

SIIM 2007 Workflow Demo Preview

If you have struggled with workflow issues related to new imaging modalities and techniques, then you need to be sure to attend a new general session at the SIIM 2007 Annual Meeting – a live workflow demonstration that will illustrate practical issues relating to fast-evolving changes in imaging.

The session is designed to address the new workflow issues that have arisen due to rapid adaptation of advanced and new imaging techniques, such as multi-detector CT, PET/CT, and Cardiac CT/MR imaging. In the session, presenters will highlight current challenges to the interpretation process as seen in today's clinical workflow by demonstrating case interpretation live during the session. The cases will illustrate how current workflow scenarios are not yet addressing and incorporating these new techniques.

Three different workflow scenarios – trauma, cardiology, and nuclear medicine – will be presented, each highlighting a new workflow challenge.

Trauma

In the trauma cases, issues of rapid interpretation and working quickly with images from differing sources will be addressed. Dr. Kathirkamanthan Shanmuganathan will present two cases and show how the speed at which an emergency situation is addressed has a huge impact on how and when a patient is treated. The more big studies that are done – such as full-body CT scans and others that are becoming more and more common with newly available technologies – the longer time it takes to get and interpret the images, which can delay patient treatment.

The case will follow a patient from the time of injury and through the trauma center. The “patient” will arrive at the treatment center as a “John Doe,” adding a further complication due to lack of access to prior studies that may be on file or in the PACS, but are not retrievable because the patient's identity is not known, slowing down assessment and treatment. This case also demonstrates the need to access prior studies. This case will illustrate how PACS can handle unusual images; and help understand the urgency of situations in trauma and how technology is needed to facilitate the flow. There is a need for advanced imaging in a short time to make the correct medical decisions.

A second trauma case will illustrate challenges faced when two patients are involved in the same incident. When examined by the emergency responding team, they are sent to two different facilities. As treatment progresses, both patients end up being transferred to another hospital, a level-1 trauma center. This case will demonstrate difficulties in loading images from an unfamiliar system (the first hospital) and problems that arise when the radiologist has no easy way to import a study into his system.

Cardio

Cases addressing cardiology workflow will point out the need for system integration and the potential problems when cardio PACS and radiology PACS do not interact. With all of the new hybrid systems in use – Cardiac CT/MR, Echocardiography Ultrasound, etc. – there

is still no good system that will allow both cardiologists and radiologists to read all images.

Dr. Anwer Quershi will show through his live workflow demo how going back and forth to various workstations and the use of different equipment is disruptive and slows treatment. It would be ideal if the back-end PACS is where images would reside and be uniformly shared. There is a clinical need for combining all of these imaging techniques; giving access to radiologists at other workstations; and letting back-end and front-end PACS communicate.

The issue here is access to images and facilitating workstation access for different doctors.

Nuclear Medicine

This is the biggest challenge area of the three workflow scenarios presented during the general session: integrating nuclear medicine interpretations into PACS. The resulting data from nuclear medicine tests requires post-processing tools that are not available on PACS; until recently, you couldn't even send nuclear medicine images to PACS. Dr. Eliot Siegel will present nuclear medicine scenarios and demonstrate that these interpretations require a dedicated/proprietary nuclear medicine workstation. Nuclear medicine datasets include raw data that may only work on equipment that support the proprietary format. A PET/CT scan is an example.

This case illustrates the disruptions that can be introduced due to multiple systems and the need to go back and forth.

The datasets for the scenarios presented in the live workflow demo contain images from various modalities, including:

- CT
- Digital radiography (CR and DR)
- Angio (XA)
- Nuclear medicine
- PET
- Echocardio (ultrasound)
- Cardio cath (XA)

To further enhance the educational experience of the audience, the datasets are available to all of the vendors in the SIIM exhibit hall, so that SIIM attendees can experience the interpretation challenges and solutions provided by the different vendors.

In addition to the cases being presented during the session, three other cases are also available covering issues related to multi-modality interpretation, large data set interpretation, and interruption during interpretation.