



## CIS improves management

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If there is anything which is rising faster than the price of crude oil, it is the rise in chronic lifestyle diseases. And amongst these killer diseases, cardiac diseases have taken the numero uno position.

Innovative treatments such as genetic and stem cell therapy are still in their infancy, hence we have to depend on conventional cardiac treatment.

### **Prevention**

Working towards a regime of early disease detection and improved management of the chronic cardiac disease is the way forward. Not only will it alleviate costly and stressful surgeries and treatment, but it will also result in better quality of life for the patients.

### **Communication**

Information and Communication Technologies (ICT) have transformed our day-to-day lives in every conceivable area, from banking to entertainment and travel to shopping.

Similar transformation is slowly taking place in healthcare delivery and management; but it is important we identify the right approach. With the easy availability and affordability of a large number of digital medical devices, such as digital vital signs monitoring devices, monitoring of patients at home and the workplace through telemedicine is going to be routine in coming years. Healthcare can achieve wonders if we adopt ICT. This in turn will promote preventive medicine and bring to life the old mantra : ‘Prevention is better than cure’.

### **ICT Solutions**

ICT enabled solutions for chronic disease management must address the following issues:

- They must deliver critical information in a manner that simplifies the job of overworked clinicians. Chronic diseases can be managed well in the initial phase provided ICT facilitates data capture comprehensively and in a ‘doctor friendly’ manner.
- The new solutions must first be implemented by pioneers willing to change conventional mindsets by adopting innovative and progressive processes. This is a major change-management exercise.
- The solutions must be a seamlessly integrated with all the other relevant systems like HIS (Hospital Information Systems) and PACS.

To illustrate these facts, one can look at the impact of the innovative use of ICT in Cardiology Information Systems (CIS) with Advanced Imaging and Imaging and Electronic Medical Records (iEMR).

The CIS is linked to all information related to the patient and the clinical episode. Demographics and administrative data are captured in the HIS and linked to the CIS.

The benefits are that it is a reliable and structured way to store and retrieve the clinical and patient information and offers a powerful tool to analyse the information for education, academics, quality initiatives, research and performance measurement. Integration with administrative processes ensures improvement of overall patient management and satisfaction.

## Innovation is key

All these benefits are not possible without innovative use of technology, which support common sense requirements. All these points apply to applications in a typical cardiac care environment.

The following are three pillars of innovative use of technology on which such a system rests:

### 1. Flexible EMR engine:

Electronic Medical Records present an unprecedented challenge to the software professional.

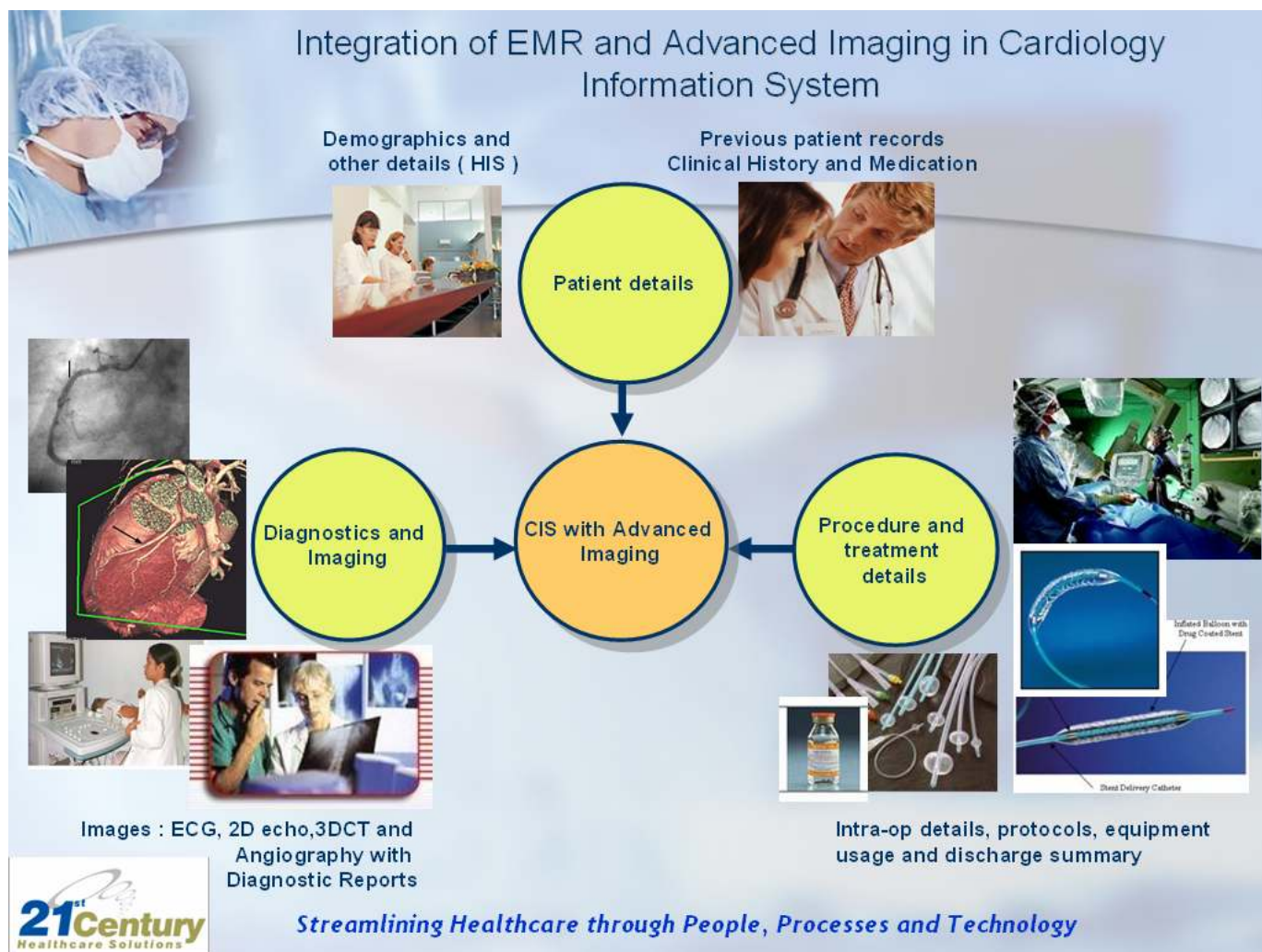
On one hand is the need to provide a system that is rule driven, structured, with a need for outputs and a Management Information System that is fairly standardized. On the other hand, no two medical specialists agree on what is the ideal info or output thus requiring extreme flexibility at user levels.

The solution is to have an EMR engine which can empower the doctor to define his own inputs with validations and outputs and statistical reports.

### 2. Integration of highly discrete information:

A cardiologist has to deal with diversified clinical data such as outpatient consultation, ECG strips, 2D echo / angiography loops, procedure plan, etc. Clinically, all data is important as it collectively impacts decision making. However, as the records are scattered, all these details need to be merged to enhance communication, and reduce error, time and cost of logistics.

3. Building clinical intelligence into the system: Archiving without storage and retrieval planning creates more problems than it solves. It is like taking off in a plane without a clear flight plan or ability to land safely. If one has to include the imaging records, intelligent storage needs to be planned.



## To summarise

The bottom line is that appropriate use of ICT technology can dramatically improve early diagnosis and patient management especially for chronic diseases.

Such data can be analysed at any point in time and only then can it provide a preventive alert.