Development Journey of Clinical Data Analysis and Reporting System (CDARS) in Hospital Authority of Hong Kong

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The Clinical Data Analysis and Reporting System (CDARS) has been implemented in Hospital Authority of Hong Kong (HA) to provide value-added information to support different aspects of healthcare services for management decision, clinical audit, planning and research. It facilitates the retrieval of clinical data captured from different operational systems for analysis and reporting and provides good quality information to support retrospective clinical and management decisions by integrating the clinical data resided in Data Warehouse.

Keywords:

Information systems, Clinical decision support system

Arden-Syntax-Based Clinical Decision Support Software

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We describe an implemented software architecture for clinical decision support (CDS) based on the Health Level Seven (HL7) Arden Syntax for Medical Logic Systems. Arden Syntax's proven applicability as a medical knowledge representation and inference scheme makes it a good candidate for a service-oriented architecture for CDS systems. We developed a package of Arden-Syntax-based software components including compiler, rule engine, server, an integrated development environment (IDE), and web services for interoperability. We report on a large-scale implementation of this software system, which constituted the platform for an automated cockpit surveillance program for early identification and automated monitoring of hospital-acquired infections at 12 intensive care units (ICUs) serving adult patients, and 3 ICUs for neonatal care at the Vienna General Hospital. The Philips Care Vue intensive care medical information systems installed at the ICUs provide the necessary data. Arden Syntax, the service-oriented architecture, the extended medical knowledge packages, and the developed web-based user interfaces create a powerful tool for CDS at the infection control unit of this hospital.

Keywords:

Clinical decision support, Service-oriented architecture, Arden syntax, ICU, Hospital-acquired infections.