

Most medical equipment is based on computers, and those responsible for the equipment need a good understanding of the technology to be able to configure and use the equipment well. In the specialties in which Medical Physicists are active, this has probably been true for longer than any other medical specialties. Physicists therefore have to be involved and expert on the use of computers, networks and other IS technologies. However, hospitals and clinics rely on business and patient records systems, which are generally managed by an Information Systems department. The IS department generally provides core network infrastructure and may be formally tasked by the organization with responsibility for all computer systems. In many cases, the physicist is the only department member who really understands how everything is connected, how it works, and how to troubleshoot problems. Since the computer-based clinical equipment is generally networked there is a potential conflict area between Physicists, as the clinical experts, and IS.

This presentation will examine some of the issues at this interface, from two different perspectives. One speaker is a physicist in a large organization responsible for comprehensive cancer care for a population of 4.5 million. The other speaker is a member of a consulting group that covers 5 radiation therapy centers of various sizes and complexities, but all small.

The talk will also try to give practical advice on some areas where physicists may have specific requirements where an IS department may have problems in providing expertise. Areas to be covered include:

- equipment specifications;
- different operating systems;
- mixing equipment from a different vendors;
- licensing;
- networks, domains, firewalls;
- image transfer;
- DICOM;
- security.

Educational Objectives:

1. Understand the process for developing equipment specifications
2. Ability to interact with vendors and IS on licensing issues.
3. Understand networks, domains, firewalls and network security.
4. Requirements for successful image transfer
5. Understand Dicom and HL7 file format issues
6. Recognize the impact that HIPPA has on a physicist