

Variation in a 'Plug and Play' World



Do Standards mean your systems and equipment should be 'plug and play'?

Not necessarily. Standards are recommended practices and formats – they make communication between organizations and systems easier and faster, but there is no legal penalty for a company who chooses not to follow them. DICOM and HL7 are examples of healthcare communications standards for systems and equipment. HL7 (Health Level 7) is an industry standard dealing with the interchange of healthcare data between systems in a healthcare enterprise.

This standard establishes a message format used to communicate healthcare data between HL7 compliant systems. The HL7 standard also defines the message types that communicate specific subsets of information along with the information, or fields, included in each message type. Message types include:

- ADT (Admit, Discharge, Transfer): this contains the patient information and potentially location information
- ORM (Order Message): contains information on what procedure, scheduled date and time, ordering physician, etc. May include a Cancel request.
- SIU (Scheduling Information Unsolicited): contains information about a patient's appointments from a scheduling application. Some systems which cannot create an ORM can do an SIU.
- ORR (Order Response): used to acknowledge an ORM or ORU.
- ORU (Order Update): contains information on changes to an order, reports to add to an exam, etc. and can contain a URL link from the PACS for the EMR to access the exam images

Standards-based, non-proprietary communication, such as HL7, has several advantages.

- Systems that communicate using HL7 can easily integrate with other HL7 compliant healthcare systems. Because of this, healthcare facilities have more options when purchasing new systems.
- Better communication between systems saves you time and headaches when implementing them or upgrading.
- Systems that have also been developed in accordance to the Integrating the Healthcare Enterprise (IHE) initiative have a better ability to work together.
 - IHE is an initiative developed and coordinated by healthcare professionals and the industry to improve the way computer systems in healthcare share information. IHE promotes the coordinated use of established standards, such as DICOM and HL7, to address specific clinical needs in support of optimal patient care.

Although a system may be an HL7 compliant system, this does not guarantee 100% compatibility with other systems that communicate via HL7 messages. Furthermore, previous success interfacing with an HL7 compliant system does not guarantee success with the same application at a different installation. That's because, with Standards, the type of information that must be included is defined and some field locations within the message are defined, but there are areas of flexibility for vendors. This is why you need to have an Interface created for two systems using HL7 to 'talk' to each other. In essence, they use the same words, but may use different sentence structure and the interface acts as a 'grammar book' to help each system know where in the message to look for the information they need. ASPYRA recommends that you conduct testing between any HL7 compliant systems you will be using to ensure compatibility.

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When choosing which HL7 interfaces to get, keep in mind your systems' capabilities and your workflow. There will usually be a fee from both vendors (sending and receiving) for interfaces because both have to do work on it. Some vendors charge separately for each message type, so if you want the patient demographic information along with the Order information, you need an ADT and ORM message from your scheduling application. That may be considered 1 interface or 2 depending on the vendor you work with.

A vendor may offer an SIU message instead to help save you cost on the interfaces. The primary difference between SIU messages and ADT/ORM messages is that an SIU message will send EVERY change or scheduling event that happens in that system to the receiving system rather than just the Orders. The receiving system may then receive a lot of messages that have nothing to do with that system. For example, your PACS may receive all the doctors' office visit appointments, imaging appointments, follow up visits, lab visits, etc. rather than just orders for any imaging needed. That will mean additional steps to help keep those items from 'cluttering up' a system that doesn't need them.

Additional considerations to make:

- Will you have results for tests or diagnostic reports passing between systems? You will need to determine which 'direction' they need to go to support the workflow that fits your facility best. Will the results or report go into another Information System or PACS first, then pass to the EMR or into the EMR first, then pass to the other system?
- Do you want your EMR to receive a URL link to the images in your PACS to help with Meaningful Use? Is your PACS vendor capable of providing it? Can your EMR handle receiving it?
- Will you have messages coming into your systems from outside facilities? Check that the Patient ID's and other identifying information won't be mismatching with existing patients in your system.

The intercommunication between systems is getting better over time and someday may actually reach the 'Plug and Play' stage. In the meantime, don't hesitate to check with ASPYRA or your vendors for more information on this or other topics.