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Address of Correspondence:

Editor in Chief
North Bengal Medical College Journal
North Bengal Medical College
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Picture Archiving and Communication System in Modern Health Care Facilities

Dr. Moffazal Sharif, Assistant Professor, Department of Radiology and Imaging, Khwaja Yunus Ali Medical College, Sirajganj

PACS (picture archiving and communication system) is a medical imaging technology which provides economical storage and convenient access to images from multiple modalities like X-ray plain film, computed tomography (CT) and magnetic resonance imaging (MRI). The principles of PACS were first discussed at meetings of radiologists in 1982.[1] Dr Harold Glass, a medical physicist working in London in the early 1990s secured UK Government funding and managed the project over many years which transformed Hammersmith Hospital in London as the first filmless hospital in the United Kingdom. Dr Glass died a few months after the project came live but is credited with being one of the pioneers of PACS. The first large-scale PACS installation was in 1982 at the University of Kansas, Kansas City. This first installation became more of a teaching experience of what not to do rather than what to do in a PACS installation. As electronic images and reports are transmitted digitally via PACS, this eliminates the need to manually file, retrieve, or transport film jackets. The universal format for PACS image storage and transfer is DICOM (Digital Imaging and Communications in Medicine). A PACS consists of four major components, the imaging modalities such as X-ray , CT and MRI, a secured network for the transmission of patient information, workstations for interpreting and reviewing images and archives for the storage and retrieval of images and reports. Combined with available and emerging web technology, PACS has the ability to deliver timely and efficient access to images, interpretations, and related data.[2-4] PACS replaces hard-copy based means of managing medical images, such as film archives. With the decreasing price of digital storage, PACS provide a growing cost and space advantage over film archives in addition to the instant access to prior images at the same institution. Digital copies are referred to as Soft-copy. It expands on the possibilities of conventional systems by providing capabilities of off-site viewing and reporting (distance education, telediagnosis). It enables practitioners in different physical locations to access the same information simultaneously for teleradiology. PACS provides the electronic platform for radiology images interfacing with other medical automation systems such as Hospital Information System (HIS), Electronic Medical Record (EMR), Practice Management Software, and Radiology Information System (RIS). It is also used by radiology personnel to manage the workflow of patient examination.[5] A full PACS provides a single point of access for images and their associated data. That is, it should support all digital modalities, in all departments, throughout the enterprise. However, until PACS penetration is complete, individual islands of digital imaging not yet connected to a central

PACS may exist. These may take the form of a localized, modality-specific network of modalities, workstations and storage (a so-called "mini-PACS"), or may consist of a small cluster of modalities directly connected to reading workstations without long term storage or management. Such systems are also often not connected to the departmental information system. Historically, Ultrasound, Nuclear Medicine and Cardiology Cath Labs are often departments that adopt such an approach. In the US PACS are classified as Medical Devices, and hence if for sale are regulated by the USFDA. In general they are subject to Class 2 controls and hence require a 510 (k), though individual PACS components may be subject to less stringent general controls.[2,4] The Society for Imaging Informatics in Medicine (SIIM) is the world wide professional and trade organization that provides an annual meeting and a peer-reviewed journal to promote research and education about PACS and related digital topics.

References

1. Choplin R. Picture archiving and communication systems: an overview. Radiographics. 1992; 12: 127–129.
2. Allison SA, Sweet CF, Beall DP, Lewis TE, Monroe T. Department of Defense picture archiving and communication system acceptance testing: results and identification of problem components. J Digit Imaging. 2005; 18: 203–208.
3. Duerinckx AJ, Pisa EJ. Filmless Picture Archiving and Communication System (PACS) in Diagnostic Radiology. Proc SPIE. 1982; 318: 9–18. Reprinted in IEE Computer Society Proceedings of PACS'82, order No 388.
4. Samuel J, Dwyer III. A personalized view of the history of PACS in the USA. In: Medical Imaging 2000: PACS Design and Evaluation: Engineering and Clinical Issues. Editeds Blains GJ, Eliot L, Siegel. 2000; 3980: 2-9.
5. Bryan S, Weatherburn GC, Watkins JR, Buxton MJ. The benefits of hospital-wide picture archiving and communication systems: a survey of clinical users of radiology services. Br J Radiol. 1999; 72 (857): 469–478.