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Health level seven compliance and clinical decision support system for an intensive care unit.

Abstract

The position of healthcare industry in India is poor in terms of – adoption of IT infrastructure, and capability to harness its benefits. Both these factors entangle to form a catch-22 situation. The fundamental problem lies with either getting insufficient advantages or arousal of new loop holes in the IT solutions.

An important point to be realized is that automation does not mean simply the translation of manual process. Rather, automation should provide efficient processing, removing previous bottlenecks and safeguarding against prospective limitations and constraints. But most of the times, automation simply mimics the manual process.

Another important fact, though said in different context, but well applied to IT is the saying-“The art of communication is the language of leadership”. A stand-alone information system is of no use. They should be interactive. But exchanging information among health care information systems is a challenge. The reasons being Health care systems are multidisciplinary in nature. The information systems developed are too different amongst each other for obvious reasons. This problem had been realized by some revolutionist back in 1987. They came up with a standard known as Health Level Seven.

There is one more drawback of information systems. Though they provide a mechanism to store and retrieve data efficiently, seldom do they provide the facility to analyze, mine and assess the data. So their attribute of huge data storage go all waste. Ideally, there should be mechanisms which may enable the managers to take better decisions.

The above two factors are the basis of this thesis. In essence, they can be summarized as- development of ‘communicative and interactive information systems’; and ‘decision support facility’ of information systems.

This project is exclusively developed for Sir Sunderlal Hospital, Banaras Hindu University, Varanasi. A previously developed Information System, "SANJEEVANI" is now evolved to a communicative system renamed as "HL7 Compliant

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SANJEEVANI" by complying it with the HL7 standard. A clinical decision support system, "ANAVESHAK" is also developed. It is an application to retrieve desired information from the ICU database and to perform statistical and graphical analysis so as to provide better care to the patients.

Keywords: Intensive Care Unit, Health Level Seven, Information System, Clinical Decision Support System, Healthcare Environments.