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Georgia's CIS Implementation

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A new clinical information system (CIS) has been launched in Georgia. Its primary goal is patient management. However, the system is also targeted at creating a unified information space in the framework of the wider medical organisation, especially in a healthcare environment undergoing both rapid transformation and no let up to economic pressures. This is the kind of challenge several other countries in the region are likely to be encountering at the current time.

The Georgian CIS has been created with .Net technology and SQL database architecture and involves a multi-user Web-based approach. This ensures local (Intranet) and remote (Internet) access of the system as well as management of databases.

Architecture

The CIS consists of three key modules:

1. Administration and configuration module

2. Working module for medical personnel

3. Reporting module.

The administration and configuration module is dedicated for the setup of basic rights. It allows users to be registered or blocked, and their rights to be defined and configured. All forms used in the clinic (consultation, clinical investigation, diagnosis, prescription, treatment etc.) are generated by the administration and configuration module as is a database of staff in a specific clinic, with each employee provided with a unique code alongside biographical and professional data.

The working module for medical personnel generates, edits and updates medical history. Patient visit planning, staff work scheduling and agendas are also realised by this module, with automatic notifications sent to concerned staff. Medical history, associated with a unique code, consists of both text and multimedia files – image, video and voice – and is generated at the first visit by a patient to a clinic.

The reporting module realises full or partial export of medical history as well as the forms used in clinical investigations, consultation and prescriptions – in a variety of formats (.pdf, .rtf, .jpg etc.). This module permits statistical analysis of medical data (patient's age, sex, diagnosis, date of investigation, treatment parameters etc.) and are designed for use in the quality control of medical services.

Evolution

Since implementation, the clinical information system has been rapidly evolving into additional areas:

Ó Clinical decision support. This provides users with the tools to acquire, manipulate, apply and display appropriate information to aid in making accurate, timely and evidence based clinical decisions.

Ó Electronic medical records (EMRs). These contain information about patients, from personal details (such as

name, age, address and sex) to details of every aspect of care given by the clinic (ranging from routine visits to major operations).

Ó Training and research. Patient information is made available to medical personnel for training and research. One new field is data mining of

information stored in databases, as a means to provide insights into disease states and how best to manage them.

Benefits

The CIS has yielded significant benefits:

Ó Easy access to patient data. The system provides convenient access to medical records at all points of care. This is especially beneficial at ambulatory points, and thereby directly enhances continuity of care. Internetbased

access improves the ability to remotely access such data.

Ó Structured information. The data captured in clinical information systems is well organised, thus making it easier to maintain, and quicker in finding relevant information. The CIS also reduces the likelihood of mistakes arising from illegible writing.

Ó Improved drug prescription and patient safety. The CIS enhances control of drug dosing and this leads to a reduction of adverse drug interactions, while also promoting more appropriate pharmaceutical utilisation.

Barriers

Despite such benefits, there are still barriers which prevent the CIS from being rolled out in every healthcare organisation across Georgia.

Ó Initial cost of acquisition. The high price of the basic infrastructure is a stumbling block for many healthcare organisations.

Ó Privacy and security. There are still huge concerns in the healthcare industry about the privacy of patient data on computer systems and how to keep such information secure.

Ó Clinician resistance. Clinicians usually have 10-20 minutes to see their patients and if their use of a CIS takes up more time than before, it leads to resistance.

Ó Integration of legacy systems. As elsewhere, this poses a stiff challenge for many organisations in Georgia.

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