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Taking a look at DICOM Structured Reporting

By: Adam Chee W.S

DICOM Structured Reporting or DICOM SR, a supplement under the DICOM Standard that caters for the exchange of structure data between systems, has been receiving much fanfare in recent months but in actual fact, this standard has been around for quite some time.

Championed by Dr Dean Bidgood, the work on DICOM SR began as early as 1994 before becoming an official supplement in 2003. So what is the “hype” on DICOM SR all about? Why is there a sudden rise in interest on DICOM SR? To understand the reasons why, let’s take a look at the purpose and features of this standard and what does it cater for in the world of healthcare informatics.

DICOM SR in a Nutshell

To put it plainly, DICOM SR is a method of describing data elements in a systematic manner so it can be recognized by all devices (conforming to the DICOM SR standard), this effectively extends the virtues associated with image transfer standards using the DICOM format. This includes;

- Vendor neutral exchange of data
- A system of encoding structure data

Contrary to what the name implies, DICOM “Structure Reporting” is not limited to just reports but instead, caters to a wide range of data including, measurements, waveforms, logs (e.g. hemodynamics) among many others. It would appear that DICOM SR serves as the holy grail of data exchange in the world of healthcare informatics, so why has it not taken over the industry by storm? Why is DICOM SR only receiving fanfare only 6 years after it became an official supplement of the DICOM Standard?

The Bane of Flexibility

DICOM SR adopts external coded terminologies (e.g. SNOMED, ICD-9/10 etc) to define data elements, it does not standardize applications or data entry techniques or even how the data is presented, this flexibility poses great freedom and creativity to modality vendors in how they would want to best define their structure.

However, this also means that one vendor can put in almost any content in any structure they want for data exchange and the receiving party will somehow have the ability to ‘know’ and process this data received. Think of the infinite combinations / variants possible, with no standardization on the lexicon for vocabulary or the template / sequence of these elements to be exchanged, it is nearly impossible for any systems to exchange data without some form of pre-mapping, let alone having it ‘plug and play’.

The Potential for DICOM SR

Although limitations exist for DICOM SR, it is important to understand that its adoption in clinical use is still in an infancy stage, the standard is bound to get more defined and early adopters of this standard will need to be aware of the limitations that exist;

- It is not plug and play
(Some serious effort is required to define the elements to be exchanged)
- You can only receive what was defined and send
(Sounds logical, not to many end-users)

And the good news is, the potential for its adoption is **huge**. Think about ECG waveforms, clinical measurements, procedure logs, IVUS audio. The entire approach to data acquisition can be redefined and both clinical workflow and patient care can raise to new heights with the availability of these data. In fact, the whole concept of PACS might just change (again) along with the evolution of DICOM SR

For More Information

Dr. David A. Clunie has kindly made his book - DICOM Structured Reporting (ISBN 0-9701369-0-0. 394 pages) available for download at <http://www.pixelmed.com/srbook.html>

It is definitely worth reading if you are interested to know DICOM SR comprehensively.

Contact

Media and all other Queries: media@binaryhealthcare.com

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