platform for implementing SNOMED CT value sets. The IHTSDO licensing model enables developing countries to apply SNOMED CT and improve quality to data and ultimately quality of care.